International
IOR Rectifier

Single Event Effects Test Report

RIC 7113

January 2000
Revision 1

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INTRODUCTION

On January 27, 2000 International Rectifier Corp. (IR) characterized the RIC7113 for Single Event Effects (SEE) hardness. The irradiation was performed at Brookhaven National Laboratory, using the Tandem Van de Graaff generator. Three ion species were used to characterize and verify the SEE hardness of the RIC7113. Three wafer lots, each with differing characteristics, were utilized during the SEE test. Wafer Lot 800819, the most recent lot produced, is considered the "final recipe". The SEE performance of 800819 vs. 800715 was clearly superior and was therefore used to establish the SOA graphs illustrated in Figures 1 and 2. Only 3 devices from wafer lot 800762 were tested.

The RIC7113 is a radiation hardened independent high and low side gate driver intended for use in bridge topologies. Both the high and low side outputs are in-phase with their respective inputs. The high side may be floated by as much as 400V with respect to the low side.

TEST METHOD

The test method used as a guide in developing the test plan is EIA/JEDEC Test Method 57. The test method establishes the basic requirements for the performance of the test. Additionally it was determined to require a minimum of 3 devices to pass at each in-situ bias point.

TEST PLAN

The test plan is included in Appendix D. In summary the testing occurred in the following manner:
All devices were mounted in 14 pin ceramic dual-in-line packages. The lid was not installed to allow the beam to directly impinge upon the die surface. Up to 3 test samples were loaded onto the test boards and placed into the beam line, under high vacuum conditions. The desired test sample was positioned into the beam line, and when ready the beam shutter was removed beginning the irradiation of the test sample. Quiescent bias currents were monitored and used to predict device acceptance. Transient errors were captured using a digital storage oscilliscope during dynamic bias. Once the desired Fluence was achieved the beam was automatically shuttered and the bias was removed. The irradiated devices were returned to IR for subsequent electrical testing using ATE.

Two biases were used in the characterization. A static bias applied fixed DC voltages to all power connections and the inputs were forced to 0V. The dynamic bias was only different in that the high and low side inputs were driven by a 50kHz square wave signal.

TEST FACILITY

The Brookhaven National Laboratory Tandem Van de Graaff generator is equipped with the necessary dosimetry to ensure the ion beam is meeting the customer expectation. A printout of the runs, included in Appendix B, includes the beam parameters, i.e., LET, energy, Range, etc., for each run. Table 1 summarizes the beam criteria for the 3 ion species utilized.

Table 1. Nominal Ion Beam Criteria

Ion	LET	Energy	Range
	MeV*mg/cm^2	MeV	μm
Br	37	284	37
I	60	344	33
Au	82	346	28

The Fluence and flux specified for this test was 1E6 ions/cm^2 and 1E4 ions/cm^2/sec, respectively. The beam diameter was set to 0.9cm. The angle of incidence was set to zero (normal to the die surface) and was at times varied to increase the effective LET.

RESULTS

The Insitu bias conditions are shown graphically in Figures 1 and 2 as a plot of the Safe Operation Area (SOA). Each point on the graph, or Insitu bias condition, has been verified by irradiating and subsequent electrical testing of 3 devices, with no failures allowed except as noted. The devices were returned to IR and tested using production ATE. These electrical test results are found in Appendix C, herein. The results of the test were inspected and matched to the notes taken during the test. Tables 2 and 3 provide a summary comparison of the pre and post irradiation electrical performance for wafer lots 800819 and 800715, respectively.

There were two devices that did not correlate with the observed response during the SEE testing. One device was missing and could not be tested post-SEE; this is SN78 from wafer lot 800715 which was irradiated under dynamic conditions with Bromine in run 157. The other device failed the post-SEE electrical testing performed at IR. Serial number 84 from wafer lot 800819 was irradiated under dynamic conditions with Bromine in run153. No failure was observed at the test site and functionallity was verified with the test hardware, however the high side output transistor is no longer functioning. The failure may be a result of handling or other electrical overstress. The Bromine curve is therefore incomplete and will require additional testing in the future.

The RIC7113 exhibited an interesting response to the angle of incidence of the ion beam. Effective LET may be increased in silicon by tilting the ion beam off the normal axis. This was experimentally performed and it was observed that the RIC7113 SEE hardness improved initially. Or said another way, the effect of the ion beam diminished when the beam was tilted off the normal axis. This may be the expected response for Power MOSFET technology but not necessarily so for all portions of the microcircuit. At the worst case effective LET used (100, Au tilted at 35 degrees) it was noted that when VCC was held at 20V the devices would fail, exhibiting high currents on the VCC power bus. The CMOS logic circuits were thus being destroyed for the first time. Lowering the VCC to 17.5V was adequate to achieve proper performance with an effective LET of 100.

In dynamic testing so called “Soft Errors” were recorded. Two distinct types of soft errors were observed. One type illustrated in Figure 3 from run 101, occurs only in the high-side driver and only when the HO output is high. What occurs is a sudden drop in the output which stays low (error state) until the input also goes low, then when the input rises on the next cycle the output is once again in phase. Thus the HO output is corrected within one half cycle of operation. The other soft error is noted

on both output channels at the same time and is illustrated in Figure 4. This error also only occurs when the output is in the high state. The duration of the error is short lasting approximately 500ns. The log sheets and facility data both include the total counts for the number of soft errors recorded. These numbers reflect both types of soft errors together. There is no data to establish which of the two soft errors occur more frequently. It can be said that the first soft error mentioned above may occur slightly more ofter then the latter soft error.

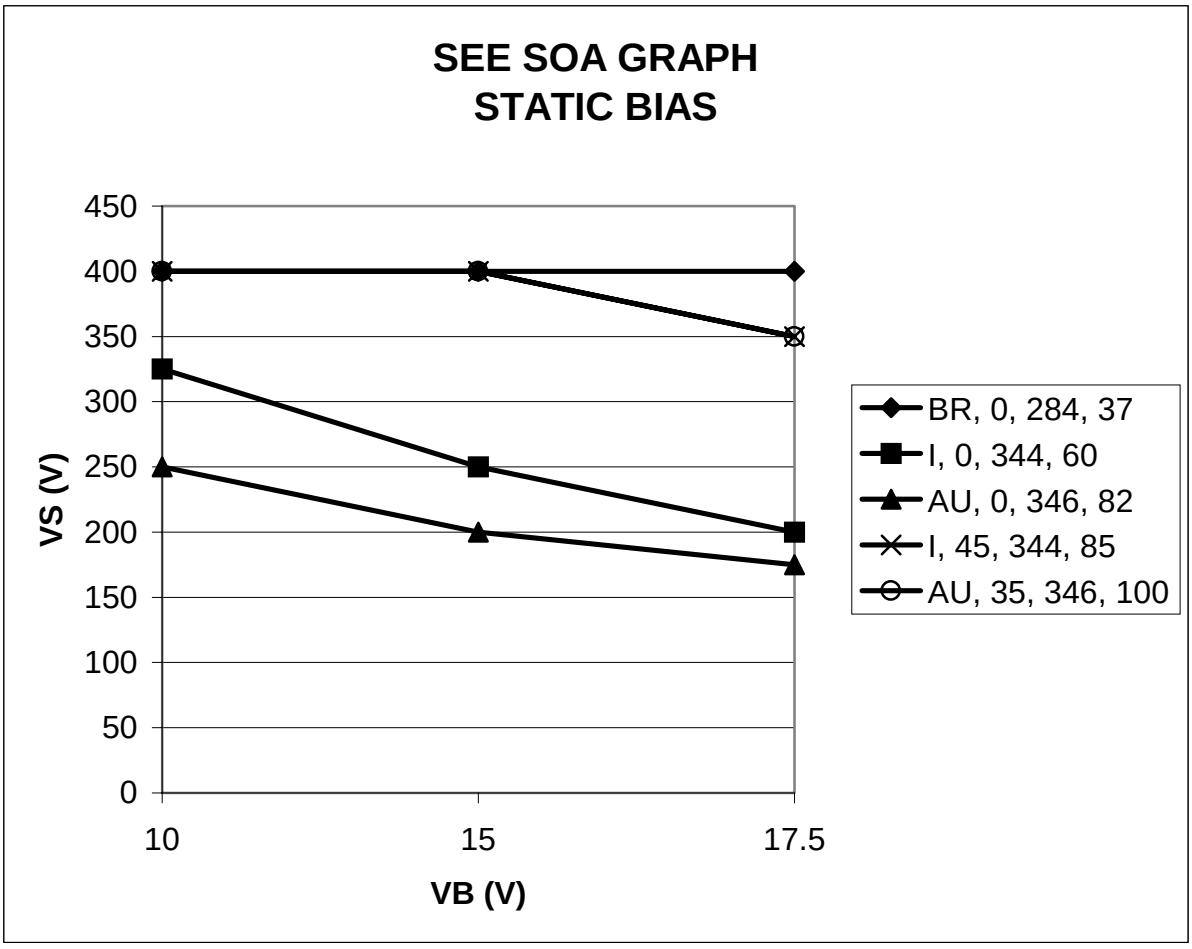
It should be noted that acceptance is assumed for operating conditions below those tested herein. Furthermore the extension of more stressful conditions to less stressful conditions shall also apply to the LET conditions of the various ion species. For example successful operation using the Br ion (LET of 37 MeV*mg/cm^2) shall also imply that the Cu or Ni or any other ion with a LET < 37, shall also be acceptable and not require verification.

CONCLUSION

The performance of IR's RIC7113 was demonstrated to have a very strong degree of hardness against SEE. Worst-case conditions require the beam to strike normal to the die surface. Further study is needed to better understand and quantify the hardness of the RIC7113 as a function of ion incidence.

ION =	**BR,**	**I,**	**AU,**	**I,**	**AU,**	**UNITS**
ANGLE =	0,	0,	0,	45,	35,	DEGREES
ENERGY=	284,	344,	346,	344,	346,	MeV
LET =	37	60	82	85	100	MeV*cm^2/mg
VB	**VS**	**VS**	**VS**	**VS**	**VS**	
10	400	325	250	400	400	V
15	400	250	200	400	400	V
17.5	400	200	175	350	350	V

Note: VCC/VDD = 20V, except for LET = 100, then VCC/VDD = 17.5V

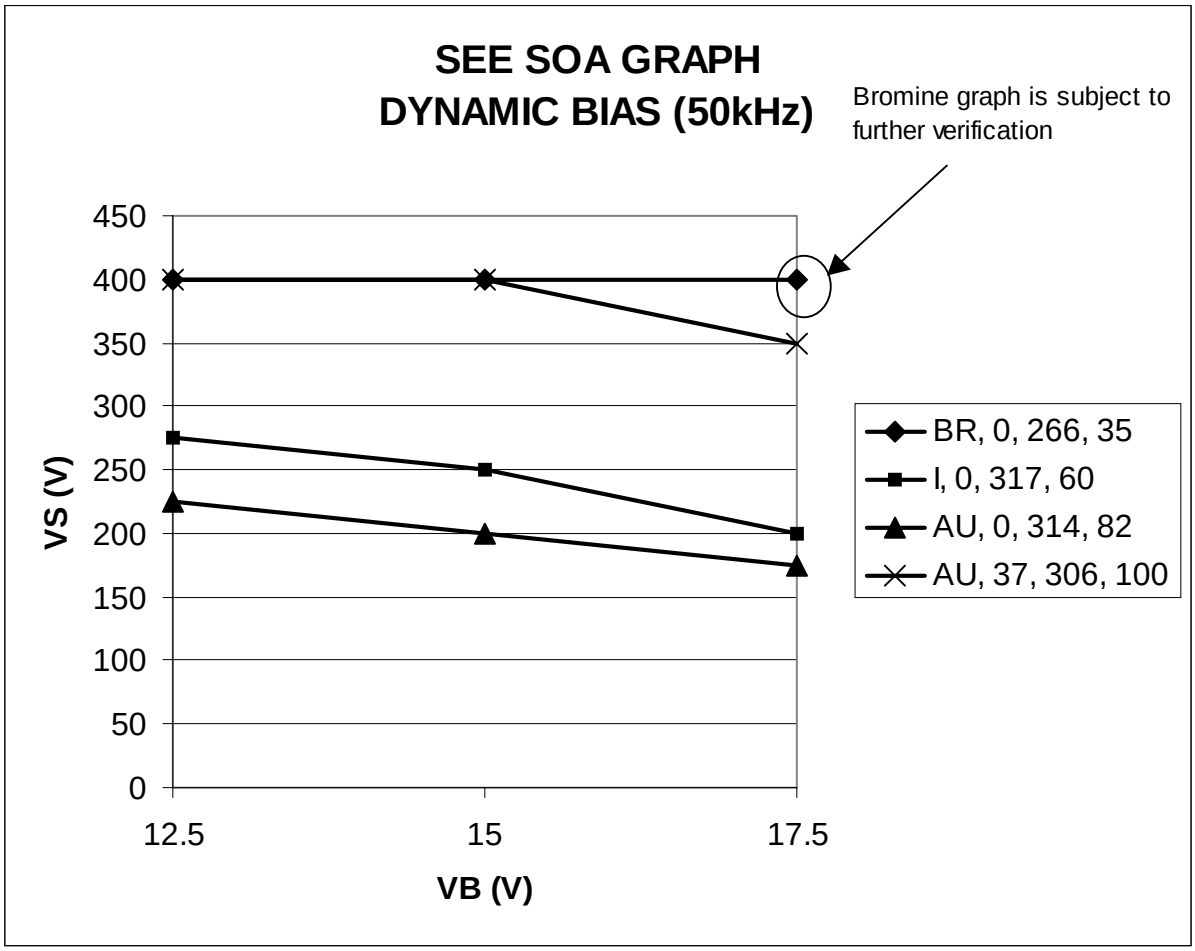


Legend indicates Ion, Angle of Incidence, Energy and LET

Figure 1

ION =	**BR,**	**I,**	**AU,**	**AU,**	**UNITS**
ANGLE =	0,	0,	0,	37,	DEGREES
ENERGY =	266,	317,	314,	306,	MeV
LET =	35	60	82	100	MeV*cm^2/mg
VB	**VS**	**VS**	**VS**	**VS**	
12.5	400	275	225	400	V
15	400	250	200	400	V
17.5	400	200	175	350	V

Note: VCC/VDD = VB



Legend indicates Ion, Angle of Incidence, Energy and LET

Figure 2

Table 2 Summary of Devices Failing Above SOA Curve

Wafer Lot 800819

	Failed Serial Numbers			Devices failing post SEE									
Tests	Pre-SEE	Post-SEE		S/N	RUN #	ION	LET	ANGLE	ST/DY	VS	VB	VCC/VDD	FAILED DURING SEE TEST
CONT_OPN	63,86	4,83		4	10	BR	37.3	0	STATIC	400	20	20	YES
DIOD_SHT				7	13	I	59.9	0	STATIC	350	10	20	YES
V_MAX				12	18	I	59.9	0	STATIC	275	15	20	YES
I_LEAK		84		14	20	I	59.9	0	STATIC	260	15	20	YES
IQDD0				38	65	AU	100	35	STATIC	400	15	20	YES
IQCC0		38,41,44,46		41	68	AU	100	35	STATIC	375	15	20	YES
IQBS0		7,12,14,59,69		44	71	AU	100	35	STATIC	350	15	20	YES
IHIN0	55	55		46	73	AU	100	35	STATIC	325	15	20	YES
ILIN0				49	76	AU	100	35	STATIC	400	15	17.5	YES
ISD0				69	126	AU	80.4	0	DYNAMIC	250	12.5	12.5	YES
IQDD1				84	153	BR	37.4	0	DYNAMIC	400	17.5	17.5	NO
IQCC1													
IQBS1													
IHIN1													
ILIN1				Failed devices not subjected to SEE:									
ISD1				S/N	REASON								
ILO+				55	FAILED PRE								
ILO-				59	FAILED DUE TO POWER MIS-APPLIED								
IHO+		49		63	FAILED PRE								
IHO-				83	FAILED WHILE BEAM WAS BEING TUNED								
FN_15/15				86	FAILED PRE								
VOH_LS													
VOL_LS													
VOL_HS													
VOH_HS													
Vth+HS													
Vth-HS													
Vth+LS													
Vth-LS													
Vth+SD													
TON_LS													
TOFF_LS													
TR_LS													
TF_LS													
TON_HS													
TOFF_HS													
TR_HS													
TF_HS													
TSD_LS													
TSD_HS													
MT_ON													
MT_OFF													
VCCUV+pa													
VCCUV-pa													
VBSUV+pa													
VBSUV-pa													
IQDD1													
IQCC1													
IQBS1													
D_IQDD1													
D_IQCC1													
D_IQBS1													

Table 3 Summary of Devices Failing Above SOA Curve

Wafer Lot 800715

	Failed Serial Numbers			Devices failing post SEE									
Tests	Pre-SEE	Post-SEE		S/N	RUN #	ION	LET	ANGLE	ST/DY	VS	VB	VCC/VDD	FAILED DURING SEE TEST
CONT_OPN	11,46	11,46,56,78		10	40	I	59.9	0	STATIC	325	10	20	YES
DIOD_SHT				14	43	I	59.9	0	STATIC	275	10	20	YES
V_MAX				16	45	I	59.9	0	STATIC	265	10	20	YES
I_LEAK		62		31	86	AU	100	35	STATIC	350	17.5	17.5	YES
IQDD0				57	109	AU	100	37	DYNAMIC	400	15	15	YES
IQCC0				The following device is missing and not tested post SEE:									
IQBS0	42,48,67,70	10,14,16,31,42,57,67,70		78	157	BR	37.4	0	DYNAMIC	400	17.5	17.5	NO
IHIN0													
ILIN0													
ISD0													
IQDD1				Failed devices not subjected to SEE:									
IQCC1				S/N	REASON								
IQBS1				11	FAILED PRE								
IHIN1				26	FAILED PRE								
ILIN1				42	FAILED PRE								
ISD1				46	FAILED PRE								
ILO+				48	FAILED PRE								
ILO-				56	FAILED DURING PUMPDOWN WITH POWER APPLIED								
IHO+	26	26		62	FAILED PRE								
IHO-				67	FAILED PRE								
FN_15/15				70	FAILED PRE								
VOH_LS													
VOL_LS													
VOL_HS													
VOH_HS													
Vth+HS													
Vth-HS													
Vth+LS													
Vth-LS													
Vth+SD													
TON_LS													
TOFF_LS													
TR_LS													
TF_LS													
TON_HS													
TOFF_HS													
TR_HS													
TF_HS													
TSD_LS													
TSD_HS													
MT_ON													
MT_OFF													
VCCUV+pa													
VCCUV-pa													
VBSUV+pa	62												
VBSUV-pa													
IQDD1													
IQCC1													
IQBS1													
D_IQDD1													
D_IQCC1													
D_IQBS1													

RUN #101

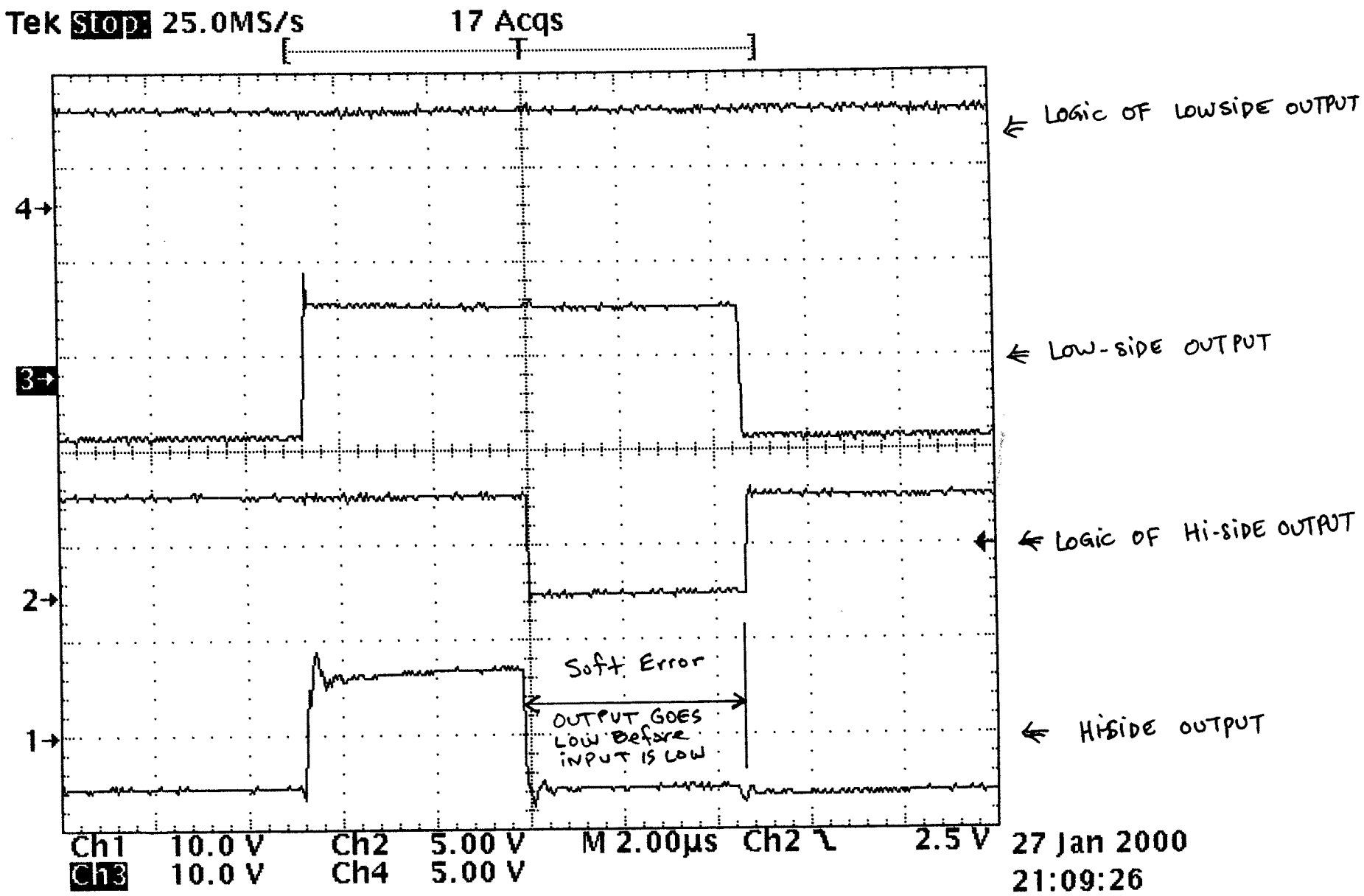


FIGURE 3

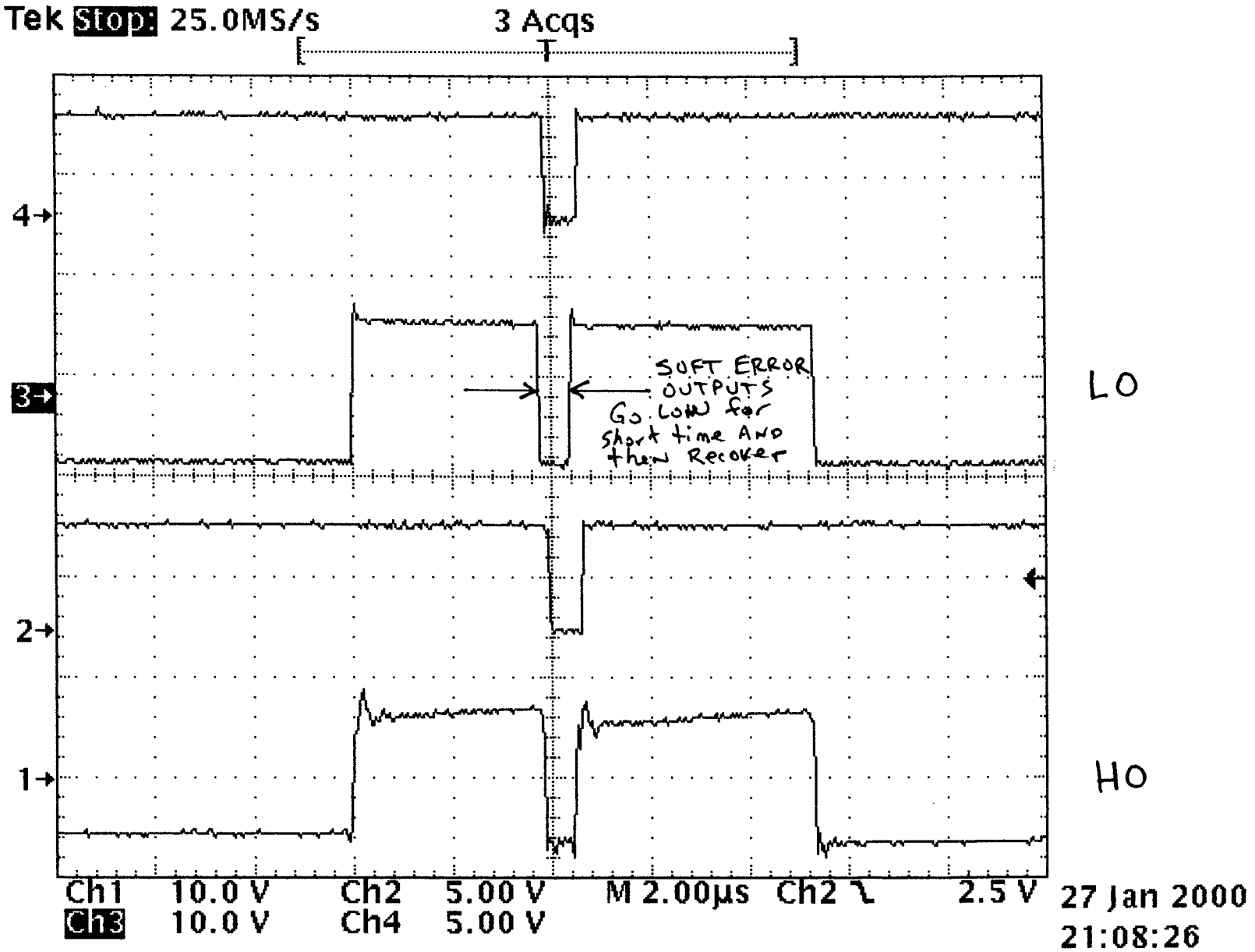

Tek Stop: 25.0MS/s
3 Acqs
4→
3→
2→
1→
SOFT ERROR
OUTPUTS
Go LOW for
short time AND
then Recover
LO
HO
Ch1 10.0 V Ch2 5.00 V M 2.00µs Ch2 ↴ 2.5 V
Ch3 10.0 V Ch4 5.00 V
27 Jan 2000
21:08:26

FIGURE 4

Appendix A

Log Sheets

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
1	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800762	1	A	0	0	0	0	0	20	17.5	400	P	
2	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800762	4	B	0	0	0	0	0	20	17.5	400	P	
3	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800762	5	C	0	0	0	0	0	20	17.5	400	P	
4	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800715	1	A	0	0	0	0	0	20	17.5	400	P	
5	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800715	2	B	0	0	0	0	0	20	17.5	400	P	
6	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800715	3	C	0	0	0	0	0	20	17.5	400	P	
7	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800819	1	A	0	0	0	0	0	20	17.5	400	P	
8	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800819	2	B	0	0	0	0	0	20	17.5	400	P	
9	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800819	3	C	0	0	0	0	0	20	17.5	400	P	
10	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800819	4	A	0	0	0	0	0	20	20	400	F	
11	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800819	5	B	0	0	0	0	0	20	17.5	400	P	
12	BR	37.3	284	36.7	1.E+04	1.E+06	0	0.84	800819	6	C	0	0	0	0	0	20	17.5	400	P	
13	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	7	A	0	0	0	0	0	20	10	350	F	
14	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	8	B	0	0	0	0	0	20	10	325	P	
15	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	9	C	0	0	0	0	0	20	10	325	P	
16	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	10	A	0	0	0	0	0	20	10	325	P	
17	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	11	B	0	0	0	0	0	20	15	275	P	
18	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	12	C	0	0	0	0	0	20	15	275	F	
19	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	13	A	0	0	0	0	0	20	15	260	P	
20	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	14	B	0	0	0	0	0	20	15	260	F	

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
21	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	15	C	0	0	0	0	0	20	15	250	P	
22	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	16	A	0	0	0	0	0	20	15	250	P	
23	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	17	B	0	0	0	0	0	20	15	250	P	
24	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	18	C	0	0	0	0	0	20	15	250	P	
25	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	19	A	0	0	0	0	0	20	17.5	200	P	
26	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	20	B	0	0	0	0	0	20	17.5	200	P	
27	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800819	21	C	0	0	0	0	0	20	17.5	200	P	
28	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800819	22	A	0	0	0	0	0	20	15	400	P	
29	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800819	23	B	0	0	0	0	0	20	15	400	P	
30	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800819	24	C	0	0	0	0	0	20	15	400	P	
31	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800819	25	A	0	0	0	0	0	20	17.5	350	P	
32	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800819	26	B	0	0	0	0	0	20	17.5	350	P	
33	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800819	27	C	0	0	0	0	0	20	17.5	350	P	
34	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800715	4	A	0	0	0	0	0	20	17.5	350	P	
35	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800715	5	B	0	0	0	0	0	20	17.5	350	P	
36	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800715	6	C	0	0	0	0	0	20	17.5	350	P	
37	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800715	7	A	0	0	0	0	0	20	15	400	P	
38	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800715	8	B	0	0	0	0	0	20	15	400	P	
39	I	84.7	344	23.1	1.E+04	1.E+06	45	0.84	800715	9	C	0	0	0	0	0	20	15	400	P	
40	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	10	A	0	0	0	0	0	20	10	325	F	

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
41	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	13	B	0	0	0	0	0	20	10	275	P	
42	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	12	C	0	0	0	0	0	20	10	275	P	
43	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	14	A	0	0	0	0	0	20	10	275	F	
44	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	15	B	0	0	0	0	0	20	10	265	P	
45	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	16	C	0	0	0	0	0	20	10	265	F	
46	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	17	A	0	0	0	0	0	20	10	250	P	
47	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	18	B	0	0	0	0	0	20	10	250	P	
48	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	19	C	0	0	0	0	0	20	10	250	P	
49	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	20	A	0	0	0	0	0	20	15	200	P	
50	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	21	B	0	0	0	0	0	20	15	200	P	
51	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	22	C	0	0	0	0	0	20	15	200	P	
52	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	23	A	0	0	0	0	0	20	17.5	175	P	
53	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	24	B	0	0	0	0	0	20	17.5	175	P	
54	I	59.9	344	32.7	1.E+04	1.E+06	0	0.84	800715	25	C	0	0	0	0	0	20	17.5	175	P	
55	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	28	A	0	0	0	0	0	20	10	250	P	
56	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	27	B	0	0	0	0	0	20	10	250	P	
57	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	30	C	0	0	0	0	0	20	10	250	P	
58	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	31	A	0	0	0	0	0	20	15	175	P	
59	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	32	B	0	0	0	0	0	20	15	175	P	
60	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	33	C	0	0	0	0	0	20	15	175	P	

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
61	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	34	A	0	0	0	0	0	20	17.5	175	P	
62	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	35	B	0	0	0	0	0	20	17.5	175	P	
63	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800819	36	C	0	0	0	0	0	20	17.5	175	P	
64	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	37	A	0	0	0	0	0	20	15	400	P	
65	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	38	B	0	0	0	0	0	20	15	400	F	
66	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	39	C	0	0	0	0	0	20	15	375	P	
67	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	40	A	0	0	0	0	0	20	15	375	P	
68	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	41	B	0	0	0	0	0	20	15	375	F	
69	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	42	C	0	0	0	0	0	20	15	350	P	
70	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	43	A	0	0	0	0	0	20	15	350	P	
71	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	44	B	0	0	0	0	0	20	15	350	F	LOGIC FAILED
72	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	45	C	0	0	0	0	0	20	15	325	P	
73	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	46	A	0	0	0	0	0	20	15	325	F	LOGIC FAILED
74	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	47	B	0	0	0	0	0	17.5	15	400	P	
75	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	48	C	0	0	0	0	0	17.5	15	400	P	
76	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	49	A	0	0	0	0	0	17.5	15	400	F	HO FAILED
77	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	50	B	0	0	0	0	0	17.5	15	400	P	
78	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	51	C	0	0	0	0	0	17.5	15	400	P	
79	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	52	A	0	0	0	0	0	17.5	17.5	350	P	
80	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	53	B	0	0	0	0	0	17.5	17.5	350	P	

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
81	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800819	54	C	0	0	0	0	0	17.5	17.5	350	P	
82	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	26	A	0	0	0	0	0	17.5	15	400	P	
83	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	27	B	0	0	0	0	0	17.5	15	400	P	SOFT FAILURE
84	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	28	C	0	0	0	0	0	17.5	15	400	P	SOFT FAILURE
85	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	30	A	0	0	0	0	0	17.5	17.5	350	P	
86	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	31	B	0	0	0	0	0	17.5	17.5	350	F	
87	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	32	C	0	0	0	0	0	17.5	17.5	325	P	
88	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	33	A	0	0	0	0	0	17.5	17.5	325	P	
89	AU	100	346	23.2	1.E+04	1.E+06	35	0.84	800715	34	B	0	0	0	0	0	17.5	17.5	325	P	
90	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	35	C	0	0	0	0	0	20	10	200	P	
91	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	36	A	0	0	0	0	0	20	10	200	P	
92	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	37	B	0	0	0	0	0	20	10	200	P	
93	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	38	C	0	0	0	0	0	20	15	150	P	
94	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	39	A	0	0	0	0	0	20	15	150	P	
95	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	40	B	0	0	0	0	0	20	15	150	P	
96	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	41	C	0	0	0	0	0	20	15	150	P	
97	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	45	A	0	0	0	0	0	20	17.5	100	P	
98	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	43	B	0	0	0	0	0	20	17.5	100	P	
99	AU	82.1	346	28.2	1.E+04	1.E+06	0	0.84	800715	44	C	0	0	0	0	0	20	17.5	100	P	
100	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	47	NA	50	0	50	50	50	15	15	150	P	28

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
101	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	48	NA	50	0	50	50	50	15	15	150	P	27
102	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	49	NA	50	0	50	50	50	15	15	150	P	18
103	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	50	NA	50	0	50	50	50	17.5	17.5	100	P	14
104	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	51	NA	50	0	50	50	50	17.5	17.5	100	P	22
105	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	52	NA	50	0	50	50	50	17.5	17.5	100	P	19
106	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800715	53	NA	50	0	50	50	50	17.5	17.5	325	P	26
107	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800715	54	NA	50	0	50	50	50	17.5	17.5	325	P	30
108	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800715	55	NA	50	0	50	50	50	17.5	17.5	325	P	29
109	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800715	57	NA	50	0	50	50	50	15	15	400	F	34
110	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800715	58	NA	50	0	50	50	50	15	15	375	P	30
111	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800715	59	NA	50	0	50	50	50	15	15	375	P	23
112	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800715	60	NA	50	0	50	50	50	15	15	375	P	38
113	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800819	55	NA	50	0	50	50	50	15	15	400	P	38
114	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800819	56	NA	50	0	50	50	50	15	15	400	P	32
115	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800819	57	NA	50	0	50	50	50	15	15	400	P	33
116	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800819	58	NA	50	0	50	50	50	17.5	17.5	350	P	16
117	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800819	60	NA	50	0	50	50	50	17.5	17.5	350	P	18
118	AU	100	306	20.9	1.E+04	1.E+06	37	0.95	800819	61	NA	50	0	50	50	50	17.5	17.5	350	P	27
119	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	62	NA	50	0	50	50	50	17.5	17.5	175	P	24
120	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	63	NA	50	0	50	50	50	17.5	17.5	175	P	19

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
121	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	64	NA	50	0	50	50	50	17.5	17.5	175	P	18
122	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	65	NA	50	0	50	50	50	15	15	200	P	24
123	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	66	NA	50	0	50	50	50	15	15	200	P	16
124	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	67	NA	50	0	50	50	50	15	15	200	P	16
125	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	68	NA	50	0	50	50	50	12.5	12.5	250	P	22
126	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	69	NA	50	0	50	50	50	12.5	12.5	250	F	25
127	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	70	NA	50	0	50	50	50	12.5	12.5	225	P	23
128	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	71	NA	50	0	50	50	50	12.5	12.5	225	P	17
129	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800819	72	NA	50	0	50	50	50	12.5	12.5	225	P	26
130	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	61	NA	50	0	50	50	50	12.5	12.5	175	P	21
131	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	62	NA	50	0	50	50	50	12.5	12.5	175	P	20
132	AU	80.4	314	26.5	1.E+04	1.E+06	0	0.95	800715	63	NA	50	0	50	50	50	12.5	12.5	175	P	19
133	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	64	NA	50	0	50	50	50	12.5	12.5	225	P	27
134	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	65	NA	50	0	50	50	50	12.5	12.5	225	P	26
135	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	66	NA	50	0	50	50	50	12.5	12.5	225	P	19
136	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	68	NA	50	0	50	50	50	12.5	12.5	225	P	26
137	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	69	NA	50	0	50	50	50	15	15	200	P	22
138	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	71	NA	50	0	50	50	50	15	15	200	P	25
139	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	72	NA	50	0	50	50	50	15	15	200	P	31
140	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	73	NA	50	0	50	50	50	17.5	17.5	175	P	26

RIC SEE Log Sheet

Date: Jan 27,2000 Operators: RW & HC Facility: BNL

Run	Ion	LET	Energy	Range	Flux	Fluence	Angle	Beam Dia.	Wafer Lot	S/N	Socket #	HIN	SD	LIN	HO	LO	VDD/VCC	VB	VS	P/F	Comment
#		MeV/cm2/mg	MeV	µm	#/cm2/sec	#/cm2	deg	cm.				0/1 or kHz	0/1	0/1 or kHz	0/1 or kHz	0/1 or kHz	Volt	Volt	Volt		Comment or soft errors
141	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	74	NA	50	0	50	50	50	17.5	17.5	175	P	18
142	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800715	75	NA	50	0	50	50	50	17.5	17.5	175	P	21
143	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	73	NA	50	0	50	50	50	17.5	17.5	200	P	23
144	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	74	NA	50	0	50	50	50	17.5	17.5	200	P	24
145	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	75	NA	50	0	50	50	50	17.5	17.5	200	P	22
146	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	76	NA	50	0	50	50	50	15	15	250	P	30
147	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	77	NA	50	0	50	50	50	15	15	250	P	26
148	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	78	NA	50	0	50	50	50	15	15	250	P	27
149	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	79	NA	50	0	50	50	50	12.5	12.5	275	P	26
150	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	80	NA	50	0	50	50	50	12.5	12.5	275	P	22
151	I	59.8	343	32.6	1.E+04	1.E+06	0	0.95	800819	81	NA	50	0	50	50	50	12.5	12.5	275	P	27
152	BR	37.4	283	36.5	1.E+04	1.E+06	0	0.95	800819	82	NA	50	0	50	50	50	17.5	17.5	400	P	22
153	BR	37.4	283	36.5	1.E+04	1.E+06	0	0.95	800819	84	NA	50	0	50	50	50	17.5	17.5	400	P	5
154	BR	37.4	283	36.5	1.E+04	1.E+06	0	0.95	800819	85	NA	50	0	50	50	50	17.5	17.5	400	P	6
155	BR	37.4	283	36.5	1.E+04	1.E+06	0	0.95	800715	76	NA	50	0	50	50	50	17.5	17.5	400	P	7
156	BR	37.4	283	36.5	1.E+04	1.E+06	0	0.95	800715	77	NA	50	0	50	50	50	17.5	17.5	400	P	3
157	BR	37.4	283	36.5	1.E+04	1.E+06	0	0.95	800715	78	NA	50	0	50	50	50	17.5	17.5	400	P	4

Appendix B

Facility Data

International Rectifier Corp.
RIC7113 SEE Test Report

Run	Date	Time	Device ID	Ion	Energy	Range	LET(Si)	Tilt	Roll	Time	Flux	Fluence	Dose	TotalDose	Upsets	CrossSec	Left	Top	Bottom	Right	Unif	Center
#					MeV	um	MeV*cm2 /mg	deg	deg	sec	#/cm2/sec	#/cm2	RAD(Si)	RAD(Si)	cm2	%	%	%	%	%	%	
RIC Static Testing																						
0	27-Jan-00	9:39	Center	Br-81	284	36.7	37.3	0	0	10.3	1.54E+04	1.60E+05	0.00E+00	0.00E+00	0	0.00E+00	8.4	0.1	-8.3	-0.2	93.6	10.2
1	27-Jan-00	9:39	A	Br-81	284	36.7	37.3	0	0.1	72.4	1.53E+04	1.11E+06	6.63E+02	9.02E+04	0	0.00E+00	7.5	-1	-7.7	1.2	94.1	S
2	27-Jan-00	9:55	B	Br-81	284	36.7	37.3	0	0.1	99.3	1.01E+04	1.01E+06	6.01E+02	7.94E+04	0	0.00E+00	8.6	-2.8	-8.9	3.1	93	S
3	27-Jan-00	9:58	C	Br-81	284	36.7	37.3	0	0.1	92.1	1.09E+04	1.00E+06	6.01E+02	9.66E+04	0	0.00E+00	8.9	-2.6	-9.1	2.7	92.9	S
4	27-Jan-00	10:08	A	Br-81	284	36.7	37.3	0	0.1	78.9	1.27E+04	1.01E+06	6.01E+02	9.08E+04	0	0.00E+00	9.2	0	-6.1	-3.1	93.6	S
0	27-Jan-00	10:10	Center	Br-81	284	36.7	37.3	0	0	10.3	1.31E+04	1.35E+05	0.00E+00	0.00E+00	0	0.00E+00	8.9	0.4	-5.9	-3.4	93.7	12.5
5	27-Jan-00	10:10	B	Br-81	284	36.7	37.3	0	0.1	78.4	1.31E+04	1.03E+06	6.14E+02	8.01E+04	0	0.00E+00	8.8	-0.7	-4.9	-3.2	93.9	S
6	27-Jan-00	10:12	C	Br-81	284	36.7	37.3	0	0.1	77	1.31E+04	1.00E+06	6.01E+02	9.72E+04	0	0.00E+00	10.5	0.1	-5.4	-5.2	92.6	S
7	27-Jan-00	10:24	A	Br-81	284	36.7	37.3	0	0.1	94.6	1.06E+04	1.00E+06	6.01E+02	9.14E+04	0	0.00E+00	10	-2.5	-8.6	1.1	92.7	S
8	27-Jan-00	10:27	B	Br-81	284	36.7	37.3	0	0.1	93.3	1.08E+04	1.01E+06	6.01E+02	8.07E+04	0	0.00E+00	9.5	-1.3	-8	-0.2	93.2	S
9	27-Jan-00	10:29	C	Br-81	284	36.7	37.3	0	0.1	89.9	1.12E+04	1.00E+06	6.01E+02	9.78E+04	0	0.00E+00	9.5	-1.4	-7.8	-0.4	93.3	S
10	27-Jan-00	10:40	A	Br-81	284	36.7	37.3	0	0.1	58.3	7.81E+03	4.55E+05	2.72E+02	9.17E+04	1	2.20E-06	18	6.7	-14.7	-9.9	86.8	S
0	27-Jan-00	10:43	Center	Br-81	284	36.7	37.3	0	0	10.3	1.52E+04	1.57E+05	0.00E+00	0.00E+00	0	0.00E+00	-0.7	3.9	1.9	-5	96.2	10.4
11	27-Jan-00	10:43	B	Br-81	284	36.7	37.3	0	0.1	98.9	9.99E+03	9.87E+05	5.91E+02	8.12E+04	0	0.00E+00	11.7	4.8	-10.7	-5.8	90.8	S
12	27-Jan-00	10:45	C	Br-81	284	36.7	37.3	0	0.1	64.5	1.56E+04	1.00E+06	6.01E+02	9.84E+04	0	0.00E+00	-1.1	2.4	1.1	-2.4	97.9	S
0	27-Jan-00	11:01	Center	I-127	344	32.7	59.9	0	0	10.3	1.51E+04	1.55E+05	0.00E+00	0.00E+00	0	0.00E+00	3	-2.1	-0.9	0	97.6	11
13	27-Jan-00	11:02	A	I-127	344	32.7	59.9	0	0.1	7.5	1.50E+04	1.13E+05	1.08E+02	9.18E+04	1	8.89E-06	2.3	0.7	-1.5	-1.6	98.1	S
IBS increased shortly after the run starts																						
14	27-Jan-00	11:05	B	I-127	344	32.7	59.9	0	0.1	65.3	1.54E+04	1.01E+06	9.64E+02	8.22E+04	0	0.00E+00	2.4	-0.2	-0.8	-1.4	98.1	S
15	27-Jan-00	11:07	C	I-127	344	32.7	59.9	0	0.1	65.6	1.53E+04	1.00E+06	9.63E+02	9.94E+04	0	0.00E+00	2.2	0.2	-1.1	-1.3	98.3	S
16	27-Jan-00	11:17	A	I-127	344	32.7	59.9	0	0.1	67.4	1.49E+04	1.01E+06	9.64E+02	9.28E+04	0	0.00E+00	2.4	-0.3	-0.7	-1.4	98.1	S
17	27-Jan-00	11:20	B	I-127	344	32.7	59.9	0	0.1	68.3	1.47E+04	1.01E+06	9.64E+02	8.32E+04	0	0.00E+00	2.1	0	-0.6	-1.5	98.3	S
18	27-Jan-00	11:22	C	I-127	344	32.7	59.9	0	0.1	62.6	1.47E+04	9.19E+05	8.81E+02	1.00E+05	1	1.09E-06	2.2	0.1	-0.5	-1.8	98.1	S
0	27-Jan-00	11:32	Center	I-127	344	32.7	59.9	0	0	10.3	1.44E+04	1.48E+05	0.00E+00	0.00E+00	0	0.00E+00	1.1	-0.6	0.8	-1.3	98.4	11.9
19	27-Jan-00	11:32	A	I-127	344	32.7	59.9	0	0.1	72.3	1.40E+04	1.01E+06	9.71E+02	9.37E+04	0	0.00E+00	2.2	-0.6	-0.2	-1.5	98.1	S
20	27-Jan-00	11:33	B	I-127	344	32.7	59.9	0	0.1	19.6	1.44E+04	2.83E+05	2.71E+02	8.34E+04	1	3.54E-06	1.6	0.3	-0.9	-1	98.7	S
21	27-Jan-00	11:36	C	I-127	344	32.7	59.9	0	0.1	71.5	1.41E+04	1.01E+06	9.64E+02	1.01E+05	0	0.00E+00	1.7	-0.2	0.1	-1.5	98.4	S
22	27-Jan-00	11:45	A	I-127	344	32.7	59.9	0	0.1	74	1.36E+04	1.01E+06	9.64E+02	9.47E+04	0	0.00E+00	2.1	-0.6	-0.3	-1.2	98.3	S
23	27-Jan-00	11:47	B	I-127	344	32.7	59.9	0	0.1	73.6	1.37E+04	1.01E+06	9.64E+02	8.44E+04	0	0.00E+00	1.9	-0.2	-0.4	-1.3	98.4	S
24	27-Jan-00	11:49	C	I-127	344	32.7	59.9	0	0.1	80.8	1.24E+04	1.00E+06	9.63E+02	1.02E+05	0	0.00E+00	2.8	-1.6	-1.3	0.1	97.8	S
0	27-Jan-00	12:08	Center	I-127	344	32.7	59.9	0	0	10.3	1.18E+04	1.21E+05	0.00E+00	0.00E+00	0	0.00E+00	1.4	-0.7	0.4	-1.2	98.4	12.2
25	27-Jan-00	12:08	A	I-127	344	32.7	59.9	0	0.1	85	1.19E+04	1.01E+06	9.66E+02	9.57E+04	0	0.00E+00	2.3	-0.9	-0.5	-1	98.1	S
26	27-Jan-00	12:10	B	I-127	344	32.7	59.9	0	0.1	83.8	1.20E+04	1.00E+06	9.63E+02	8.54E+04	0	0.00E+00	2.3	-0.9	-0.9	-0.5	98.3	S
27	27-Jan-00	12:12	C	I-127	344	32.7	59.9	0	0.1	84.9	1.18E+04	1.00E+06	9.62E+02	1.03E+05	0	0.00E+00	1.8	-0.4	-0.5	-0.9	98.6	S
28	27-Jan-00	12:29	A	I-127	344	23.1	84.7	45	0.1	91.5	1.10E+04	1.00E+06	1.36E+03	9.70E+04	0	0.00E+00	1.7	-0.3	-0.7	-0.7	98.7	S
29	27-Jan-00	12:31	B	I-127	344	23.1	84.7	45	0.1	83.1	1.21E+04	1.00E+06	1.36E+03	8.67E+04	0	0.00E+00	2.3	-0.5	-0.9	-1	98.2	S
30	27-Jan-00	12:34	C	I-127	344	23.1	84.7	45	0.1	85.2	1.18E+04	1.00E+06	1.36E+03	1.05E+05	0	0.00E+00	2.3	-0.7	-0.8	-0.9	98.2	S
0	27-Jan-00	12:44	Center	I-127	344	32.7	59.9	0	0	10.4	1.63E+04	1.69E+05	0.00E+00	0.00E+00	0	0.00E+00	2.1	0.3	-0.1	-2.3	97.9	10.7
31	27-Jan-00	12:44	A	I-127	344	23.1	84.7	45	0.1	87.2	1.14E+04	9.91E+05	1.34E+03	9.84E+04	0	0.00E+00	2.6	-0.2	-0.6	-1.8	97.9	S
32	27-Jan-00	12:46	B	I-127	344	23.1	84.7	45	0.1	86	1.17E+04	1.00E+06	1.36E+03	8.81E+04	0	0.00E+00	1.7	0.6	-0.5	-1.8	98.3	S
33	27-Jan-00	12:48	C	I-127	344	23.1	84.7	45	0.1	88.6	1.13E+04	1.00E+06	1.36E+03	1.06E+05	0	0.00E+00	1.9	0.3	-0.4	-1.8	98.2	S

International Rectifier Corp.
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Run	Date	Time	Device ID	Ion	Energy	Range	LET(Si)	Tilt	Roll	Time	Flux	Fluence	Dose	TotalDose	Upsets	CrossSec	Left	Top	Bottom	Right	Unif	Center
#					MeV	um	MeV*cm2 /mg	deg	deg	sec	#/cm2/sec	#/cm2	RAD(Si)	RAD(Si)	cm2	%	%	%	%	%	%	
34	27-Jan-00	13:02	A	I-127	344	23.1	84.7	45	0.1	93	1.08E+04	1.00E+06	1.36E+03	9.97E+04	0	0.00E+00	2.6	-0.2	-0.6	-1.8	97.9	S
35	27-Jan-00	13:05	B	I-127	344	23.1	84.7	45	0.1	90.9	1.11E+04	1.00E+06	1.36E+03	8.95E+04	0	0.00E+00	2.4	0.9	-0.6	-2.7	97.7	S
36	27-Jan-00	13:07	C	I-127	344	23.1	84.7	45	0.1	90	1.12E+04	1.00E+06	1.36E+03	1.07E+05	0	0.00E+00	2.5	0.5	-0.6	-2.5	97.7	S
0	27-Jan-00	13:17	Center	I-127	344	32.7	59.9	0	0	10.3	1.45E+04	1.49E+05	0.00E+00	0.00E+00	0	0.00E+00	1.5	0.1	-0.7	-1	98.8	11.2
37	27-Jan-00	13:17	A	I-127	344	23.1	84.7	45	0.1	97.4	1.04E+04	1.01E+06	1.37E+03	1.01E+05	0	0.00E+00	2	0.3	-0.6	-1.7	98.3	S
38	27-Jan-00	13:19	B	I-127	344	23.1	84.7	45	0.1	100	1.00E+04	1.00E+06	1.36E+03	9.08E+04	0	0.00E+00	2.3	0.2	-0.3	-2.2	97.9	S
39	27-Jan-00	13:22	C	I-127	344	23.1	84.7	45	0.1	91.9	1.09E+04	1.00E+06	1.36E+03	1.09E+05	0	0.00E+00	2.2	0	-0.4	-1.8	98.1	S
40	27-Jan-00	13:35	A	I-127	344	32.7	59.9	0	0.1	14.3	1.68E+04	2.41E+05	2.31E+02	1.01E+05	1	4.15E-06	2.5	0	0	-2.5	97.5	S
41	27-Jan-00	13:38	B	I-127	344	32.7	59.9	0	0.1	59.9	1.68E+04	1.01E+06	9.64E+02	9.18E+04	0	0.00E+00	1.7	0.8	-0.7	-1.8	98.3	S
42	27-Jan-00	13:39	C	I-127	344	32.7	59.9	0	0.1	60.3	1.67E+04	1.01E+06	9.65E+02	1.10E+05	0	0.00E+00	1.2	0.8	-0.6	-1.5	98.7	S
0	27-Jan-00	13:53	Center	I-127	344	32.7	59.9	0	0	10.3	1.47E+04	1.52E+05	0.00E+00	0.00E+00	0	0.00E+00	-0.7	1.2	0.9	-1.5	98.7	9.1
43	27-Jan-00	13:53	A	I-127	344	32.7	59.9	0	0.1	68.1	1.45E+04	9.87E+05	9.46E+02	1.02E+05	1	1.01E-06	2	-0.1	-0.1	-1.8	98.2	S
44	27-Jan-00	13:55	B	I-127	344	32.7	59.9	0	0.1	71.4	1.41E+04	1.01E+06	9.63E+02	9.27E+04	0	0.00E+00	1.5	1.5	-0.1	-2.9	97.8	S
45	27-Jan-00	13:57	C	I-127	344	32.7	59.9	0	0.1	62.1	1.34E+04	8.33E+05	7.99E+02	1.10E+05	1	1.20E-06	1.7	1.4	-0.6	-2.5	98	S
46	27-Jan-00	14:08	A	I-127	344	32.7	59.9	0	0.1	85.3	1.18E+04	1.00E+06	9.63E+02	1.03E+05	0	0.00E+00	2	2.1	-0.4	-3.8	97.2	S
47	27-Jan-00	14:10	B	I-127	344	32.7	59.9	0	0.1	87.8	1.14E+04	1.00E+06	9.62E+02	9.37E+04	0	0.00E+00	1.4	3.1	-0.2	-4.3	96.9	S
48	27-Jan-00	14:16	C	I-127	344	32.7	59.9	0	0.1	102	9.84E+03	1.00E+06	9.62E+02	1.11E+05	0	0.00E+00	1.6	2.7	-0.3	-3.9	97.1	S
0	27-Jan-00	14:28	Center	I-127	344	32.7	59.9	0	0	10.3	1.52E+04	1.57E+05	0.00E+00	0.00E+00	0	0.00E+00	2.4	4.1	-1.3	-5.1	96	10.6
49	27-Jan-00	14:28	A	I-127	344	32.7	59.9	0	0.1	78.9	1.29E+04	1.02E+06	9.77E+02	1.04E+05	0	0.00E+00	1.7	3.5	-0.1	-5.1	96.3	S
50	27-Jan-00	14:30	B	I-127	344	32.7	59.9	0	0.1	77.3	1.30E+04	1.00E+06	9.63E+02	9.47E+04	0	0.00E+00	1.9	3.7	-0.4	-5.2	96.2	S
51	27-Jan-00	14:32	C	I-127	344	32.7	59.9	0	0.1	76.7	1.31E+04	1.00E+06	9.63E+02	1.12E+05	0	0.00E+00	2.1	3.6	-0.5	-5.2	96.2	S
52	27-Jan-00	14:44	A	I-127	344	32.7	59.9	0	0.1	110	9.09E+03	1.00E+06	9.62E+02	1.05E+05	0	0.00E+00	2.4	3.8	-0.7	-5.5	95.9	S
53	27-Jan-00	14:47	B	I-127	344	32.7	59.9	0	0.1	90.7	1.11E+04	1.01E+06	9.66E+02	9.56E+04	0	0.00E+00	2.6	3.4	-1.3	-4.7	96.3	S
54	27-Jan-00	14:48	C	I-127	344	32.7	59.9	0	0.1	56.3	1.79E+04	1.01E+06	9.65E+02	1.13E+05	0	0.00E+00	2.3	4.4	-0.7	-6	95.6	S
0	27-Jan-00	15:12	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.17E+04	1.21E+05	0.00E+00	0.00E+00	0	0.00E+00	-2	-0.3	5.5	-3.2	95.8	4.5
55	27-Jan-00	15:12	A	Au-197	346.4	28.2	82.1	0	0.1	87.2	1.21E+04	1.05E+06	1.38E+03	1.07E+05	0	0.00E+00	-2.9	0	4.8	-1.9	96.6	S
56	27-Jan-00	15:14	B	Au-197	346.4	28.2	82.1	0	0.1	87.3	1.15E+04	1.00E+06	1.32E+03	9.69E+04	0	0.00E+00	-3.4	0.1	4.5	-1.2	96.7	S
57	27-Jan-00	15:16	C	Au-197	346.4	28.2	82.1	0	0.1	97.3	1.03E+04	1.00E+06	1.32E+03	1.15E+05	0	0.00E+00	-3.1	-0.1	5.1	-1.9	96.3	S
58	27-Jan-00	15:26	A	Au-197	346.4	28.2	82.1	0	0.1	122	8.22E+03	1.00E+06	1.32E+03	1.08E+05	0	0.00E+00	-1.5	-2.5	3.2	0.8	97.3	S
59	27-Jan-00	15:29	B	Au-197	346.4	28.2	82.1	0	0.1	91.9	1.10E+04	1.01E+06	1.32E+03	9.83E+04	0	0.00E+00	-1.5	-2.2	3.3	0.4	97.4	S
60	27-Jan-00	15:30	C	Au-197	346.4	28.2	82.1	0	0.1	61.6	1.63E+04	1.01E+06	1.32E+03	1.16E+05	0	0.00E+00	-1.6	-2.4	3.4	0.6	97.3	S
61	27-Jan-00	15:41	A	Au-197	346.4	28.2	82.1	0	0.1	67.5	1.49E+04	1.00E+06	1.32E+03	1.09E+05	0	0.00E+00	-1.5	-1.9	4	-0.6	97	S
0	27-Jan-00	15:43	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.49E+04	1.54E+05	0.00E+00	0.00E+00	0	0.00E+00	-2.2	-1.4	3.4	0.2	97.5	5.6
62	27-Jan-00	15:43	B	Au-197	346.4	28.2	82.1	0	0.1	67.5	1.51E+04	1.02E+06	1.34E+03	9.96E+04	0	0.00E+00	-1.9	-1.1	3.5	-0.5	97.5	S
63	27-Jan-00	15:44	C	Au-197	346.4	28.2	82.1	0	0.1	71.4	1.41E+04	1.01E+06	1.32E+03	1.17E+05	0	0.00E+00	-1.8	-2.6	4.6	-0.1	96.5	S
64	27-Jan-00	15:55	A	Au-197	346.4	23.2	100	35	0.1	88.2	1.14E+04	1.00E+06	1.61E+03	1.11E+05	0	0.00E+00	-2.3	-1.3	3.7	-0.1	97.3	S
65	27-Jan-00	15:57	B	Au-197	346.4	23.2	100	35	0.1	33.2	1.13E+04	3.75E+05	6.01E+02	1.00E+05	1	2.67E-06	-1.6	-1.2	3.5	-0.7	97.5	S
66	27-Jan-00	15:59	C	Au-197	346.4	23.2	100	35	0.1	90.7	1.11E+04	1.00E+06	1.61E+03	1.19E+05	0	0.00E+00	-1.5	-1.3	3.8	-0.9	97.2	S
67	27-Jan-00	16:09	A	Au-197	346.4	23.2	100	35	0.1	92.7	1.08E+04	1.00E+06	1.61E+03	1.12E+05	0	0.00E+00	-1.7	-1.5	3.9	-0.6	97.2	S
68	27-Jan-00	16:11	B	Au-197	346.4	23.2	100	35	0.1	74	1.09E+04	8.05E+05	1.29E+03	1.02E+05	1	1.24E-06	-2	-0.7	4.3	-1.6	96.9	S
0	27-Jan-00	16:14	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.27E+04	1.32E+05	0.00E+00	0.00E+00	0	0.00E+00	-3.1	-0.7	4.1	-0.3	97.1	4.7
69	27-Jan-00	16:14	C	Au-197	346.4	23.2	100	35	0.1	97.8	1.02E+04	9.95E+05	1.59E+03	1.21E+05	0	0.00E+00	-1.6	-0.9	3.6	-1.1	97.4	S

International Rectifier Corp.
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Run	Date	Time	Device ID	Ion	Energy	Range	LET(Si)	Tilt	Roll	Time	Flux	Fluence	Dose	TotalDose	Upsets	CrossSec	Left	Top	Bottom	Right	Unif	Center
#					MeV	um	MeV*cm2 /mg	deg	deg	sec	#/cm2/sec	#/cm2	RAD(Si)	RAD(Si)	cm2	%	%	%	%	%	%	
70	27-Jan-00	16:23	A	Au-197	346.4	23.2	100	35	0.1	99.9	1.01E+04	1.00E+06	1.61E+03	1.14E+05	0	0.00E+00	-1.4	0	3.6	-2.2	97.2	S
71	27-Jan-00	16:26	B	Au-197	346.4	23.2	100	35	0.1	103	9.78E+03	1.00E+06	1.61E+03	1.03E+05	1	9.96E-07	-2	-0.6	3.7	-1	97.4	S
ICC/IDD Supply failed (over-current)																						
72	27-Jan-00	16:30	C	Au-197	346.4	23.2	100	35	0.1	109	9.22E+03	1.00E+06	1.61E+03	1.22E+05	0	0.00E+00	-2.1	-0.6	3.4	-0.7	97.6	S
0	27-Jan-00	16:45	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.06E+04	1.10E+05	0.00E+00	0.00E+00	0	0.00E+00	-2.7	-0.6	5	-1.7	96.5	7.1
73	27-Jan-00	16:46	A	Au-197	346.4	23.2	100	35	0.1	46.1	8.55E+03	3.94E+05	6.31E+02	1.15E+05	1	2.54E-06	-2	-0.2	4	-1.8	97.1	S
74	27-Jan-00	16:49	B	Au-197	346.4	23.2	100	35	0.1	80.8	1.24E+04	1.01E+06	1.61E+03	1.05E+05	0	0.00E+00	-2	0.9	3.7	-2.7	97	S
75	27-Jan-00	16:51	C	Au-197	346.4	23.2	100	35	0.1	70	1.44E+04	1.01E+06	1.61E+03	1.24E+05	0	0.00E+00	-1.7	0.2	4.3	-2.8	96.6	S
76	27-Jan-00	17:00	A	Au-197	346.4	23.2	100	35	0.1	73.8	1.36E+04	1.00E+06	1.61E+03	1.16E+05	1	9.96E-07	-2.4	0.8	4.3	-2.8	96.6	S
77	27-Jan-00	17:03	B	Au-197	346.4	23.2	100	35	0.1	77.8	1.29E+04	1.00E+06	1.61E+03	1.06E+05	0	0.00E+00	-1.9	0.8	4.3	-3.2	96.5	S
78	27-Jan-00	17:06	C	Au-197	346.4	23.2	100	35	0.1	81.9	1.23E+04	1.01E+06	1.61E+03	1.25E+05	0	0.00E+00	-2.1	1.3	4.6	-3.8	96.1	S
Run#77&78 had Hi-Output went Hi-State briefly and back down																						
79	27-Jan-00	17:15	A	Au-197	346.4	23.2	100	35	0.1	87.9	1.14E+04	1.00E+06	1.61E+03	1.18E+05	0	0.00E+00	-2.4	1.8	4.7	-4.1	96	S
0	27-Jan-00	17:18	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.38E+04	1.43E+05	0.00E+00	0.00E+00	0	0.00E+00	-1.5	-1.2	4.1	-1.4	97	6.6
80	27-Jan-00	17:18	B	Au-197	346.4	23.2	100	35	0.1	87.8	1.14E+04	1.00E+06	1.60E+03	1.08E+05	0	0.00E+00	-1.6	0.6	3.8	-2.8	96.9	S
81	27-Jan-00	17:20	C	Au-197	346.4	23.2	100	35	0.1	89.6	1.12E+04	1.00E+06	1.61E+03	1.27E+05	0	0.00E+00	-1.9	0.4	4.1	-2.6	96.9	S
82	27-Jan-00	17:42	A	Au-197	346.4	23.2	100	35	0.1	92.2	1.09E+04	1.00E+06	1.61E+03	1.20E+05	0	0.00E+00	-2.2	-0.2	4.2	-1.9	96.9	S
83	27-Jan-00	17:44	B	Au-197	346.4	23.2	100	35	0.1	91.6	1.10E+04	1.00E+06	1.61E+03	1.10E+05	0	0.00E+00	-2.2	0.7	4.1	-2.7	96.8	S
Soft failure																						
84	27-Jan-00	17:46	C	Au-197	346.4	23.2	100	35	0.1	93.1	1.08E+04	1.00E+06	1.61E+03	1.29E+05	0	0.00E+00	-2	0.1	4.3	-2.4	96.8	S
Soft Error																						
0	27-Jan-00	17:56	Center	Au-197	346.4	28.2	82.1	0	0	10.3	8.78E+02	9.06E+03	0.00E+00	0.00E+00	0	0.00E+00	-6.6	5.6	4.8	-3.8	94.2	6.5
85	27-Jan-00	17:56	A	Au-197	346.4	23.2	100	35	0.1	94.6	1.06E+04	1.00E+06	1.61E+03	1.21E+05	0	0.00E+00	-2.2	0.6	4.1	-2.6	96.8	S
86	27-Jan-00	17:58	B	Au-197	346.4	23.2	100	35	0.1	39.6	1.05E+04	4.15E+05	6.65E+02	1.10E+05	1	2.41E-06	-2.5	0.3	4.5	-2.3	96.6	S
87	27-Jan-00	18:01	C	Au-197	346.4	23.2	100	35	0.1	96.6	1.04E+04	1.00E+06	1.61E+03	1.30E+05	0	0.00E+00	-2.8	1.2	4.5	-2.8	96.5	S
88	27-Jan-00	18:10	A	Au-197	346.4	23.2	100	35	0.1	97.9	1.02E+04	1.00E+06	1.61E+03	1.23E+05	0	0.00E+00	-1.9	0.2	3.9	-2.1	97.1	S
89	27-Jan-00	18:12	B	Au-197	346.4	23.2	100	35	0.1	96.3	1.04E+04	1.00E+06	1.61E+03	1.12E+05	0	0.00E+00	-2.1	-0.1	4.5	-2.3	96.7	S
90	27-Jan-00	18:16	C	Au-197	346.4	28.2	82.1	0	0.1	78.2	1.29E+04	1.01E+06	1.32E+03	1.31E+05	0	0.00E+00	-2.1	0.7	4.7	-3.4	96.2	S
91	27-Jan-00	18:25	A	Au-197	346.4	28.2	82.1	0	0.1	78.2	1.29E+04	1.01E+06	1.32E+03	1.24E+05	0	0.00E+00	-1.9	0.1	4.4	-2.6	96.7	S
0	27-Jan-00	18:29	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.32E+04	1.36E+05	0.00E+00	0.00E+00	0	0.00E+00	-2.1	1.2	4.7	-3.8	96.1	6.3
92	27-Jan-00	18:29	B	Au-197	346.4	28.2	82.1	0	0.1	77.2	1.30E+04	1.00E+06	1.32E+03	1.13E+05	0	0.00E+00	-2.2	0.6	4.3	-2.7	96.7	S
93	27-Jan-00	18:31	C	Au-197	346.4	28.2	82.1	0	0.1	78.4	1.28E+04	1.00E+06	1.32E+03	1.33E+05	0	0.00E+00	-1.4	0.1	4.5	-3.2	96.4	S
94	27-Jan-00	18:40	A	Au-197	346.4	28.2	82.1	0	0.1	75.4	1.33E+04	1.01E+06	1.32E+03	1.25E+05	0	0.00E+00	-1.9	0	4.2	-2.3	96.8	S
95	27-Jan-00	18:42	B	Au-197	346.4	28.2	82.1	0	0.1	75.2	1.34E+04	1.00E+06	1.32E+03	1.14E+05	0	0.00E+00	-1.8	-0.2	4	-2	97	S
96	27-Jan-00	18:44	C	Au-197	346.4	28.2	82.1	0	0.1	75.9	1.33E+04	1.01E+06	1.32E+03	1.34E+05	0	0.00E+00	-1.5	-0.2	4.2	-2.6	96.7	S
97	27-Jan-00	18:56	A	Au-197	346.4	28.2	82.1	0	0.1	77.2	1.30E+04	1.01E+06	1.32E+03	1.27E+05	0	0.00E+00	-2.1	-0.2	4.4	-2.1	96.8	S
98	27-Jan-00	18:58	B	Au-197	346.4	28.2	82.1	0	0.1	77.1	1.30E+04	1.00E+06	1.32E+03	1.16E+05	0	0.00E+00	-1.4	-1.1	3.9	-1.4	97.1	S
0	27-Jan-00	19:00	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.27E+04	1.32E+05	0.00E+00	0.00E+00	0	0.00E+00	-1.1	-0.8	4.2	-2.3	96.8	5.5
99	27-Jan-00	19:00	C	Au-197	346.4	28.2	82.1	0	0.1	78.2	1.28E+04	9.97E+05	1.31E+03	1.35E+05	0	0.00E+00	-1.8	-0.7	3.5	-1.1	97.5	S
RIC Dynamic Testing																						
0	27-Jan-00	20:49	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.47E+04	1.52E+05	0.00E+00	0.00E+00	0	0.00E+00	-3.2	-0.7	3.6	0.3	97.2	5.5
100	27-Jan-00	20:52	ric7113	Au-197	314.2	26.5	80.4	0	0.1	67.3	1.49E+04	1.01E+06	1.30E+03	1.62E+05	28	2.79E-05	-2.3	0.6	3.9	-2.2	97	S

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Run	Date	Time	Device ID	Ion	Energy	Range	LET(Si)	Tilt	Roll	Time	Flux	Fluence	Dose	TotalDose	Upsets	CrossSec	Left	Top	Bottom	Right	Unif	Center
#					MeV	um	MeV*cm2 /mg	deg	deg	sec	#/cm2/sec	#/cm2	RAD(Si)	RAD(Si)	cm2	%	%	%	%	%	%	
101	27-Jan-00	21:01	ric7113	Au-197	314.2	26.5	80.4	0	0.1	68.8	1.46E+04	1.01E+06	1.29E+03	1.63E+05	27	2.69E-05	-2.5	1.1	4.4	-3	96.5	S
102	27-Jan-00	21:09	ric7113	Au-197	314.2	26.5	80.4	0	0.1	68.9	1.46E+04	1.01E+06	1.29E+03	1.64E+05	18	1.79E-05	-2.6	0.2	4.4	-2	96.8	S
103	27-Jan-00	21:17	ric7113	Au-197	314.2	26.5	80.4	0	0.1	69.6	1.44E+04	1.00E+06	1.29E+03	1.65E+05	14	1.39E-05	-1.5	0	4.6	-3.1	96.4	S
0	27-Jan-00	21:24	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.50E+04	1.55E+05	0.00E+00	0.00E+00	0	0.00E+00	-1.6	0.9	4	-3.3	96.7	6
104	27-Jan-00	21:24	ric7113	Au-197	314.2	26.5	80.4	0	0.1	68	1.49E+04	1.01E+06	1.30E+03	1.67E+05	22	2.18E-05	-2.7	0.2	4.1	-1.6	97	S
105	27-Jan-00	21:31	ric7113	Au-197	314.2	26.5	80.4	0	0.1	68.9	1.46E+04	1.01E+06	1.30E+03	1.68E+05	19	1.89E-05	-1.8	0.1	4.1	-2.5	96.9	S
106	27-Jan-00	21:39	ric7113	Au-197	306.3	20.9	100	37	0.1	87.4	1.15E+04	1.00E+06	1.61E+03	1.70E+05	26	2.59E-05	-1.8	0.5	4.2	-2.8	96.7	S
107	27-Jan-00	21:46	ric7113	Au-197	306.3	20.9	100	37	0.1	85.8	1.17E+04	1.00E+06	1.61E+03	1.71E+05	30	2.99E-05	-2	0.5	4.7	-3.1	96.4	S
0	27-Jan-00	21:55	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.47E+04	1.52E+05	0.00E+00	0.00E+00	0	0.00E+00	-1.1	0	4.3	-3.2	96.5	7.2
108	27-Jan-00	21:55	ric7113	Au-197	306.3	20.9	100	37	0.1	86.5	1.18E+04	1.02E+06	1.63E+03	1.73E+05	29	2.86E-05	-2.3	1.5	4.3	-3.6	96.3	S
109	27-Jan-00	22:10	ric7113	Au-197	306.3	20.9	100	37	0.1	86.8	1.16E+04	1.01E+06	1.61E+03	1.74E+05	34	3.38E-05	-1.7	0.8	4.7	-3.7	96.2	S
Device of run # 109 failed with IBS of 4.0mA then 60mA at re-power.																						
110	27-Jan-00	22:19	ric7113	Au-197	306.3	20.9	100	37	0.1	86.9	1.16E+04	1.00E+06	1.61E+03	1.76E+05	30	2.99E-05	-2.3	1.2	4.5	-3.4	96.3	S
0	27-Jan-00	22:26	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.41E+04	1.45E+05	0.00E+00	0.00E+00	0	0.00E+00	-1.8	0.2	3.7	-2.1	97.2	6.7
111	27-Jan-00	22:26	ric7113	Au-197	306.3	20.9	100	37	0.1	88.4	1.13E+04	9.98E+05	1.60E+03	1.78E+05	23	2.31E-05	-2.3	1	4.7	-3.4	96.2	S
112	27-Jan-00	22:33	ric7113	Au-197	306.3	20.9	100	37	0.1	89.3	1.12E+04	1.00E+06	1.61E+03	1.79E+05	38	3.79E-05	-2.4	1.6	5	-4.3	95.7	S
113	27-Jan-00	22:43	ric7113	Au-197	306.3	20.9	100	37	0.1	91.1	1.10E+04	1.00E+06	1.61E+03	1.81E+05	38	3.79E-05	-1.9	1.3	4.7	-4.1	96	S
114	27-Jan-00	22:51	ric7113	Au-197	306.3	20.9	100	37	0.1	89.8	1.12E+04	1.00E+06	1.61E+03	1.82E+05	32	3.19E-05	-1.8	1.5	4.7	-4.4	95.9	S
0	27-Jan-00	22:59	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.41E+04	1.46E+05	0.00E+00	0.00E+00	0	0.00E+00	-2.3	2.3	4.5	-4.5	95.8	5.3
115	27-Jan-00	22:59	ric7113	Au-197	306.3	20.9	100	37	0.1	89	1.11E+04	9.92E+05	1.59E+03	1.84E+05	33	3.33E-05	-2.1	1.8	4.8	-4.5	95.8	S
116	27-Jan-00	23:06	ric7113	Au-197	306.3	20.9	100	37	0.1	90.5	1.11E+04	1.00E+06	1.61E+03	1.86E+05	16	1.59E-05	-2.2	1.9	4.9	-4.5	95.7	S
0	27-Jan-00	23:29	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.29E+04	1.33E+05	0.00E+00	0.00E+00	0	0.00E+00	-2	3.7	4.2	-5.9	95.2	5
117	27-Jan-00	23:29	ric7113	Au-197	306.3	20.9	100	37	0.1	97.7	1.02E+04	1.00E+06	1.60E+03	1.89E+05	18	1.80E-05	-2.4	2.6	4.3	-4.5	95.9	S
118	27-Jan-00	23:37	ric7113	Au-197	306.3	20.9	100	37	0.1	99	1.02E+04	1.00E+06	1.61E+03	1.90E+05	27	2.69E-05	-1.9	2.8	4.6	-5.4	95.5	S
119	27-Jan-00	23:47	ric7113	Au-197	314.2	26.5	80.4	0	0.1	78.8	1.28E+04	1.01E+06	1.29E+03	1.92E+05	24	2.39E-05	-2.1	2.6	4.9	-5.4	95.3	S
120	27-Jan-00	23:54	ric7113	Au-197	314.2	26.5	80.4	0	0.1	80.4	1.25E+04	1.00E+06	1.29E+03	1.93E+05	19	1.90E-05	-2	2.9	4.5	-5.5	95.4	S
0	28-Jan-00	0:01	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.25E+04	1.29E+05	0.00E+00	0.00E+00	0	0.00E+00	-1.6	3.6	4.9	-6.9	94.6	6.2
121	28-Jan-00	0:01	ric7113	Au-197	314.2	26.5	80.4	0	0.1	83.1	1.22E+04	1.02E+06	1.31E+03	1.94E+05	18	1.77E-05	-2.7	3	5.3	-5.6	95	S
122	28-Jan-00	0:08	ric7113	Au-197	314.2	26.5	80.4	0	0.1	78.9	1.27E+04	1.01E+06	1.29E+03	1.96E+05	24	2.39E-05	-2.2	2.8	4.9	-5.5	95.2	S
123	28-Jan-00	0:16	ric7113	Au-197	314.2	26.5	80.4	0	0.1	92.8	1.08E+04	1.00E+06	1.29E+03	1.97E+05	16	1.59E-05	-2.3	2.6	5.2	-5.5	95.1	S
124	28-Jan-00	0:23	ric7113	Au-197	314.2	26.5	80.4	0	0.1	87.9	1.14E+04	1.00E+06	1.29E+03	1.98E+05	16	1.60E-05	-1.9	2	4.8	-4.9	95.6	S
0	28-Jan-00	0:33	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.26E+04	1.30E+05	0.00E+00	0.00E+00	0	0.00E+00	-2.5	3.8	4.4	-5.7	95.2	4.6
125	28-Jan-00	0:34	ric7113	Au-197	314.2	26.5	80.4	0	0.1	80.5	1.23E+04	9.89E+05	1.27E+03	2.00E+05	22	2.22E-05	-2.3	3.1	4.8	-5.6	95.2	S
126	28-Jan-00	0:40	ric7113	Au-197	314.2	26.5	80.4	0	0.1	81.6	1.23E+04	1.00E+06	1.29E+03	2.01E+05	25	2.49E-05	-2.5	3.3	5.1	-6	94.9	S
Device failed with IBS of 2.240mA jumped to 3.948mA and failed to function when re-powered.																						
127	28-Jan-00	0:48	ric7113	Au-197	314.2	26.5	80.4	0	0.1	81.7	1.23E+04	1.00E+06	1.29E+03	2.02E+05	23	2.29E-05	-3	3.6	4.7	-5.3	95.2	S
128	28-Jan-00	0:55	ric7113	Au-197	314.2	26.5	80.4	0	0.1	81.5	1.23E+04	1.00E+06	1.29E+03	2.03E+05	17	1.69E-05	-2.3	2.2	5	-4.9	95.5	S
129	28-Jan-00	1:03	ric7113	Au-197	314.2	26.5	80.4	0	0.1	80.6	1.25E+04	1.00E+06	1.29E+03	2.05E+05	26	2.59E-05	-2.5	3.1	4.7	-5.3	95.4	S
0	28-Jan-00	1:10	Center	Au-197	346.4	28.2	82.1	0	0	10.3	1.21E+04	1.25E+05	0.00E+00	0.00E+00	0	0.00E+00	-2.6	3.6	4.5	-5.5	95.3	5.8
130	28-Jan-00	1:11	ric7113	Au-197	314.2	26.5	80.4	0	0.1	81.8	1.24E+04	1.02E+06	1.31E+03	2.06E+05	21	2.07E-05	-3	3	5.4	-5.4	95	S
131	28-Jan-00	1:24	ric7113	Au-197	314.2	26.5	80.4	0	0.1	80.6	1.24E+04	1.00E+06	1.29E+03	2.07E+05	20	1.99E-05	-2.2	2	4.7	-4.5	95.8	S
132	28-Jan-00	1:31	ric7113	Au-197	314.2	26.5	80.4	0	0.1	80.3	1.25E+04	1.00E+06	1.29E+03	2.09E+05	19	1.89E-05	-2.3	2	5.2	-4.9	95.5	S

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Run	Date	Time	Device ID	Ion	Energy	Range	LET(Si)	Tilt	Roll	Time	Flux	Fluence	Dose	TotalDose	Upsets	CrossSec	Left	Top	Bottom	Right	Unif	Center
#					MeV	um	MeV*cm2 /mg	deg	deg	sec	#/cm2/sec	#/cm2	RAD(Si)	RAD(Si)	cm2	%	%	%	%	%	%	
0	28-Jan-00	2:02	Center	I-127	343	32.6	59.8	0	0	10.3	1.42E+04	1.47E+05	0.00E+00	0.00E+00	0	0.00E+00	-0.9	0.9	0.6	-0.6	99.1	11.8
133	28-Jan-00	2:02	ric7113	I-127	317.5	30.8	59.7	0	0.1	126	8.95E+03	1.12E+06	1.07E+03	2.10E+05	27	2.40E-05	-1.3	2.4	0.8	-1.9	98	S
134	28-Jan-00	2:09	ric7113	I-127	317.5	30.8	59.7	0	0.1	74.7	1.35E+04	1.01E+06	9.61E+02	2.11E+05	26	2.59E-05	-1.1	2.1	0.5	-1.5	98.4	S
135	28-Jan-00	2:15	ric7113	I-127	317.5	30.8	59.7	0	0.1	74.2	1.35E+04	1.00E+06	9.60E+02	2.12E+05	19	1.89E-05	-0.8	2.1	-0.5	-0.8	98.4	S
136	28-Jan-00	2:26	ric7113	I-127	317.5	30.8	59.7	0	0.1	78.1	1.29E+04	1.00E+06	9.61E+02	2.13E+05	26	2.59E-05	-0.4	1.8	-0.3	-1	98.7	S
137	28-Jan-00	2:32	ric7113	I-127	317.5	30.8	59.7	0	0.1	80.1	1.25E+04	1.00E+06	9.60E+02	2.14E+05	22	2.19E-05	0.2	1.1	-0.6	-0.7	99.1	S
0	28-Jan-00	2:39	Center	I-127	343	32.6	59.8	0	0	10.3	1.16E+04	1.20E+05	0.00E+00	0.00E+00	0	0.00E+00	0.8	0.7	-1.3	-0.2	99	13.1
138	28-Jan-00	2:39	ric7113	I-127	317.5	30.8	59.7	0	0.1	89	1.14E+04	1.02E+06	9.72E+02	2.14E+05	25	2.46E-05	0.3	1.2	-0.6	-0.9	99	S
139	28-Jan-00	2:46	ric7113	I-127	317.5	30.8	59.7	0	0.1	97.9	1.03E+04	1.00E+06	9.59E+02	2.15E+05	31	3.09E-05	0.9	1.2	-1.2	-0.9	98.8	S
140	28-Jan-00	2:53	ric7113	I-127	317.5	30.8	59.7	0	0.1	81.4	1.23E+04	1.00E+06	9.60E+02	2.16E+05	26	2.59E-05	1	0.9	-1.6	-0.3	98.8	S
141	28-Jan-00	3:00	ric7113	I-127	317.5	30.8	59.7	0	0.1	83.6	1.20E+04	1.00E+06	9.60E+02	2.17E+05	18	1.79E-05	1.3	0.3	-1.2	-0.4	98.9	S
142	28-Jan-00	3:06	ric7113	I-127	317.5	30.8	59.7	0	0.1	84.9	1.18E+04	1.00E+06	9.60E+02	2.18E+05	21	2.09E-05	1.5	0.4	-1.6	-0.3	98.7	S
0	28-Jan-00	3:14	Center	I-127	343	32.6	59.8	0	0	10.3	1.34E+04	1.38E+05	0.00E+00	0.00E+00	0	0.00E+00	1.6	-7.2	-4	9.6	93	14.2
143	28-Jan-00	3:14	ric7113	I-127	317.5	30.8	59.7	0	0.1	82.7	1.23E+04	1.02E+06	9.71E+02	2.19E+05	23	2.27E-05	2	-7.1	-3.9	9	93.3	S
144	28-Jan-00	3:20	ric7113	I-127	317.5	30.8	59.7	0	0.1	86	1.17E+04	1.00E+06	9.60E+02	2.20E+05	24	2.39E-05	1.7	-6.8	-4.2	9.3	93.2	S
145	28-Jan-00	3:28	ric7113	I-127	317.5	30.8	59.7	0	0.1	96.8	1.04E+04	1.00E+06	9.60E+02	2.21E+05	22	2.19E-05	2.3	-7.1	-4.4	9.2	93.1	S
146	28-Jan-00	3:35	ric7113	I-127	317.5	30.8	59.7	0	0.1	97.7	1.03E+04	1.00E+06	9.60E+02	2.22E+05	30	2.99E-05	2	-6.6	-3.9	8.5	93.6	S
147	28-Jan-00	3:42	ric7113	I-127	317.5	30.8	59.7	0	0.1	99.3	1.01E+04	1.00E+06	9.60E+02	2.23E+05	26	2.59E-05	1.5	-6.2	-4.3	8.9	93.5	S
0	28-Jan-00	3:50	Center	I-127	343	32.6	59.8	0	0	10.3	9.90E+03	1.02E+05	0.00E+00	0.00E+00	0	0.00E+00	1	-4.9	-3.6	7.5	94.5	12.2
148	28-Jan-00	3:50	ric7113	I-127	317.5	30.8	59.7	0	0.1	104	9.48E+03	9.85E+05	9.42E+02	2.24E+05	27	2.74E-05	1.8	-6.1	-3.9	8.2	93.9	S
149	28-Jan-00	3:57	ric7113	I-127	317.5	30.8	59.7	0	0.1	96.8	1.04E+04	1.00E+06	9.59E+02	2.25E+05	26	2.59E-05	2.1	-6.1	-3.8	7.8	94	S
150	28-Jan-00	4:03	ric7113	I-127	317.5	30.8	59.7	0	0.1	95.4	1.05E+04	1.00E+06	9.59E+02	2.26E+05	22	2.19E-05	2.4	-5.9	-3.6	7.2	94.4	S
151	28-Jan-00	4:11	ric7113	I-127	317.5	30.8	59.7	0	0.1	105	9.56E+03	1.00E+06	9.59E+02	2.27E+05	27	2.69E-05	2.6	-5.6	-4	7.1	94.4	S
0	28-Jan-00	4:47	Center	Br-81	283	36.5	37.4	0	0	10.3	1.53E+04	1.58E+05	0.00E+00	0.00E+00	0	0.00E+00	-1.7	2.2	-1.6	1.1	97.3	11
152	28-Jan-00	4:47	ric7113	Br-81	266.3	34.6	37.7	0	0.1	73.4	1.52E+04	1.12E+06	6.73E+02	2.28E+05	22	1.97E-05	-1.6	3.5	-1.3	-0.7	97.2	S
153	28-Jan-00	5:06	ric7113	Br-81	266.3	34.6	37.7	0	0.1	95.4	1.05E+04	1.00E+06	6.06E+02	2.28E+05	5	4.98E-06	-0.7	0	-0.5	1.2	98.9	S
154	28-Jan-00	5:13	ric7113	Br-81	266.3	34.6	37.7	0	0.1	106	9.48E+03	1.00E+06	6.06E+02	2.29E+05	6	5.98E-06	-2.6	-0.7	1.8	1.5	97.9	S
0	28-Jan-00	5:21	Center	Br-81	283	36.5	37.4	0	0	10.3	9.12E+03	9.42E+04	0.00E+00	0.00E+00	0	0.00E+00	-3.8	-0.8	2.8	1.8	97.1	10.7
155	28-Jan-00	5:21	ric7113	Br-81	266.3	34.6	37.7	0	0.1	112	8.93E+03	1.00E+06	6.04E+02	2.29E+05	7	7.00E-06	-3.8	-0.2	2.7	1.3	97.2	S
156	28-Jan-00	5:29	ric7113	Br-81	266.3	34.6	37.7	0	0.1	118	8.51E+03	1.00E+06	6.06E+02	2.30E+05	3	2.99E-06	-3.9	-0.3	3	1.2	97.1	S
157	28-Jan-00	5:36	ric7113	Br-81	266.3	34.6	37.7	0	0.1	124	8.08E+03	1.00E+06	6.05E+02	2.31E+05	4	3.99E-06	-4.4	-0.5	3.9	1	96.7	S

Appendix C

Electrical Data

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	1	2	3	4	5	6	7	8	9	10
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.8	2.6	1.8	2.3	1.9	2.1	1.7	2.4	2.2	2.4
IQDD0	0 to 150 uA	0.480	0.491	0.384	0.387	0.512	0.336	0.498	0.449	0.426	0.488
IQCC0	0 to 1000 uA	96.8	95.5	96.0	96.7	95.4	96.1	96.3	95.0	95.9	95.8
IQBS0	0 to 230 uA	77.9	78.6	78.7	78.1	78.3	78.6	78.8	78.8	78.1	78.1
IHIN0	0 to 1 uA	0.031	0.028	0.026	0.026	0.027	0.023	0.026	0.027	0.027	0.028
ILIN0	0 to 1 uA	0.031	0.027	0.025	0.025	0.028	0.023	0.027	0.026	0.026	0.027
ISD0	0 to 1 uA	0.026	0.024	0.024	0.023	0.027	0.028	0.027	0.022	0.023	0.024
IQDD1	0 to 150 uA	0.531	0.524	0.500	0.492	0.349	0.451	0.337	0.499	0.508	0.517
IQCC1	0 to 1000 uA	105.9	104.0	104.9	105.2	104.1	104.9	105.8	104.0	104.9	104.6
IQBS1	0 to 230 uA	60.4	60.9	61.3	60.6	60.9	61.1	61.5	60.9	60.0	60.7
IHIN1	0 to 40 uA	25.5	25.3	25.4	25.3	25.2	25.3	25.3	25.2	25.4	25.1
ILIN1	0 to 40 uA	26.0	25.5	25.6	25.7	25.7	25.8	25.6	25.5	25.8	25.6
ISD1	0 to 40 uA	25.5	25.2	25.2	25.3	25.2	25.3	25.3	25.1	25.5	25.1
ILO+	2 to 5 A	2.9	2.8	2.9	2.9	2.9	2.8	2.9	2.9	2.9	3.0
ILO-	2 to 5 A	3.3	3.2	3.3	3.2	3.3	3.3	3.3	3.4	3.3	3.4
IHO+	2 to 5 A	2.7	2.7	2.7	2.6	2.6	2.6	2.7	2.8	2.6	2.7
IHO-	2 to 5 A	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.5
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.453	0.451	0.457	0.455	0.453	0.456	0.451	0.445	0.457	0.447
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.430	0.430	0.435	0.432	0.430	0.434	0.428	0.422	0.434	0.422
Vth+HS	6 to 9.5 V	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	6.9	7.0	6.9	6.9	7.0	6.9	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.3	8.3	8.3	8.3	8.3	8.3	8.4	8.4	8.4	8.4
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	6.9	6.9	6.9	7.0	7.0	6.9	7.0
Vth+SD	6 to 9.5 V	8.3	8.4	8.3	8.4	8.3	8.3	8.4	8.4	8.4	8.4
TON_LS	50 to 150 ns	120.6	120.2	115.9	122.2	119.4	116.9	118.5	119.6	120.9	120.8
TOFF_LS	50 to 125 ns	115.5	117.1	112.6	116.7	116.1	113.5	115.7	112.1	116.9	114.2
TR_LS	2 to 35 ns	15.1	15.2	15.9	14.9	15.3	15.7	15.5	13.4	15.7	13.0
TF_LS	2 to 25 ns	6.7	7.0	7.0	7.0	7.2	7.1	6.9	6.8	6.7	6.9
TON_HS	50 to 150 ns	115.0	114.3	112.3	115.6	114.0	112.3	113.4	111.7	115.1	111.9
TOFF_HS	50 to 125 ns	104.9	105.0	102.6	104.9	104.4	102.7	104.2	102.1	105.7	102.5
TR_HS	2 to 35 ns	18.7	18.9	18.2	18.6	18.7	18.2	18.7	17.6	18.8	18.1
TF_HS	2 to 25 ns	14.0	13.4	13.9	13.7	13.5	14.1	13.3	13.6	14.0	12.8
TSD_LS	50 to 140 ns	110.8	111.9	107.6	112.4	110.9	108.8	111.1	107.6	112.4	109.8
TSD_HS	50 to 140 ns	109.8	109.7	107.5	110.6	109.4	107.5	108.5	107.0	110.4	107.3
MT_ON	0 to 20 ns	5.5	5.9	3.6	6.6	5.3	4.6	5.1	7.9	5.8	8.8
MT_OFF	0 to 20 ns	10.7	12.1	10.0	11.8	11.7	10.8	11.6	10.0	11.2	11.8
VCCUV+pa	7.4 to 9.6 V	8.4	8.5	8.5	8.5	8.5	8.4	8.5	8.4	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.1	8.3	8.3	8.2	8.3	8.2	8.3	8.3	8.2
IQDD1	0 to 30 uA	0.489	0.507	0.423	0.479	0.454	0.351	0.468	0.482	0.463	0.502
IQCC1	0 to 340 uA	105.7	103.9	104.9	105.2	104.1	104.8	105.6	103.8	104.6	104.3
IQBS1	0 to 230 uA	60.9	60.9	61.3	60.6	60.6	61.2	61.4	61.0	60.4	60.4
D_IQDD1	0 to 3 uA	0.041	0.017	0.077	0.013	0.105	0.101	0.131	0.017	0.044	0.015
D_IQCC1	0 to 30 uA	0.188	0.063	0.063	0	0	0.125	0.188	0.188	0.250	0.313
D_IQBS1	0 to 20 uA	0.500	0.063	0.063	0.063	0.375	0.125	0.125	0.063	0.375	0.250

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	11	12	13	14	15	16	17	18	19	20
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.6	2.2	2.2	2.4	1.7	2.2	1.6	1.8	1.9	2.2
IQDD0	0 to 150 uA	0.524	0.481	0.516	0.446	0.498	0.394	0.351	0.481	0.342	0.328
IQCC0	0 to 1000 uA	101.4	95.6	95.5	95.9	116.1	95.4	96.6	95.6	95.1	95.5
IQBS0	0 to 230 uA	78.4	79.0	77.6	77.5	78.2	76.1	78.5	78.6	77.9	79.7
IHIN0	0 to 1 uA	0.028	0.025	0.029	0.024	0.026	0.026	0.023	0.027	0.022	0.022
ILIN0	0 to 1 uA	0.028	0.026	0.028	0.025	0.027	0.025	0.023	0.027	0.022	0.022
ISD0	0 to 1 uA	0.027	0.028	0.026	0.028	0.028	0.022	0.029	0.026	0.027	0.028
IQDD1	0 to 150 uA	0.381	0.347	0.512	0.344	8.0	0.462	0.408	0.416	0.407	0.439
IQCC1	0 to 1000 uA	105.8	104.4	104.2	107.1	122.8	103.3	105.0	104.2	104.3	104.8
IQBS1	0 to 230 uA	60.7	61.8	59.6	60.3	59.8	58.9	61.2	60.6	60.5	62.9
IHIN1	0 to 40 uA	25.6	25.0	25.0	25.4	26.1	25.2	25.2	25.4	25.3	25.0
ILIN1	0 to 40 uA	26.0	25.5	25.4	25.5	26.6	25.3	25.8	25.9	25.7	25.3
ISD1	0 to 40 uA	25.6	25.1	25.1	25.2	26.2	25.0	25.2	25.5	25.4	25.1
ILO+	2 to 5 A	2.8	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3.1
ILO-	2 to 5 A	3.2	3.3	3.3	3.2	3.2	3.2	3.3	3.3	3.2	3.4
IHO+	2 to 5 A	2.6	2.7	2.7	2.6	2.5	2.7	2.6	2.6	2.6	2.8
IHO-	2 to 5 A	3.4	3.5	3.5	3.5	3.4	3.5	3.4	3.5	3.5	3.6
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.455	0.445	0.452	0.457	0.460	0.459	0.461	0.445	0.456	0.439
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.432	0.421	0.430	0.435	0.438	0.438	0.435	0.422	0.431	0.417
Vth+HS	6 to 9.5 V	8.4	8.4	8.4	8.4	8.4	8.4	8.3	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	6.9	7.0	7.0	6.9	6.9	6.9	6.9	7.0	6.9	7.0
Vth+LS	6 to 9.5 V	8.3	8.4	8.3	8.4	8.3	8.3	8.3	8.4	8.4	8.4
Vth-LS	6 to 9.5 V	6.9	7.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.0
Vth+SD	6 to 9.5 V	8.4	8.4	8.3	8.4	8.3	8.3	8.3	8.4	8.4	8.4
TON_LS	50 to 150 ns	121.2	117.5	121.1	122.9	124.5	123.0	118.3	121.8	120.7	112.8
TOFF_LS	50 to 125 ns	116.3	114.6	118.2	117.1	119.5	117.8	115.3	118.5	115.4	111.4
TR_LS	2 to 35 ns	15.1	14.8	15.3	15.3	15.2	15.3	15.0	15.2	15.4	15.0
TF_LS	2 to 25 ns	7.0	6.8	6.7	7.3	7.1	7.0	6.9	7.0	6.9	6.7
TON_HS	50 to 150 ns	114.9	111.8	114.8	115.9	118.9	118.0	113.4	115.6	115.1	107.9
TOFF_HS	50 to 125 ns	104.8	102.4	105.0	105.6	108.3	106.8	104.1	106.2	105.3	99.2
TR_HS	2 to 35 ns	19.0	18.2	18.6	18.7	18.9	18.6	18.8	18.6	18.8	18.3
TF_HS	2 to 25 ns	13.6	13.0	13.6	13.9	13.9	14.2	13.1	13.6	13.9	13.1
TSD_LS	50 to 140 ns	111.6	108.9	112.8	112.6	114.5	114.7	110.0	113.9	112.5	106.9
TSD_HS	50 to 140 ns	109.6	106.4	110.2	111.0	115.1	113.1	108.5	111.1	109.8	103.1
MT_ON	0 to 20 ns	6.3	5.7	6.3	7.0	5.6	5.0	4.8	6.1	5.6	4.9
MT_OFF	0 to 20 ns	11.5	12.2	13.3	11.5	11.2	11	11.2	12.3	10.1	12.2
VCCUV+pa	7.4 to 9.6 V	8.4	8.4	8.4	8.5	8.4	8.5	8.4	8.5	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.6	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.2	8.3	8.2	8.2	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.501	0.432	0.534	0.379	7.8	0.426	0.344	0.501	0.261	0.354
IQCC1	0 to 340 uA	105.8	104.4	104.2	107.0	122.6	103.0	105.1	104.3	104.5	105.3
IQBS1	0 to 230 uA	60.6	61.6	59.8	60.2	59.6	59.1	61.1	60.8	60.1	62.6
D_IQDD1	0 to 3 uA	0.120	0.085	0.022	0.034	0.191	0.036	0.064	0.086	0.146	0.086
D_IQCC1	0 to 30 uA	0	0	0	0.125	0.125	0.250	0.125	0.125	0.250	0.438
D_IQBS1	0 to 20 uA	0.125	0.125	0.250	0.063	0.188	0.125	0.063	0.125	0.375	0.250

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	21	22	23	24	25	26	27	28	29	30
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.1	1.8	2.0	2.3	2.2	2.0	2.1	2.4	2.0	2.1
IQDD0	0 to 150 uA	0.529	0.409	0.385	0.379	0.453	0.498	0.397	0.358	0.499	0.349
IQCC0	0 to 1000 uA	112.1	96.2	105.4	95.9	97.3	96.8	92.4	93.5	92.9	93.8
IQBS0	0 to 230 uA	79.0	77.8	74.9	77.8	74.9	74.9	73.0	74.2	73.9	74.8
IHIN0	0 to 1 uA	0.030	0.027	0.026	0.026	0.028	0.025	0.022	0.025	0.025	0.023
ILIN0	0 to 1 uA	0.030	0.026	0.025	0.025	0.027	0.026	0.023	0.024	0.026	0.022
ISD0	0 to 1 uA	0.029	0.023	0.024	0.025	0.023	0.028	0.028	0.026	0.028	0.028
IQDD1	0 to 150 uA	0.370	0.516	9.3	0.513	3.5	1.8	0.413	0.504	0.353	0.440
IQCC1	0 to 1000 uA	112.8	105.5	111.8	104.9	108.4	104.3	100.7	101.7	101.4	101.9
IQBS1	0 to 230 uA	61.9	60.5	60.0	60.6	58.0	58.5	56.8	57.6	57.5	58.6
IHIN1	0 to 40 uA	25.7	25.1	24.8	25.2	24.9	24.7	24.2	24.6	24.4	24.4
ILIN1	0 to 40 uA	26.3	25.6	25.6	25.6	25.4	24.9	24.5	25.1	24.7	24.9
ISD1	0 to 40 uA	25.9	25.1	25.0	25.2	24.9	24.6	24.2	24.7	24.4	24.4
ILO+	2 to 5 A	2.9	2.9	2.8	2.9	2.8	2.7	2.8	2.8	2.8	2.8
ILO-	2 to 5 A	3.3	3.3	3.3	3.3	3.2	3.1	3.1	3.1	3.2	3.2
IHO+	2 to 5 A	2.7	2.6	2.6	2.7	2.5	2.6	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.452	0.451	0.464	0.450	0.485	0.480	0.475	0.484	0.471	0.484
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.422	0.427	0.442	0.429	0.465	0.457	0.455	0.460	0.450	0.461
Vth+HS	6 to 9.5 V	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	7.0	7.0	6.9	7.0	6.9	6.9	6.9	6.9	6.9	6.9
Vth+LS	6 to 9.5 V	8.4	8.4	8.3	8.4	8.4	8.3	8.3	8.3	8.3	8.3
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	7.0	6.9	6.8	6.9	6.9	6.9	6.9
Vth+SD	6 to 9.5 V	8.4	8.4	8.3	8.4	8.4	8.3	8.3	8.3	8.4	8.3
TON_LS	50 to 150 ns	124.5	118.1	124.5	118.6	120.0	118.7	119.5	120.5	118.0	117.6
TOFF_LS	50 to 125 ns	118.5	115.3	118.9	116.8	111.8	110.9	112.9	110.5	112.1	109.8
TR_LS	2 to 35 ns	13.4	15.2	15.5	14.8	15.3	15.4	15.5	15.7	15.0	14.4
TF_LS	2 to 25 ns	6.4	7.4	7.1	6.6	6.7	6.4	7.5	6.7	7.3	6.4
TON_HS	50 to 150 ns	115.5	113.2	119.3	113.3	116.9	115.9	116.7	117.1	115.3	115.2
TOFF_HS	50 to 125 ns	105.0	103.4	108.3	104.2	104.9	105.0	105.1	105.4	104.5	104.2
TR_HS	2 to 35 ns	17.8	18.6	18.8	18.5	18.1	18.1	18.2	18.3	18.0	17.7
TF_HS	2 to 25 ns	12.7	13.5	13.8	13.2	13.6	14.0	13.2	13.4	13.1	13.7
TSD_LS	50 to 140 ns	113.8	110.1	114.8	112.1	107.4	106.2	108.4	107.9	106.8	105.5
TSD_HS	50 to 140 ns	109.4	107.9	114.0	108.7	110.5	109.3	110.9	110.4	109.9	108.5
MT_ON	0 to 20 ns	9.1	4.9	5.2	5.3	3.1	2.8	2.8	3.5	2.7	2.5
MT_OFF	0 to 20 ns	13.5	11.9	10.6	12.6	6.9	6.0	7.8	5.1	7.6	5.6
VCCUV+pa	7.4 to 9.6 V	8.4	8.5	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.2	8.2	8.2	8.3	8.2	8.2	8.2	8.2
IQDD1	0 to 30 uA	0.464	0.492	8.2	0.467	3.1	1.6	0.351	0.271	0.403	0.344
IQCC1	0 to 340 uA	112.9	105.1	111.3	105.0	107.8	104.4	101.0	101.5	101.4	101.8
IQBS1	0 to 230 uA	61.6	60.5	60.1	60.7	58.1	58.5	56.8	57.4	57.5	58.4
D_IQDD1	0 to 3 uA	0.094	0.024	1.1	0.046	0.321	0.151	0.063	0.234	0.050	0.096
D_IQCC1	0 to 30 uA	0.125	0.438	0.500	0.063	0.563	0.125	0.313	0.188	0	0.188
D_IQBS1	0 to 20 uA	0.250	0	0.063	0.125	0.125	0	0	0.188	0	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	31	32	33	34	35	36	37	38	39	40
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.9	1.7	2.1	1.9	2.6	1.6	2.4	2.4	1.8	2.1
IQDD0	0 to 150 uA	0.496	0.516	0.360	0.529	0.459	0.532	0.423	0.532	0.489	0.536
IQCC0	0 to 1000 uA	93.8	93.4	92.8	94.0	140.2	92.6	120.1	93.0	92.0	91.0
IQBS0	0 to 230 uA	74.3	74.3	73.9	75.6	72.4	74.4	74.3	73.9	73.7	72.5
IHIN0	0 to 1 uA	0.028	0.028	0.025	0.027	0.023	0.027	0.027	0.029	0.024	0.027
ILIN0	0 to 1 uA	0.027	0.028	0.024	0.028	0.024	0.028	0.026	0.028	0.025	0.027
ISD0	0 to 1 uA	0.023	0.025	0.026	0.028	0.028	0.027	0.023	0.025	0.027	0.027
IQDD1	0 to 150 uA	0.541	0.518	0.509	0.369	0.371	0.385	7.0	0.536	0.349	0.401
IQCC1	0 to 1000 uA	102.2	101.6	101.2	102.4	161.0	101.0	114.0	101.3	100.1	99.3
IQBS1	0 to 230 uA	57.0	57.6	57.6	58.9	61.5	58.1	57.9	57.1	57.6	56.4
IHIN1	0 to 40 uA	24.6	24.4	24.7	24.9	23.9	24.2	24.5	24.3	24.1	24.0
ILIN1	0 to 40 uA	25.0	25.0	24.9	25.2	24.4	24.6	25.1	24.7	24.3	24.3
ISD1	0 to 40 uA	24.7	24.5	24.7	24.9	24.0	24.3	24.5	24.3	24.0	24.0
ILO+	2 to 5 A	2.8	2.7	2.8	2.7	2.8	2.7	2.7	2.7	2.7	2.8
ILO-	2 to 5 A	3.2	3.2	3.1	3.2	3.1	3.1	3.2	3.1	3.1	3.2
IHO+	2 to 5 A	2.5	2.6	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.479	0.481	0.480	0.479	0.473	0.476	0.481	0.475	0.477	0.476
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.459	0.458	0.460	0.458	0.449	0.451	0.459	0.451	0.450	0.454
Vth+HS	6 to 9.5 V	8.4	8.4	8.3	8.4	8.3	8.4	8.4	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Vth+LS	6 to 9.5 V	8.3	8.4	8.3	8.4	8.3	8.3	8.3	8.3	8.3	8.3
Vth-LS	6 to 9.5 V	6.9	6.9	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Vth+SD	6 to 9.5 V	8.4	8.4	8.3	8.4	8.3	8.4	8.4	8.3	8.3	8.3
TON_LS	50 to 150 ns	120.8	117.3	121.6	118.2	119.2	118.5	118.8	118.8	119.2	119.1
TOFF_LS	50 to 125 ns	113.3	109.2	113.9	110.3	112.9	112.4	110.3	112.8	112.7	112.9
TR_LS	2 to 35 ns	15.6	14.4	15.6	15.3	14.9	15.7	14.9	15.3	15.6	15.1
TF_LS	2 to 25 ns	7.0	6.5	7.0	6.6	7.5	7.4	6.6	7.6	7.3	7.2
TON_HS	50 to 150 ns	117.8	115.0	118.3	115.2	116.2	115.1	115.8	115.5	116.2	116.2
TOFF_HS	50 to 125 ns	106.5	103.8	107.3	104.2	104.9	104.3	104.3	104.6	105.0	105.4
TR_HS	2 to 35 ns	18.4	18.0	18.4	18.3	18.1	18.1	18.0	18.4	18.2	18.4
TF_HS	2 to 25 ns	13.6	13.9	13.8	13.4	13.3	12.8	13.9	13.4	12.9	13.4
TSD_LS	50 to 140 ns	108.6	105.2	108.8	106.7	108.1	107.5	105.9	106.9	107.7	107.7
TSD_HS	50 to 140 ns	111.8	108.7	113.3	108.8	109.3	108.8	109.3	109.3	109.6	110.2
MT_ON	0 to 20 ns	3.1	2.3	3.3	3.1	3.0	3.4	3.0	3.3	3.0	2.9
MT_OFF	0 to 20 ns	6.9	5.3	6.6	6.1	8.0	8.0	6.0	8.3	7.7	7.5
VCCUV+pa	7.4 to 9.6 V	8.4	8.4	8.5	8.4	8.4	8.4	8.5	8.4	8.4	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.2	8.2	8.2	8.2	8.3	8.2	8.2	8.3	8.3
IQDD1	0 to 30 uA	0.519	0.526	0.421	0.501	0.377	0.513	6.4	0.548	0.450	0.541
IQCC1	0 to 340 uA	102.1	101.6	100.8	102.6	160.1	101.0	113.8	101.4	100.0	99.3
IQBS1	0 to 230 uA	57.0	57.9	57.5	58.8	61.5	57.9	58.2	57.0	57.3	56.4
D_IQDD1	0 to 3 uA	0.022	0.009	0.089	0.132	0.006	0.128	0.574	0.011	0.101	0.140
D_IQCC1	0 to 30 uA	0.125	0.063	0.375	0.125	0.875	0	0.250	0.063	0.063	0
D_IQBS1	0 to 20 uA	0	0.313	0.063	0.125	0	0.188	0.313	0.063	0.250	0.063

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	41	42	43	44	45	46	47	48	49	50
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.1	2.2	2.1	2.2	1.8	2.0	2.5	1.8	1.5	1.4
IQDD0	0 to 150 uA	0.516	0.490	0.496	0.385	0.520	0.474	0.340	2.3	0.431	0.436
IQCC0	0 to 1000 uA	93.1	95.6	94.8	92.9	94.0	92.8	99.6	92.8	98.6	96.1
IQBS0	0 to 230 uA	74.7	75.1	74.8	75.0	73.8	75.2	79.7	75.6	79.0	77.5
IHIN0	0 to 1 uA	0.028	0.028	0.025	0.026	0.026	0.027	0.024	0.024	0.027	0.023
ILIN0	0 to 1 uA	0.027	0.028	0.026	0.024	0.027	0.027	0.024	0.023	0.028	0.024
ISD0	0 to 1 uA	0.025	0.023	0.028	0.024	0.027	0.022	0.028	0.027	0.028	0.028
IQDD1	0 to 150 uA	0.516	0.538	0.341	0.508	0.350	0.526	0.477	2.5	0.354	0.379
IQCC1	0 to 1000 uA	101.1	104.3	102.9	101.1	102.5	100.9	108.1	100.5	106.6	104.6
IQBS1	0 to 230 uA	58.1	57.6	57.8	58.4	57.1	58.3	62.8	61.3	62.3	61.6
IHIN1	0 to 40 uA	24.2	25.5	24.9	24.2	24.5	24.4	25.2	23.1	24.7	24.1
ILIN1	0 to 40 uA	24.7	25.8	25.3	24.7	25.1	24.5	25.7	23.3	25.1	24.4
ISD1	0 to 40 uA	24.3	25.4	24.8	24.2	24.7	24.3	25.4	23.0	24.7	24.1
ILO+	2 to 5 A	2.7	2.8	2.8	2.8	2.8	2.8	2.7	2.8	2.6	2.8
ILO-	2 to 5 A	3.2	3.2	3.1	3.2	3.2	3.2	3.1	3.2	3.1	3.1
IHO+	2 to 5 A	2.5	2.5	2.5	2.6	2.6	2.6	2.5	2.6	2.5	2.5
IHO-	2 to 5 A	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.479	0.484	0.482	0.476	0.475	0.470	0.576	0.557	0.567	0.560
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.455	0.462	0.460	0.455	0.450	0.450	0.552	0.536	0.547	0.537
Vth+HS	6 to 9.5 V	8.4	8.4	8.4	8.4	8.3	8.4	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	6.9	6.9	6.9	6.9	6.9	6.9	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.3	8.4	8.3	8.4	8.4	8.4	8.5	8.4	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	7.0
Vth+SD	6 to 9.5 V	8.3	8.4	8.3	8.4	8.4	8.4	8.5	8.4	8.4	8.5
TON_LS	50 to 150 ns	118.0	120.7	121.0	116.4	118.9	113.4	129.5	124.4	126.9	125.5
TOFF_LS	50 to 125 ns	111.8	112.1	113.4	109.5	111.4	107.2	121.2	121.6	120.2	119.9
TR_LS	2 to 35 ns	15.3	15.5	15.4	14.8	16.2	13.2	15.1	15.0	15.4	15.4
TF_LS	2 to 25 ns	7.5	7.1	6.9	7.0	7.7	6.6	7.0	6.9	7.5	7.2
TON_HS	50 to 150 ns	114.7	117.3	118.1	113.8	114.7	111.5	123.9	118.9	121.8	120.6
TOFF_HS	50 to 125 ns	104.4	105.6	106.7	103.0	103.4	100.6	112.5	109.7	111.8	110.0
TR_HS	2 to 35 ns	18.2	18.4	18.5	17.9	18.5	16.9	18.9	18.6	18.8	18.5
TF_HS	2 to 25 ns	12.8	13.4	13.4	13.2	13.4	13.0	13.1	13.6	13.5	14.0
TSD_LS	50 to 140 ns	106.7	107.6	108.5	104.8	105.8	102.2	116.2	112.6	114.7	114.6
TSD_HS	50 to 140 ns	108.7	110.4	111.3	108.5	107.8	105.4	118.1	114.1	116.7	115.6
MT_ON	0 to 20 ns	3.3	3.5	2.8	2.6	4.1	1.9	5.5	5.4	5.1	4.9
MT_OFF	0 to 20 ns	7.4	6.6	6.7	6.5	8.0	6.6	8.6	11.9	8.4	9.9
VCCUV+pa	7.4 to 9.6 V	8.4	8.4	8.5	8.4	8.5	8.4	8.5	8.4	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5	8.5	8.5	8.4	8.5	8.5	8.6	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.2	8.2	8.2	8.2	8.2	8.3	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.531	0.515	0.471	0.453	0.444	0.496	0.388	2.2	0.476	0.359
IQCC1	0 to 340 uA	101.2	103.9	103.3	100.7	102.6	100.4	107.9	100.6	106.4	105.0
IQBS1	0 to 230 uA	57.4	57.6	57.6	58.7	57.2	58.5	62.8	61.3	62.3	61.7
D_IQDD1	0 to 3 uA	0.015	0.023	0.129	0.054	0.094	0.029	0.089	0.301	0.122	0.020
D_IQCC1	0 to 30 uA	0.063	0.375	0.313	0.375	0.125	0.500	0.188	0.125	0.125	0.375
D_IQBS1	0 to 20 uA	0.688	0.063	0.125	0.313	0.063	0.250	0	0	0.063	0.063

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	51	52	53	54	55 [F]	56	57	58	59	60
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.7	2.5	2.1	2.0	1.9	2.2	1.9	1.8	2.3	1.8
IQDD0	0 to 150 uA	0.524	0.459	0.364	0.543	1.8	0.418	0.438	0.499	0.444	0.463
IQCC0	0 to 1000 uA	92.1	128.6	97.3	96.0	127.1	202.3	103.8	96.8	95.7	96.6
IQBS0	0 to 230 uA	75.1	81.6	80.8	77.6	75.0	75.9	79.9	79.1	78.1	77.3
IHIN0	0 to 1 uA	0.027	0.027	0.023	0.028	1.2 F	0.027	0.024	0.027	0.023	0.027
ILIN0	0 to 1 uA	0.027	0.026	0.023	0.028	0.027	0.026	0.025	0.027	0.024	0.027
ISD0	0 to 1 uA	0.027	0.024	0.029	0.028	0.024	0.022	0.029	0.024	0.028	0.022
IQDD1	0 to 150 uA	0.356	11.7	0.431	0.375	5.9	4.8	3.1	0.519	0.376	0.535
IQCC1	0 to 1000 uA	99.9	133.9	105.4	104.3	135.9	192.3	111.0	104.8	103.9	104.9
IQBS1	0 to 230 uA	60.1	68.6	64.1	61.5	60.0	68.0	62.9	62.6	62.4	61.1
IHIN1	0 to 40 uA	23.0	24.6	24.8	24.1	25.2	23.9	25.5	23.9	24.0	24.0
ILIN1	0 to 40 uA	23.3	25.0	25.0	24.4	23.5	24.3	25.7	24.2	24.3	24.3
ISD1	0 to 40 uA	23.0	24.7	24.7	24.2	23.1	24.0	25.5	23.9	24.0	24.0
ILO+	2 to 5 A	2.8	2.7	2.8	2.7	2.7	2.7	2.7	2.8	2.7	2.6
ILO-	2 to 5 A	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.2	3.1	3.1
IHO+	2 to 5 A	2.7	2.5	2.5	2.5	2.6	2.5	2.5	2.6	2.5	2.5
IHO-	2 to 5 A	3.4	3.3	3.3	3.3	3.4	3.3	3.3	3.4	3.3	3.3
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.558	0.576	0.563	0.553	0.571	0.572	0.573	0.555	0.565	0.563
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.534	0.552	0.538	0.531	0.546	0.547	0.553	0.532	0.540	0.544
Vth+HS	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.5	8.4	8.5	8.5	8.4	8.4	8.5	8.5	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	7.0	6.9	6.9	6.9	7.0	7.0	7.0
Vth+SD	6 to 9.5 V	8.5	8.4	8.5	8.5	8.4	8.4	8.5	8.5	8.5	8.5
TON_LS	50 to 150 ns	123.6	128.3	125.8	125.9	124.7	127.5	129.7	121.1	126.0	126.3
TOFF_LS	50 to 125 ns	121.7	120.5	119.8	120.2	122.5	122.1	120.5	116.9	118.8	120.3
TR_LS	2 to 35 ns	15.1	15.3	15.6	15.4	15.0	15.3	15.4	16.0	15.4	15.1
TF_LS	2 to 25 ns	6.9	7.2	7.3	6.9	6.8	7.2	7.1	7.2	7.3	7.1
TON_HS	50 to 150 ns	118.0	122.4	120.4	119.9	119.4	122.9	124.5	116.8	121.0	121.3
TOFF_HS	50 to 125 ns	108.5	112.0	109.5	109.5	110.1	112.1	113.1	106.8	110.7	110.6
TR_HS	2 to 35 ns	18.7	18.9	18.9	18.8	18.7	18.7	18.9	18.6	19.0	18.5
TF_HS	2 to 25 ns	13.4	13.3	13.8	13.9	13.8	13.9	13.3	14.4	13.3	14.1
TSD_LS	50 to 140 ns	112.0	115.3	114.3	113.8	113.9	116.9	116.4	110.9	114.7	114.5
TSD_HS	50 to 140 ns	112.9	117.6	115.3	114.7	115.2	117.6	118.9	111.8	116.1	116.1
MT_ON	0 to 20 ns	5.6	5.9	5.4	6.0	5.4	4.6	5.2	4.4	5.0	5.0
MT_OFF	0 to 20 ns	13.2	8.5	10.3	10.7	12.4	10.0	7.4	10.0	8.1	9.7
VCCUV+pa	7.4 to 9.6 V	8.4	8.4	8.5	8.4	8.4	8.4	8.5	8.4	8.4	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.3	8.2
IQDD1	0 to 30 uA	0.504	11.0	0.344	0.521	5.6	4.6	3.0	0.521	0.354	0.506
IQCC1	0 to 340 uA	99.9	133.6	105.7	104.1	135.4	191.9	111.1	104.4	104.1	104.3
IQBS1	0 to 230 uA	60.3	68.5	63.9	61.5	60.1	68.0	62.8	62.8	61.9	61.3
D_IQDD1	0 to 3 uA	0.148	0.614	0.088	0.146	0.238	0.228	0.158	0.003	0.022	0.029
D_IQCC1	0 to 30 uA	0.063	0.313	0.250	0.125	0.438	0.438	0.063	0.375	0.250	0.625
D_IQBS1	0 to 20 uA	0.125	0.063	0.125	0	0.125	0	0.063	0.250	0.500	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	61	62	63 [F]	64	65	66	67	68	69	70
CONT_OPN	0 to 0	0	0	2.0 F	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.1	1.9	2.0	2.1	1.8	2.3	2.4	2.3	2.5	1.9
IQDD0	0 to 150 uA	0.363	0.464	0.383	0.391	0.455	0.340	0.442	0.431	0.475	0.375
IQCC0	0 to 1000 uA	111.9	94.2	141.6	96.9	92.7	151.5	94.0	95.8	97.6	99.9
IQBS0	0 to 230 uA	79.6	77.1	76.8	78.1	75.1	75.4	76.0	77.9	77.8	80.8
IHIN0	0 to 1 uA	0.025	0.027	0	0.022	0.024	0.025	0.026	0.026	0.027	0.027
ILIN0	0 to 1 uA	0.024	0.026	0.023	0.023	0.025	0.025	0.026	0.026	0.027	0.026
ISD0	0 to 1 uA	0.026	0.021	0.032	0.027	0.027	0.024	0.022	0.022	0.024	0.026
IQDD1	0 to 150 uA	4.0	0.513	3.0	0.331	0.321	0.469	0.508	0.496	2.3	0.499
IQCC1	0 to 1000 uA	106.0	102.6	147.4	105.1	100.8	141.6	101.8	103.9	105.7	108.7
IQBS1	0 to 230 uA	77.0	61.6	61.8	61.8	60.3	61.3	66.6	61.7	63.3	64.4
IHIN1	0 to 40 uA	23.5	23.5	24.0	24.3	23.1	23.2	23.0	24.1	24.6	24.9
ILIN1	0 to 40 uA	23.9	23.9	24.0	24.6	23.6	23.9	23.5	24.4	24.9	25.5
ISD1	0 to 40 uA	23.5	23.6	23.8	24.3	23.2	23.4	23.1	24.1	24.6	25.0
ILO+	2 to 5 A	2.7	2.9	2.7	2.8	2.8	2.6	2.7	2.8	2.7	2.8
ILO-	2 to 5 A	3.1	3.2	3.1	3.1	3.2	3.0	3.1	3.1	3.1	3.1
IHO+	2 to 5 A	2.5	2.7	2.6	2.6	2.7	2.5	2.5	2.5	2.5	2.6
IHO-	2 to 5 A	3.3	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.575	0.562	0.576	0.562	0.560	0.575	0.562	0.567	0.566	0.575
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.555	0.540	0.554	0.540	0.536	0.548	0.543	0.539	0.545	0.547
Vth+HS	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.4	8.4	8.4	8.5	8.4	8.5	8.4	8.4	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	7.0	7.0	7.0	6.9	6.9	6.9	7.0
Vth+SD	6 to 9.5 V	8.4	8.4	8.5	8.5	8.4	8.5	8.4	8.5	8.5	8.5
TON_LS	50 to 150 ns	126.7	123.7	125.4	125.1	123.5	125.8	126.5	125.5	127.7	119.0
TOFF_LS	50 to 125 ns	120.6	117.6	118.0	119.1	117.2	116.2	119.8	119.5	120.8	109.3
TR_LS	2 to 35 ns	15.8	15.3	15.2	15.1	15.5	14.8	15.3	15.3	15.3	15.7
TF_LS	2 to 25 ns	7.4	7.3	7.4	7.1	6.7	7.5	7.0	7.3	7.4	6.3
TON_HS	50 to 150 ns	122.3	117.8	119.9	120.0	118.1	118.3	121.1	120.0	122.4	114.4
TOFF_HS	50 to 125 ns	112.1	108.0	110.4	109.7	108.5	107.4	110.4	110.5	112.1	103.6
TR_HS	2 to 35 ns	18.6	18.5	18.8	18.8	18.6	18.2	19.0	19.0	18.8	18.4
TF_HS	2 to 25 ns	13.8	13.8	13.3	13.6	13.7	13.3	13.9	14.0	13.6	13.6
TSD_LS	50 to 140 ns	116.0	112.0	113.7	113.5	111.6	112.5	114.3	113.8	116.3	105.3
TSD_HS	50 to 140 ns	118.2	113.0	115.1	114.7	113.2	113.5	115.7	115.5	117.6	109.5
MT_ON	0 to 20 ns	4.4	6.0	5.5	5.1	5.4	7.4	5.4	5.5	5.3	4.6
MT_OFF	0 to 20 ns	8.6	9.6	7.6	9.4	8.7	8.8	9.4	9.1	8.7	5.7
VCCUV+pa	7.4 to 9.6 V	8.4	8.5	8.4	8.5	8.4	8.5	8.4	8.4	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.6	8.5	8.5	8.4	8.6	8.5	8.5	8.6	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.2	8.3	8.1	8.3	8.3	8.3	8.3	8.3
IQDD1	0 to 30 uA	3.5	0.478	3.0	0.362	0.398	0.417	0.494	0.459	1.8	0.421
IQCC1	0 to 340 uA	105.9	102.3	146.9	105.4	100.8	141.0	101.5	104.4	105.6	108.3
IQBS1	0 to 230 uA	76.8	61.9	61.4	61.7	60.4	61.7	66.3	62.2	63.1	64.5
D_IQDD1	0 to 3 uA	0.499	0.035	0.082	0.031	0.077	0.053	0.014	0.037	0.441	0.079
D_IQCC1	0 to 30 uA	0.063	0.250	0.500	0.250	0	0.625	0.313	0.500	0.125	0.375
D_IQBS1	0 to 20 uA	0.188	0.250	0.313	0.125	0.125	0.375	0.313	0.500	0.250	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	71	72	73	74	75	76	77	78	79	80
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.2	2.0	2.2	2.4	2.1	1.9	1.8	1.9	1.7	2.2
IQDD0	0 to 150 uA	0.443	0.363	0.462	0.414	0.459	0.368	0.477	0.315	0.311	1.3
IQCC0	0 to 1000 uA	104.1	97.6	105.5	98.6	100.6	97.3	101.3	101.3	99.9	100.1
IQBS0	0 to 230 uA	81.3	81.5	79.3	78.9	81.9	79.4	81.1	81.3	81.7	80.5
IHIN0	0 to 1 uA	0.028	0.026	0.029	0.024	0.025	0.023	0.028	0.023	0.024	0.024
ILIN0	0 to 1 uA	0.027	0.025	0.028	0.024	0.026	0.024	0.028	0.023	0.023	0.025
ISD0	0 to 1 uA	0.023	0.026	0.023	0.030	0.029	0.030	0.026	0.028	0.026	0.029
IQDD1	0 to 150 uA	0.490	0.493	0.523	0.816	0.353	0.381	3.2	0.421	0.449	1.0
IQCC1	0 to 1000 uA	109.1	105.6	106.9	107.4	109.2	105.6	109.0	109.4	107.9	108.6
IQBS1	0 to 230 uA	63.4	65.6	66.1	62.9	64.5	64.3	64.4	64.1	64.3	63.3
IHIN1	0 to 40 uA	25.5	24.3	24.5	24.5	25.4	24.3	25.6	25.5	25.3	25.2
ILIN1	0 to 40 uA	25.8	24.8	25.1	25.1	26.0	24.8	25.8	25.9	25.4	25.7
ISD1	0 to 40 uA	25.5	24.4	24.6	24.7	25.5	24.3	25.5	25.5	25.1	25.2
ILO+	2 to 5 A	2.7	2.8	2.7	2.7	2.7	2.7	2.8	2.7	2.8	2.8
ILO-	2 to 5 A	3.0	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1
IHO+	2 to 5 A	2.5	2.7	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.6
IHO-	2 to 5 A	3.3	3.4	3.3	3.4	3.3	3.4	3.3	3.3	3.4	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.575	0.581	0.570	0.580	0.572	0.574	0.575	0.574	0.560	0.569
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.551	0.550	0.550	0.556	0.554	0.551	0.556	0.552	0.538	0.545
Vth+HS	6 to 9.5 V	8.5	8.6	8.5	8.5	8.5	8.6	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.1	7.0	7.0	7.0	7.1	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.5	8.5	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	7.0	6.9	7.0	6.9	7.0	6.9	6.9	6.9	6.9
Vth+SD	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
TON_LS	50 to 150 ns	122.4	114.1	119.0	118.6	120.3	115.7	119.6	119.3	116.9	120.9
TOFF_LS	50 to 125 ns	113.1	106.0	108.6	107.2	109.8	106.8	111.4	108.7	106.8	111.2
TR_LS	2 to 35 ns	15.2	16.0	15.0	15.3	14.9	15.1	12.5	14.5	12.9	15.5
TF_LS	2 to 25 ns	6.7	6.8	7.0	7.0	7.0	6.7	6.9	6.6	6.6	6.6
TON_HS	50 to 150 ns	119.3	109.5	116.2	115.4	117.5	111.7	117.9	116.9	115.1	117.6
TOFF_HS	50 to 125 ns	107.8	99.5	104.9	105.0	106.3	100.9	106.4	105.3	104.2	106.8
TR_HS	2 to 35 ns	18.2	18.0	18.1	18.1	18.3	18.3	16.8	18.0	16.8	18.4
TF_HS	2 to 25 ns	14.3	12.9	12.4	12.4	14.0	13.2	14.2	13.5	12.8	14.0
TSD_LS	50 to 140 ns	108.0	101.2	104.5	104.3	105.6	102.7	105.9	104.9	102.8	106.8
TSD_HS	50 to 140 ns	113.8	104.9	110.5	111.1	112.0	105.9	112.4	111.2	110.0	112.6
MT_ON	0 to 20 ns	3.1	4.6	2.8	3.1	2.8	4.0	1.6	2.4	1.8	3.3
MT_OFF	0 to 20 ns	5.3	6.5	3.7	2.2	3.5	6.0	5.0	3.4	2.6	4.4
VCCUV+pa	7.4 to 9.6 V	8.5	8.4	8.4	8.3	8.4	8.4	8.4	8.4	8.5	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.0	8.2	8.2	8.2	8.1	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.2	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.2
IQDD1	0 to 30 uA	0.499	0.424	0.218	0.684	0.368	0.329	3.1	0.336	0.388	0.724
IQCC1	0 to 340 uA	109.1	105.3	106.4	107.6	109.0	105.6	108.9	109.8	108.3	108.5
IQBS1	0 to 230 uA	63.5	65.7	65.7	62.9	64.6	64.2	63.9	64.0	64.4	63.4
D_IQDD1	0 to 3 uA	0.009	0.069	0.304	0.132	0.015	0.052	0.071	0.086	0.061	0.324
D_IQCC1	0 to 30 uA	0.063	0.375	0.500	0.125	0.188	0.063	0.125	0.438	0.438	0.063
D_IQBS1	0 to 20 uA	0.063	0.063	0.375	0	0.125	0.125	0.438	0.125	0.063	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	81	82	83	84	85	86 [F]	87	88	89	90
CONT_OPN	0 to 0	0	0	0	0	0	48.0 F	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.8	2.1	1.8	2.2	2.1	1.9	2.0	2.1	2.0	2.2
IQDD0	0 to 150 uA	0.411	0.327	0.291	0.496	0.403	0.309	0.517	0.498	0.339	0.386
IQCC0	0 to 1000 uA	107.9	106.3	98.9	98.0	121.9	20.9	123.9	104.4	121.5	101.4
IQBS0	0 to 230 uA	81.0	79.6	80.4	79.7	80.2	79.8	80.1	81.6	78.3	81.3
IHIN0	0 to 1 uA	0.024	0.026	0.024	0.030	0.023	0.022	0.030	0.030	0.024	0.027
ILIN0	0 to 1 uA	0.025	0.025	0.023	0.029	0.024	0.022	0.030	0.029	0.024	0.026
ISD0	0 to 1 uA	0.028	0.026	0.025	0.027	0.029	0.028	0.030	0.026	0.030	0.025
IQDD1	0 to 150 uA	2.6	0.457	0.444	0.475	14.7	0.336	0.363	8.6	0.438	0.501
IQCC1	0 to 1000 uA	113.1	122.0	107.3	105.9	119.8	3.8	133.9	110.1	127.6	109.4
IQBS1	0 to 230 uA	63.4	63.8	63.4	64.1	65.3	80.0	64.1	63.5	63.0	63.8
IHIN1	0 to 40 uA	25.5	25.0	25.2	24.3	25.3	24.8	24.6	25.8	25.0	25.6
ILIN1	0 to 40 uA	26.0	25.7	25.6	24.6	25.7	25.5	25.5	26.1	25.5	26.1
ISD1	0 to 40 uA	25.6	25.2	25.3	24.2	25.2	24.9	24.8	25.6	25.1	25.7
ILO+	2 to 5 A	2.8	2.7	2.7	2.8	2.7	2.7	2.7	2.7	2.7	2.7
ILO-	2 to 5 A	3.1	3.0	3.1	3.2	3.1	0 F	3.1	3.1	3.1	3.1
IHO+	2 to 5 A	2.5	2.6	2.5	2.6	2.5	0.002 F	2.6	2.5	2.6	2.5
IHO-	2 to 5 A	3.3	3.4	3.3	3.4	3.3	3.4	3.4	3.3	3.4	3.3
FN_15/15	1 to 1	1	1	1	1	1	0 F	1	1	1	1
VOH_LS	0 to 1.2 V	0.571	0.578	0.573	0.566	0.575	0.415	0.575	0.569	0.577	0.572
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	1.6 F	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.549	0.548	0.552	0.536	0.554	15.0 F	0.542	0.547	0.554	0.547
Vth+HS	6 to 9.5 V	8.5	8.5	8.5	8.6	8.5	11.1 F	8.6	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0	7.0	7.1	7.0	11.1 F	7.1	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	2.9 F	8.5	8.5	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	7.0	6.9	7.0	6.9	2.9 F	7.0	6.9	7.0	6.9
Vth+SD	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	11.1 F	8.5	8.5	8.5	8.5
TON_LS	50 to 150 ns	121.7	121.7	121.4	115.3	121.7	108.2	119.4	123.1	121.3	121.2
TOFF_LS	50 to 125 ns	110.5	111.9	112.2	106.2	111.5	1243 F	108.4	112.7	111.0	113.3
TR_LS	2 to 35 ns	14.9	15.8	15.6	15.7	15.1	40.4 F	15.3	15.2	15.6	15.3
TF_LS	2 to 25 ns	6.7	7.3	6.6	6.7	6.7	-112690	6.8	6.5	6.9	6.9
TON_HS	50 to 150 ns	118.9	115.8	118.7	111.5	118.9	127.4	114.0	120.1	115.8	117.8
TOFF_HS	50 to 125 ns	107.2	104.3	107.4	100.9	106.7	-100180	103.3	108.3	103.9	106.4
TR_HS	2 to 35 ns	18.0	18.5	18.1	17.8	18.1	3.3	18.3	18.6	18.7	18.3
TF_HS	2 to 25 ns	12.4	13.5	14.1	13.4	14.1	3.3	13.9	14.2	13.8	14.2
TSD_LS	50 to 140 ns	106.9	107.0	107.3	102.3	107.8	1250 F	104.9	108.4	106.5	106.0
TSD_HS	50 to 140 ns	113.5	109.2	114.5	105.9	113.7	-100180	107.6	114.1	108.6	111.6
MT_ON	0 to 20 ns	2.8	5.8	2.7	3.9	2.8	19.2	5.4	3.0	5.5	3.4
MT_OFF	0 to 20 ns	3.3	7.7	4.8	5.3	4.7	101426	5.1	4.4	7.2	6.9
VCCUV+pa	7.4 to 9.6 V	8.4	8.5	8.4	8.5	8.4	11.1 F	8.4	8.4	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.1	8.2	8.2	11.1 F	8.2	8.2	8.1	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5	8.5	8.5	8.5	11.1 F	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.2	8.2	8.2	8.2	11.1 F	8.3	8.3	8.2	8.3
IQDD1	0 to 30 uA	2.2	0.291	0.412	0.511	14.0	0.329	0.478	8.1	0.346	0.450
IQCC1	0 to 340 uA	112.1	121.5	107.3	105.7	119.3	4.0	133.3	110.0	127.8	109.7
IQBS1	0 to 230 uA	63.0	63.6	63.5	63.7	65.1	80.1	63.6	63.5	62.9	64.1
D_IQDD1	0 to 3 uA	0.335	0.166	0.032	0.036	0.702	0.008	0.116	0.566	0.092	0.051
D_IQCC1	0 to 30 uA	0.938	0.500	0.063	0.250	0.500	0.250	0.563	0.125	0.125	0.250
D_IQBS1	0 to 20 uA	0.438	0.188	0.063	0.438	0.188	0.125	0.438	0	0.063	0.313

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7623
DATE : 1/19/00
Location: PRE SEE WL800819

TESTS	LIMITS	91	92
CONT_OPN	0 to 0	0	0
DIOD_SHT	0 to 0	0	0
V_MAX	425 to 990 V	N/A	N/A
I_LEAK	-1 to 50 uA	2.2	2.0
IQDD0	0 to 150 uA	1.5	0.386
IQCC0	0 to 1000 uA	115.7	100.3
IQBS0	0 to 230 uA	80.9	81.5
IHIN0	0 to 1 uA	0.029	0.023
ILIN0	0 to 1 uA	0.029	0.023
ISD0	0 to 1 uA	0.028	0.029
IQDD1	0 to 150 uA	10.3	0.387
IQCC1	0 to 1000 uA	127.1	108.5
IQBS1	0 to 230 uA	66.4	64.5
IHIN1	0 to 40 uA	25.3	25.1
ILIN1	0 to 40 uA	25.8	25.5
ISD1	0 to 40 uA	25.3	25.1
ILO+	2 to 5 A	2.8	2.7
ILO-	2 to 5 A	3.1	3.1
IHO+	2 to 5 A	2.5	2.5
IHO-	2 to 5 A	3.3	3.3
FN_15/15	1 to 1	1	1
VOH_LS	0 to 1.2 V	0.573	0.563
VOL_LS	-0.01 to 0.1 V	0	0
VOL_HS	-0.01 to 0.1 V	0	0
VOH_HS	0 to 1.2 V	0.550	0.543
Vth+HS	6 to 9.5 V	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0
Vth+LS	6 to 9.5 V	8.4	8.5
Vth-LS	6 to 9.5 V	6.9	6.9
Vth+SD	6 to 9.5 V	8.5	8.5
TON_LS	50 to 150 ns	121.8	119.9
TOFF_LS	50 to 125 ns	112.2	111.1
TR_LS	2 to 35 ns	15.4	15.9
TF_LS	2 to 25 ns	6.7	6.5
TON_HS	50 to 150 ns	118.4	116.3
TOFF_HS	50 to 125 ns	107.7	105.8
TR_HS	2 to 35 ns	18.5	18.3
TF_HS	2 to 25 ns	13.8	14.2
TSD_LS	50 to 140 ns	107.6	106.0
TSD_HS	50 to 140 ns	113.6	111.7
MT_ON	0 to 20 ns	3.4	3.5
MT_OFF	0 to 20 ns	4.5	5.3
VCCUV+pa	7.4 to 9.6 V	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.2	8.3
IQDD1	0 to 30 uA	9.0	0.330
IQCC1	0 to 340 uA	126.3	108.6
IQBS1	0 to 230 uA	65.8	64.6
D_IQDD1	0 to 3 uA	1.3	0.057
D_IQCC1	0 to 30 uA	0.813	0.063
D_IQBS1	0 to 20 uA	0.625	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	1	2	3	4 [F]	5	6	7 [F]	8	9	10
CONT_OPN	0 to 0	0	0	0	192.0 F	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.9	2.3	2.3	4.4	2.1	2.8	2.2	2.1	2.6	2.5
IQDD0	0 to 150 uA	0.469	0.526	0.613	0.703	0.619	0.441	0.616	0.564	0.503	0.419
IQCC0	0 to 1000 uA	95.9	94.9	95.7	94.6	94.8	95.3	96.3	94.7	95.7	94.4
IQBS0	0 to 230 uA	77.7	78.1	78.3	1.9	77.8	77.9	11390 F	78.5	78.1	77.1
IHIN0	0 to 1 uA	0.032	0.025	0.031	0.034	0.030	0.025	0.035	0.030	0.025	0.027
ILIN0	0 to 1 uA	0.031	0.026	0.031	0.033	0.030	0.025	0.035	0.030	0.026	0.027
ISD0	0 to 1 uA	0.027	0.031	0.030	0.028	0.030	0.032	0.035	0.027	0.032	0.022
IQDD1	0 to 150 uA	0.565	0.419	0.435	0.758	0.416	0.473	0.414	0.534	0.438	0.530
IQCC1	0 to 1000 uA	104.6	103.3	103.8	103.0	103.6	103.7	105.4	103.4	104.9	103.4
IQBS1	0 to 230 uA	60.0	61.3	61.1	1.4	60.5	60.9	1441 F	60.8	60.8	60.1
IHIN1	0 to 40 uA	25.0	24.8	24.8	25.1	24.8	24.8	25.1	24.7	25.3	24.6
ILIN1	0 to 40 uA	25.5	25.1	25.1	25.3	25.2	25.2	25.4	25.1	25.7	25.0
ISD1	0 to 40 uA	25.0	24.7	24.7	25.0	24.8	24.8	25.1	24.7	25.4	24.6
ILO+	2 to 5 A	3.0	2.9	3.0	2.9	3.0	3.0	3.0	3.1	2.9	3.0
ILO-	2 to 5 A	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.5	3.3	3.4
IHO+	2 to 5 A	2.7	2.7	2.7	0.133 F	2.7	2.7	2.7	2.8	2.7	2.8
IHO-	2 to 5 A	3.6	3.5	3.5	0 F	3.5	3.6	3.5	3.6	3.5	3.6
FN_15/15	1 to 1	1	1	1	0 F	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.463	0.462	0.463	0.465	0.459	0.467	0.449	0.452	0.458	0.456
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0.002	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	1.6 F	0	0	0.017	0	0	0
VOH_HS	0 to 1.2 V	0.442	0.435	0.445	0.163	0.437	0.446	0.491	0.429	0.435	0.432
Vth+HS	6 to 9.5 V	8.4	8.4	8.4	2.9 F	8.4	8.4	8.4	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	6.9	7.0	6.9	2.9 F	7.0	6.9	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.3	8.3	8.3	8.3	8.3	8.3	8.4	8.4	8.4	8.4
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.0	6.9	7.0
Vth+SD	6 to 9.5 V	8.3	8.4	8.3	8.3	8.4	8.3	8.4	8.4	8.4	8.4
TON_LS	50 to 150 ns	118.9	118.4	115.2	119.9	117.6	115.6	119.2	115.5	119.7	116.4
TOFF_LS	50 to 125 ns	113.4	113.6	111.6	117.8	113.5	111.7	115.3	111.1	115.1	111.2
TR_LS	2 to 35 ns	15.0	15.0	9.7	8.6	14.9	13.6	8.8	13.8	15.2	14.0
TF_LS	2 to 25 ns	14.4	6.5	14.1	6.6	6.0	6.1	6.1	14.6	6.4	5.9
TON_HS	50 to 150 ns	112.1	111.7	109.0	-100180	111.3	109.5	121.5	107.7	113.0	108.4
TOFF_HS	50 to 125 ns	102.2	102.0	99.7	-100180	102.2	100.1	102.9	99.8	103.7	100.0
TR_HS	2 to 35 ns	10.4	10.6	10.9	3.3	10.7	10.7	1540 F	10.4	10.5	10.1
TF_HS	2 to 25 ns	8.7	9.2	8.9	3.3	8.7	8.5	8.4	8.8	8.8	8.5
TSD_LS	50 to 140 ns	110.4	111.3	107.7	111.2	111.0	108.1	110.7	107.4	112.6	108.8
TSD_HS	50 to 140 ns	105.3	105.0	102.8	-100180	105.0	102.6	-100180	102.8	106.9	102.7
MT_ON	0 to 20 ns	6.8	6.8	6.2	100301	6.3	6.1	2.3	7.9	6.7	8.1
MT_OFF	0 to 20 ns	11.2	11.7	11.9	100300	11.3	11.6	12.4	11.3	11.4	11.1
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	8.5	2.9 F	8.5	8.5	8.5	8.4	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.3	8.3	2.9 F	8.3	8.2	8.2	8.2	8.2	8.3
VBSUV+pa	7.5 to 9.7 V	8.6	8.4	8.6	4.9 F	8.5	8.6	8.5	8.6	8.6	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.1	8.3	4.8 F	8.3	8.3	8.3	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.483	0.469	0.596	0.745	0.589	0.402	0.626	0.604	0.453	0.579
IQCC1	0 to 340 uA	104.4	103.6	104.0	102.9	103.6	104.1	105.8	103.2	104.9	103.4
IQBS1	0 to 230 uA	60.4	61.0	61.1	1.4	60.6	61.0	1315 F	60.6	60.4	60.3
D_IQDD1	0 to 3 uA	0.083	0.050	0.161	0.013	0.173	0.071	0.212	0.071	0.015	0.049
D_IQCC1	0 to 30 uA	0.250	0.375	0.188	0.063	0.063	0.375	0.375	0.250	0	0
D_IQBS1	0 to 20 uA	0.438	0.250	0.063	0	0.125	0.063	125.6 F	0.250	0.375	0.188

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	11	12 [F]	13	14 [F]	15	16	17	18	19	20
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.5	2.7	2.1	2.1	2.8	2.3	2.2	2.0	2.3	2.0
IQDD0	0 to 150 uA	0.402	0.313	0.581	0.379	0.448	0.369	0.393	0.291	0.270	0.347
IQCC0	0 to 1000 uA	99.4	94.3	95.1	95.2	113.8	94.9	95.8	93.6	94.0	94.9
IQBS0	0 to 230 uA	77.3	11349 F	77.0	11349 F	77.6	75.8	77.9	77.0	76.8	79.3
IHIN0	0 to 1 uA	0.023	0.030	0.030	0.030	0.028	0.024	0.026	0.021	0.024	0.023
ILIN0	0 to 1 uA	0.024	0.029	0.030	0.030	0.028	0.023	0.027	0.021	0.023	0.023
ISD0	0 to 1 uA	0.028	0.031	0.028	0.032	0.026	0.020	0.024	0.025	0.026	0.029
IQDD1	0 to 150 uA	0.354	0.429	0.485	0.280	6.9	0.411	0.472	0.412	0.494	0.498
IQCC1	0 to 1000 uA	104.1	102.8	103.6	105.8	119.8	102.8	104.8	102.1	103.2	103.6
IQBS1	0 to 230 uA	60.1	11363 F	59.8	11363 F	59.6	58.8	60.7	60.4	60.1	62.4
IHIN1	0 to 40 uA	24.9	24.6	24.6	25.1	25.6	24.8	24.9	24.6	24.7	24.5
ILIN1	0 to 40 uA	25.3	25.0	24.9	25.2	26.0	24.9	25.6	25.0	25.1	24.8
ISD1	0 to 40 uA	24.9	24.7	24.6	25.0	25.6	24.6	25.0	24.7	24.8	24.6
ILO+	2 to 5 A	2.9	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.1
ILO-	2 to 5 A	3.3	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5
IHO+	2 to 5 A	2.7	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.9
IHO-	2 to 5 A	3.5	2.2	3.6	1.8 F	3.5	3.5	3.5	3.5	3.5	3.7
FN_15/15	1 to 1	1	0 F	1	0 F	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.473	0.451	0.460	0.461	0.472	0.468	0.462	0.463	0.464	0.447
VOL_LS	-0.01 to 0.1 V	0	0.003	0	0.003	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0.052	0	0.055	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.448	0.815	0.436	0.796	0.448	0.446	0.443	0.442	0.446	0.426
Vth+HS	6 to 9.5 V	8.4	8.4	8.4	8.4	8.4	8.4	8.3	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	6.9	7.0	7.0	7.0	6.9	6.9	6.9	7.0	6.9	7.0
Vth+LS	6 to 9.5 V	8.3	8.4	8.4	8.4	8.3	8.3	8.3	8.4	8.4	8.4
Vth-LS	6 to 9.5 V	6.9	7.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.0
Vth+SD	6 to 9.5 V	8.4	8.4	8.3	8.4	8.3	8.3	8.3	8.4	8.4	8.4
TON_LS	50 to 150 ns	118.3	117.4	118.3	123.0	122.0	122.0	117.1	118.8	118.7	111.0
TOFF_LS	50 to 125 ns	113.1	114.6	113.9	117.9	117.0	116.3	112.9	114.1	113.8	107.7
TR_LS	2 to 35 ns	14.8	9.0	14.8	8.8	14.9	15.4	15.1	15.1	15.1	14.5
TF_LS	2 to 25 ns	6.1	6.6	14.7	6.6	13.6	13.7	11.2	5.9	6.1	6.1
TON_HS	50 to 150 ns	111.0	-100180	111.8	-100180	115.5	115.4	111.0	112.1	111.8	104.0
TOFF_HS	50 to 125 ns	101.5	-100180	102.4	-100180	105.0	104.3	101.4	102.4	102.0	96.1
TR_HS	2 to 35 ns	10.7	3.3	10.3	3.3	10.3	10.4	10.7	11.0	10.5	10.6
TF_HS	2 to 25 ns	9.1	3.3	8.8	3.3	9.1	9.3	9.2	9.1	8.8	8.9
TSD_LS	50 to 140 ns	110.1	108.5	111.7	112.1	113.5	113.3	110.0	112.0	110.7	106.2
TSD_HS	50 to 140 ns	104.5	-100180	105.3	-100180	108.3	107.1	104.1	105.5	104.8	98.4
MT_ON	0 to 20 ns	7.3	100298	6.5	100304	6.5	6.6	6.1	6.7	7.0	7.0
MT_OFF	0 to 20 ns	11.6	100297	11.5	100301	11.9	12	11.6	11.7	11.8	11.6
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	8.4	8.5	8.4	8.5	8.5	8.5	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.3	8.2	8.3	8.2	8.2	8.3	8.3
VBSUV+pa	7.5 to 9.7 V	8.6	8.6	8.6	8.6	8.6	8.5	8.5	8.6	8.6	8.6
VBSUV-pa	7 to 9.4 V	8.3	8.4	8.3	8.3	8.3	8.3	8.2	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.439	0.386	0.571	0.486	6.9	0.214	0.352	0.356	0.378	0.276
IQCC1	0 to 340 uA	104.4	104.1	103.4	106.9	119.6	102.3	104.4	102.8	103.1	103.8
IQBS1	0 to 230 uA	60.1	11363 F	59.5	11363 F	59.4	58.4	60.7	60.4	60.2	62.1
D_IQDD1	0 to 3 uA	0.085	0.044	0.086	0.206	0.059	0.196	0.120	0.056	0.116	0.223
D_IQCC1	0 to 30 uA	0.250	1.3	0.250	1.1	0.188	0.500	0.375	0.688	0.063	0.250
D_IQBS1	0 to 20 uA	0.063	0.188	0.250	0.313	0.125	0.375	0	0	0.063	0.250

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	21	22	23	24	25	26	27	28	29	30
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.8	2.2	1.9	1.9	2.8	2.0	2.8	2.1	2.3	2.5
IQDD0	0 to 150 uA	0.409	0.303	0.280	0.451	0.412	0.383	0.321	0.321	0.417	0.317
IQCC0	0 to 1000 uA	109.3	94.8	100.9	95.0	95.4	92.8	91.3	92.4	91.5	92.4
IQBS0	0 to 230 uA	77.8	76.9	73.8	77.1	74.1	73.6	71.9	73.4	72.8	74.1
IHIN0	0 to 1 uA	0.027	0.023	0.021	0.026	0.027	0.023	0.023	0.022	0.028	0.021
ILIN0	0 to 1 uA	0.026	0.022	0.022	0.025	0.026	0.024	0.022	0.022	0.027	0.022
ISD0	0 to 1 uA	0.025	0.028	0.027	0.022	0.023	0.024	0.027	0.028	0.024	0.027
IQDD1	0 to 150 uA	0.294	0.471	9.6	0.338	3.0	1.5	0.487	0.404	0.529	0.339
IQCC1	0 to 1000 uA	110.4	103.8	109.4	103.8	106.6	102.6	99.1	100.5	99.7	100.5
IQBS1	0 to 230 uA	61.2	60.1	59.6	59.7	57.8	57.9	56.7	57.4	56.7	58.3
IHIN1	0 to 40 uA	24.9	24.6	24.2	24.6	24.4	24.1	23.5	24.0	23.7	24.0
ILIN1	0 to 40 uA	25.5	25.1	25.0	25.1	24.8	24.2	23.9	24.5	24.0	24.5
ISD1	0 to 40 uA	25.0	24.6	24.4	24.7	24.4	24.0	23.6	24.1	23.7	23.9
ILO+	2 to 5 A	2.9	3.0	2.9	3.0	2.8	2.8	2.8	2.8	2.9	2.8
ILO-	2 to 5 A	3.3	3.4	3.3	3.4	3.2	3.2	3.2	3.2	3.3	3.3
IHO+	2 to 5 A	2.8	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	3.6	3.6	3.5	3.6	3.4	3.4	3.5	3.4	3.5	3.5
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.470	0.459	0.475	0.462	0.494	0.494	0.489	0.494	0.485	0.493
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.440	0.438	0.455	0.438	0.472	0.468	0.465	0.472	0.462	0.471
Vth+HS	6 to 9.5 V	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	7.0	7.0	6.9	7.0	6.9	6.9	6.9	6.9	6.9	6.9
Vth+LS	6 to 9.5 V	8.4	8.4	8.3	8.4	8.4	8.3	8.3	8.3	8.3	8.3
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	7.0	6.9	6.8	6.9	6.9	6.9	6.9
Vth+SD	6 to 9.5 V	8.4	8.4	8.3	8.4	8.4	8.3	8.4	8.3	8.4	8.4
TON_LS	50 to 150 ns	120.1	115.8	122.4	117.1	118.4	117.0	117.5	119.2	116.3	116.9
TOFF_LS	50 to 125 ns	112.6	112.4	116.0	112.6	110.8	109.8	111.5	111.4	110.9	108.9
TR_LS	2 to 35 ns	12.9	15.4	15.3	15.0	8.2	7.8	8.6	9.0	8.0	8.1
TF_LS	2 to 25 ns	13.2	6.0	6.8	6.2	6.0	5.9	6.3	6.1	6.0	6.2
TON_HS	50 to 150 ns	110.4	109.9	116.4	110.1	113.3	112.1	112.7	113.7	111.4	112.0
TOFF_HS	50 to 125 ns	101.1	101.1	105.0	100.7	101.9	101.3	101.4	101.9	100.3	100.9
TR_HS	2 to 35 ns	10.3	10.9	10.4	10.5	10.8	10.9	11.2	10.6	10.9	11.1
TF_HS	2 to 25 ns	8.5	8.9	9.1	9.0	9.3	9.5	9.1	9.1	9.2	9.6
TSD_LS	50 to 140 ns	111.8	109.5	114.3	111.4	106.1	104.8	106.2	107.5	105.7	104.8
TSD_HS	50 to 140 ns	103.3	103.4	108.1	103.9	104.3	104.4	103.8	104.6	103.7	103.8
MT_ON	0 to 20 ns	9.7	6.0	6.0	7.0	5.1	4.9	4.8	5.4	4.9	4.9
MT_OFF	0 to 20 ns	11.5	11.3	11.1	12	8.9	8.5	10.1	9.5	10.6	8.0
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	8.5	8.5	8.5	8.5	8.4	8.5	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.6	8.6	8.5	8.5	8.5	8.6	8.6	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.2
IQDD1	0 to 30 uA	0.481	0.351	9.1	0.526	2.9	1.6	0.388	0.349	0.527	0.324
IQCC1	0 to 340 uA	110.6	104.3	109.3	103.8	106.1	102.8	99.3	100.7	99.9	100.6
IQBS1	0 to 230 uA	60.6	60.1	59.2	59.8	58.2	57.8	56.4	57.1	57.0	58.1
D_IQDD1	0 to 3 uA	0.188	0.121	0.426	0.188	0.121	0.168	0.099	0.056	0.003	0.014
D_IQCC1	0 to 30 uA	0.250	0.500	0.125	0.063	0.438	0.125	0.250	0.188	0.250	0.125
D_IQBS1	0 to 20 uA	0.563	0	0.438	0.063	0.375	0.063	0.250	0.313	0.313	0.188

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	31	32	33	34	35	36	37	38 [F]	39	40
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.2	2.3	1.8	2.2	2.4	2.2	2.7	6.8	1.9	2.2
IQDD0	0 to 150 uA	0.457	0.383	0.369	0.363	0.254	0.373	0.308	0.449	0.398	0.430
IQCC0	0 to 1000 uA	92.7	91.9	91.5	92.7	91.3	131.4	116.9	11349 F	91.2	89.9
IQBS0	0 to 230 uA	73.3	73.7	73.3	74.8	73.3	71.1	73.7	4476 F	72.9	71.4
IHIN0	0 to 1 uA	0.027	0.023	0.024	0.025	0.022	0.024	0.022	0.034	0.025	0.027
ILIN0	0 to 1 uA	0.027	0.024	0.025	0.027	0.022	0.024	0.021	0.036	0.025	0.028
ISD0	0 to 1 uA	0.028	0.027	0.028	0.026	0.027	0.023	0.026	0.031	0.024	0.026
IQDD1	0 to 150 uA	0.353	0.346	0.340	0.330	0.469	0.349	5.9	0.554	0.414	0.401
IQCC1	0 to 1000 uA	101.1	100.4	99.8	100.8	99.3	151.7	110.2	11364 F	99.3	98.1
IQBS1	0 to 230 uA	56.8	57.8	57.2	58.2	57.5	60.4	57.8	3802 F	57.1	55.8
IHIN1	0 to 40 uA	24.1	24.0	24.1	24.3	23.7	23.3	23.9	24.0	23.6	23.5
ILIN1	0 to 40 uA	24.5	24.6	24.3	24.6	24.1	23.8	24.5	24.6	23.9	23.7
ISD1	0 to 40 uA	24.2	24.0	24.1	24.3	23.7	23.4	23.9	24.1	23.6	23.5
ILO+	2 to 5 A	2.8	2.9	2.8	2.9	2.8	2.9	2.8	5.2 F	2.9	2.8
ILO-	2 to 5 A	3.2	3.2	3.2	3.2	3.2	3.2	3.3	0.806 F	3.2	3.2
IHO+	2 to 5 A	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.0	2.6	2.6
IHO-	2 to 5 A	3.4	3.4	3.4	3.4	3.5	3.5	3.5	0.679 F	3.4	3.5
FN_15/15	1 to 1	1	1	1	1	1	1	1	0 F	1	1
VOH_LS	0 to 1.2 V	0.491	0.493	0.495	0.493	0.487	0.485	0.494	0.255	0.486	0.486
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	1.6 F	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	1.6 F	0	0
VOH_HS	0 to 1.2 V	0.467	0.467	0.470	0.468	0.462	0.460	0.471	0.445	0.462	0.466
Vth+HS	6 to 9.5 V	8.4	8.4	8.3	8.4	8.4	8.3	8.4	11.1 F	8.4	8.4
Vth-HS	6 to 9.5 V	6.9	6.9	6.9	6.9	6.9	6.9	6.9	11.1 F	6.9	6.9
Vth+LS	6 to 9.5 V	8.4	8.4	8.3	8.4	8.4	8.3	8.3	2.9 F	8.3	8.3
Vth-LS	6 to 9.5 V	6.9	6.9	6.8	6.9	6.9	6.9	6.9	2.9 F	6.9	6.9
Vth+SD	6 to 9.5 V	8.4	8.4	8.3	8.4	8.4	8.3	8.4	11.1 F	8.3	8.3
TON_LS	50 to 150 ns	119.7	116.1	120.2	116.7	117.2	117.5	117.2	-100180	117.9	117.8
TOFF_LS	50 to 125 ns	112.5	108.9	112.7	109.5	110.9	112.0	109.4	-100180	111.6	112.1
TR_LS	2 to 35 ns	8.4	7.8	9.2	8.3	8.8	7.8	7.7	-111160	8.1	8.0
TF_LS	2 to 25 ns	6.2	5.9	6.2	6.1	7.4	8.7	6.3	-111170	6.4	6.6
TON_HS	50 to 150 ns	114.6	111.5	114.9	111.4	111.5	112.4	112.3	-100180	112.7	112.9
TOFF_HS	50 to 125 ns	103.1	100.4	103.7	100.5	100.4	100.9	101.0	-100180	101.4	101.5
TR_HS	2 to 35 ns	10.7	11.1	10.7	11.0	10.6	11.0	10.7	3.3	10.8	10.8
TF_HS	2 to 25 ns	9.6	9.6	9.4	9.2	9.1	8.6	9.7	3.3	9.1	9.3
TSD_LS	50 to 140 ns	107.0	105.0	107.6	104.4	106.2	106.6	104.5	-100180	106.7	106.8
TSD_HS	50 to 140 ns	106.0	103.1	106.5	103.3	102.9	103.5	103.7	-100180	104.4	104.2
MT_ON	0 to 20 ns	5.1	4.6	5.3	5.3	5.7	5.1	4.9	0.280	5.1	4.9
MT_OFF	0 to 20 ns	9.4	8.4	9.0	9.0	10.4	11.1	8.3	0.990	10.2	10.6
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	8.5	8.4	8.5	8.4	8.5	2.9 F	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.3	8.3	8.2	8.2	8.2	8.3	2.9 F	8.2	8.3
VBSUV+pa	7.5 to 9.7 V	8.6	8.5	8.6	8.5	8.6	8.5	8.6	8.6	8.6	8.6
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.513	0.449	0.439	0.528	0.361	0.551	5.6	0.513	0.538	0.549
IQCC1	0 to 340 uA	101.3	100.8	100.0	101.1	99.8	151.5	110.2	11366 F	99.3	98.5
IQBS1	0 to 230 uA	56.8	57.6	57.0	57.9	57.6	60.3	57.5	4027 F	56.9	55.6
D_IQDD1	0 to 3 uA	0.160	0.104	0.099	0.198	0.109	0.201	0.284	0.042	0.124	0.149
D_IQCC1	0 to 30 uA	0.125	0.375	0.250	0.313	0.500	0.188	0	2.1	0	0.438
D_IQBS1	0 to 20 uA	0.063	0.125	0.188	0.313	0.063	0.063	0.250	224.6 F	0.250	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	41 [F]	42	43	44 [F]	45	46 [F]	47	48	49 [F]	50
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.0	2.7	2.0	2.2	2.2	36.0	2.3	2.1	2.4	1.9
IQDD0	0 to 150 uA	0.413	0.531	0.349	0.391	0.254	0.447	0.546	2.3	0.529	0.568
IQCC0	0 to 1000 uA	11349 F	94.9	93.5	11349 F	92.1	11350 F	98.7	92.4	97.8	95.9
IQBS0	0 to 230 uA	493.5 F	74.9	73.5	74.8	72.9	76.8	79.1	75.1	78.4	77.3
IHIN0	0 to 1 uA	0.030	0.030	0.025	0.036	0.021	0.034	0.030	0.025	0.030	0.028
ILIN0	0 to 1 uA	0.032	0.029	0.026	0.035	0.022	0.036	0.029	0.026	0.029	0.028
ISD0	0 to 1 uA	0.036	0.024	0.026	0.032	0.027	0.031	0.026	0.029	0.024	0.029
IQDD1	0 to 150 uA	0.383	0.584	0.313	0.469	0.426	0.467	0.554	2.1	0.574	0.366
IQCC1	0 to 1000 uA	11364 F	103.3	101.6	11364 F	100.9	11365 F	107.1	100.8	105.9	103.8
IQBS1	0 to 230 uA	413.4 F	57.4	57.2	74.9	57.0	62.8	61.8	60.7	61.9	61.5
IHIN1	0 to 40 uA	24.2	25.0	24.3	23.9	24.1	24.2	24.7	22.6	24.2	23.7
ILIN1	0 to 40 uA	24.8	25.3	24.6	24.4	24.6	24.9	25.2	22.9	24.6	24.0
ISD1	0 to 40 uA	24.4	24.9	24.2	23.9	24.2	24.4	24.9	22.5	24.3	23.7
ILO+	2 to 5 A	6.1 F	2.8	2.8	5.0	2.9	5.3 F	2.8	2.9	2.8	2.8
ILO-	2 to 5 A	1.1 F	3.2	3.2	2.9	3.2	0.916 F	3.1	3.3	3.1	3.2
IHO+	2 to 5 A	0.799 F	2.6	2.6	3.8	2.6	3.1	2.5	2.7	0.968 F	2.6
IHO-	2 to 5 A	3.0	3.4	3.4	3.6	3.5	3.1	3.3	3.4	3.4	3.4
FN_15/15	1 to 1	0 F	1	1	0 F	1	0 F	1	1	1	1
VOH_LS	0 to 1.2 V	1.9 F	0.494	0.495	2.3 F	0.485	1.2	0.584	0.567	0.575	0.568
VOL_LS	-0.01 to 0.1 V	1.6 F	0	0	0.770 F	0	1.6 F	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	15.0 F	0.469	0.469	15.0 F	0.460	15.0 F	0.561	0.542	-0.001 F	0.543
Vth+HS	6 to 9.5 V	11.1 F	8.4	8.4	11.1 F	8.4	11.1 F	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	11.1 F	6.9	6.9	11.1 F	6.9	11.1 F	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	2.9 F	8.4	8.4	11.1 F	8.4	2.9 F	8.5	8.4	8.5	8.5
Vth-LS	6 to 9.5 V	2.9 F	6.8	6.8	11.1 F	6.9	2.9 F	6.9	6.9	6.9	7.0
Vth+SD	6 to 9.5 V	2.9 F	8.4	8.3	2.9 F	8.4	2.9 F	8.5	8.4	8.4	8.5
TON_LS	50 to 150 ns	-100180	119.7	119.4	26.2 F	117.1	1244 F	127.0	122.7	125.9	124.4
TOFF_LS	50 to 125 ns	1244 F	111.5	112.3	-100180	109.9	-100180	120.4	118.3	119.2	118.8
TR_LS	2 to 35 ns	-111160	10.2	8.1	3.3	12.6	-111160	15.4	15.3	9.7	15.8
TF_LS	2 to 25 ns	-111170	6.4	6.7	3.3	5.8	-111160	11.4	13.8	10.8	8.9
TON_HS	50 to 150 ns	1066 F	114.0	114.5	-100180	111.9	1163 F	121.1	116.0	120.7	118.1
TOFF_HS	50 to 125 ns	-100180	101.9	102.1	-100180	100.3	-100180	108.8	106.1	107.7	106.4
TR_HS	2 to 35 ns	3.3	10.4	10.8	3.3	10.7	3.3	10.5	10.3	10.8	10.5
TF_HS	2 to 25 ns	3.3	9.4	9.3	3.3	9.4	3.3	9.2	8.9	9.2	8.9
TSD_LS	50 to 140 ns	-100180	105.9	107.3	-100180	104.9	-100180	115.1	112.0	114.0	114.6
TSD_HS	50 to 140 ns	-100180	104.8	105.4	-100180	102.3	-100180	112.2	109.3	111.2	110.5
MT_ON	0 to 20 ns	101247	5.7	4.9	100207	5.2	81.5 F	5.9	6.7	5.2	6.3
MT_OFF	0 to 20 ns	101427	9.6	10.1	0.170	9.6	0.670	11.7	12.2	11.5	12.3
VCCUV+pa	7.4 to 9.6 V	11.1 F	8.5	8.5	11.1 F	8.5	11.1 F	8.5	8.4	8.5	8.5
VCCUV-pa	7 to 9.4 V	11.1 F	8.2	8.3	11.1 F	8.3	11.1 F	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	11.1 F	8.5	8.5	11.1 F	8.4	11.1 F	8.6	8.6	8.6	8.6
VBSUV-pa	7 to 9.4 V	11.1 F	8.3	8.3	11.1 F	8.1	11.1 F	8.3	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.386	0.545	0.514	0.386	0.357	0.531	0.561	2.2	0.535	0.583
IQCC1	0 to 340 uA	11367 F	102.8	101.8	11366 F	101.3	11367 F	106.9	101.3	105.3	104.1
IQBS1	0 to 230 uA	410.9 F	57.6	56.9	78.4	56.8	84.9	61.9	60.9	62.1	61.1
D_IQDD1	0 to 3 uA	0.004	0.039	0.201	0.083	0.069	0.064	0.006	0.060	0.039	0.216
D_IQCC1	0 to 30 uA	2.3	0.438	0.188	2.2	0.375	2.2	0.125	0.438	0.625	0.313
D_IQBS1	0 to 20 uA	2.5	0.188	0.313	3.6	0.188	22.1 F	0.188	0.188	0.188	0.375

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	51	52	53	54	55 [F]	56	57	58	59 [F]	60
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.8	2.5	2.0	2.3	2.3	2.1	2.3	2.5	2.5	2.3
IQDD0	0 to 150 uA	0.383	0.841	0.570	0.412	1.6	0.396	0.328	0.559	0.363	0.569
IQCC0	0 to 1000 uA	91.1	124.6	96.5	94.8	123.7	195.6	101.9	95.5	95.1	95.8
IQBS0	0 to 230 uA	74.6	81.0	80.0	76.6	74.2	75.2	78.9	78.6	5166 F	77.1
IHIN0	0 to 1 uA	0.028	0.027	0.031	0.027	1.2 F	0.023	0.024	0.028	0.026	0.030
ILIN0	0 to 1 uA	0.029	0.026	0.031	0.026	0.023	0.024	0.024	0.028	0.025	0.030
ISD0	0 to 1 uA	0.029	0.028	0.027	0.025	0.028	0.028	0.030	0.025	0.027	0.028
IQDD1	0 to 150 uA	0.429	10.0	0.592	0.564	5.6	4.1	2.9	0.453	0.515	0.536
IQCC1	0 to 1000 uA	99.0	131.5	104.6	102.8	132.5	186.4	109.6	103.2	103.2	104.0
IQBS1	0 to 230 uA	59.9	67.9	63.1	60.9	60.1	68.3	62.3	62.4	124.0	61.2
IHIN1	0 to 40 uA	22.6	24.2	24.3	23.5	24.7	23.5	25.1	23.4	23.7	23.6
ILIN1	0 to 40 uA	22.9	24.5	24.5	23.9	23.1	23.9	25.3	23.8	23.9	24.0
ISD1	0 to 40 uA	22.6	24.2	24.2	23.6	22.8	23.6	25.1	23.5	23.6	23.7
ILO+	2 to 5 A	2.9	2.8	2.8	2.8	2.9	2.8	2.8	2.9	2.8	2.8
ILO-	2 to 5 A	3.2	3.1	3.2	3.2	3.2	3.1	3.1	3.2	3.2	3.2
IHO+	2 to 5 A	2.7	2.6	2.6	2.6	2.7	2.6	2.5	2.6	2.6	2.6
IHO-	2 to 5 A	3.4	3.3	3.4	3.4	3.4	3.3	3.3	3.4	3.2	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.566	0.583	0.569	0.563	0.580	0.583	0.585	0.565	0.572	0.571
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0.002	0
VOH_HS	0 to 1.2 V	0.541	0.562	0.547	0.538	0.557	0.555	0.559	0.541	0.546	0.549
Vth+HS	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.5	8.4	8.5	8.5	8.4	8.4	8.5	8.5	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	7.0	6.9	6.9	6.9	7.0	7.0	7.0
Vth+SD	6 to 9.5 V	8.5	8.4	8.5	8.5	8.4	8.4	8.5	8.5	8.5	8.5
TON_LS	50 to 150 ns	122.3	126.5	123.9	123.7	123.1	126.2	127.8	120.5	124.9	125.3
TOFF_LS	50 to 125 ns	117.1	120.0	118.7	117.9	118.9	119.9	120.4	115.1	118.7	119.3
TR_LS	2 to 35 ns	15.1	15.4	15.5	15.3	15.3	15.8	15.5	15.6	15.9	15.8
TF_LS	2 to 25 ns	14.1	11.7	14.3	12.4	12.8	13.1	10.7	14.4	13.9	14.3
TON_HS	50 to 150 ns	115.0	119.7	117.5	117.1	116.8	120.3	121.5	114.1	118.7	118.9
TOFF_HS	50 to 125 ns	104.8	108.6	106.6	106.0	106.7	108.4	109.5	103.6	107.3	107.4
TR_HS	2 to 35 ns	10.5	10.4	10.5	10.1	10.5	10.8	10.8	10.6	10.6	10.7
TF_HS	2 to 25 ns	8.6	9.5	9.4	9.3	8.9	9.1	9.1	8.9	9.1	9.0
TSD_LS	50 to 140 ns	111.8	114.6	113.7	113.4	112.3	116.1	115.5	110.2	113.8	114.1
TSD_HS	50 to 140 ns	109.0	111.8	109.6	109.3	109.6	112.3	112.9	106.4	109.7	110.4
MT_ON	0 to 20 ns	7.4	6.8	6.5	6.7	6.3	5.9	6.4	6.4	6.2	6.4
MT_OFF	0 to 20 ns	12.3	11.4	12.1	12	12.2	11.5	10.9	11.4	11.4	12
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.3	8.2	8.2	8.2	8.2	8.2	8.2	8.3
VBSUV+pa	7.5 to 9.7 V	8.6	8.6	8.6	8.6	8.6	8.6	8.5	8.6	8.6	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.551	9.7	0.587	0.452	5.0	4.1	2.8	0.373	0.411	0.604
IQCC1	0 to 340 uA	98.9	131.7	104.5	102.8	132.6	186.6	110.0	102.9	103.1	103.9
IQBS1	0 to 230 uA	59.8	67.9	63.4	61.2	59.9	68.1	62.1	61.8	124.0	60.9
D_IQDD1	0 to 3 uA	0.122	0.321	0.005	0.113	0.544	0.041	0.160	0.080	0.104	0.068
D_IQCC1	0 to 30 uA	0.063	0.188	0.063	0.063	0.063	0.125	0.438	0.250	0.125	0.063
D_IQBS1	0 to 20 uA	0.188	0	0.250	0.250	0.250	0.250	0.188	0.563	0	0.250

* SN61 is A PASSING device, IQBS1 is < 1000μA limit as shown in Test PLAN (Appendix D)

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	61 [F] *	62	63	64	65	66	67	68	69 [F]	70
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.3	2.3	2.4	2.8	2.4	2.6	2.2	2.0	2.1	2.3
IQDD0	0 to 150 uA	0.383	0.606	0.532	0.466	0.487	0.379	0.539	0.183	0.573	0.546
IQCC0	0 to 1000 uA	108.9	93.9	134.9	96.3	92.1	144.6	93.4	94.8	97.3	99.1
IQBS0	0 to 230 uA	78.9	76.7	76.6	77.4	74.9	74.9	75.5	77.3	11352 F	80.4
IHIN0	0 to 1 uA	0.027	0.031	0.031	0.029	0.029	0.027	0.028	0.018	0.036	0.032
ILIN0	0 to 1 uA	0.026	0.031	0.031	0.028	0.029	0.026	0.029	0.018	0.036	0.031
ISD0	0 to 1 uA	0.025	0.030	0.029	0.025	0.027	0.029	0.028	0.016	0.037	0.027
IQDD1	0 to 150 uA	3.5	0.465	2.9	0.575	0.445	0.541	0.373	0.212	1.5	0.586
IQCC1	0 to 1000 uA	105.0	102.1	142.8	104.4	100.0	137.6	100.8	102.8	105.8	108.0
IQBS1	0 to 230 uA	387.5 F	61.8	61.1	61.4	60.1	61.3	65.7	61.4	11366 F	64.0
IHIN1	0 to 40 uA	23.2	23.2	23.6	23.9	22.7	22.8	22.6	23.8	24.5	24.5
ILIN1	0 to 40 uA	23.5	23.6	23.6	24.2	23.2	23.6	23.1	24.1	24.7	25.1
ISD1	0 to 40 uA	23.1	23.3	23.4	23.9	22.8	23.0	22.7	23.7	24.5	24.6
ILO+	2 to 5 A	2.8	2.9	2.9	2.8	2.9	2.8	2.8	2.8	2.8	2.9
ILO-	2 to 5 A	3.1	3.2	3.2	3.2	3.3	3.1	3.2	3.2	3.1	3.2
IHO+	2 to 5 A	2.6	2.7	2.6	2.6	2.7	2.6	2.6	2.6	2.5	2.7
IHO-	2 to 5 A	3.3	3.4	3.4	3.4	3.5	3.4	3.4	3.4	1.9 F	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	0 F	1
VOH_LS	0 to 1.2 V	0.585	0.568	0.582	0.569	0.568	0.583	0.571	0.577	0.565	0.583
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0.002	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0.028	0
VOH_HS	0 to 1.2 V	0.577	0.545	0.559	0.548	0.542	0.555	0.550	0.549	0.936	0.554
Vth+HS	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.4	8.4	8.4	8.5	8.4	8.5	8.4	8.5	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	6.9	6.9	7.0	6.9	7.0	6.9	6.9	6.9	7.0
Vth+SD	6 to 9.5 V	8.4	8.4	8.5	8.5	8.4	8.5	8.4	8.5	8.5	8.5
TON_LS	50 to 150 ns	125.3	121.9	123.9	123.7	122.0	122.6	124.6	124.1	128.5	118.1
TOFF_LS	50 to 125 ns	120.0	117.0	117.8	117.8	116.2	115.8	118.8	115.9	121.9	109.7
TR_LS	2 to 35 ns	12.4	14.9	15.2	15.2	14.9	14.5	15.6	15.4	8.8	15.2
TF_LS	2 to 25 ns	12.2	14.2	11.6	13.0	11.6	13.0	13.3	6.3	6.6	5.7
TON_HS	50 to 150 ns	119.8	115.1	117.4	117.2	115.3	114.8	118.5	117.6	-100180	111.6
TOFF_HS	50 to 125 ns	108.1	105.2	106.6	106.3	104.8	104.5	107.4	107.2	-100180	100.9
TR_HS	2 to 35 ns	10.6	10.2	10.7	10.4	10.5	10.2	10.3	10.6	3.3	10.7
TF_HS	2 to 25 ns	9.4	8.8	9.2	9.2	9.4	9.2	9.1	9.0	3.3	9.2
TSD_LS	50 to 140 ns	114.3	112.0	112.6	113.1	111.6	111.4	113.6	113.6	115.3	104.1
TSD_HS	50 to 140 ns	111.1	108.2	109.6	109.5	109.2	107.7	110.0	110.0	-100180	104.2
MT_ON	0 to 20 ns	5.6	6.8	6.5	6.4	6.7	7.8	6.1	6.6	100309	6.5
MT_OFF	0 to 20 ns	11.8	11.9	11.1	11.5	11.4	11.4	11.3	8.7	100305	8.8
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.6	8.6	8.5	8.6	8.4	8.6	8.6	8.6	8.6	8.6
VBSUV-pa	7 to 9.4 V	8.3	8.4	8.3	8.3	8.2	8.4	8.3	8.3	8.4	8.3
IQDD1	0 to 30 uA	3.3	0.594	2.8	0.492	0.468	0.323	0.459	0.529	1.5	0.549
IQCC1	0 to 340 uA	105.1	101.9	142.7	104.3	99.9	137.8	100.5	103.3	106.3	107.9
IQBS1	0 to 230 uA	387.6 F	61.4	61.3	61.5	59.9	60.9	65.5	62.0	11366 F	64.0
D_IQDD1	0 to 3 uA	0.135	0.129	0.084	0.083	0.023	0.218	0.086	0.318	0.011	0.037
D_IQCC1	0 to 30 uA	0.125	0.250	0.125	0.188	0.125	0.125	0.250	0.500	0.563	0.063
D_IQBS1	0 to 20 uA	0.125	0.313	0.125	0.125	0.250	0.313	0.188	0.625	0.375	0

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	71	72	73	74	75	76	77	78	79	80
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.5	1.7	2.2	1.8	2.9	2.8	2.7	2.5	2.2	2.8
IQDD0	0 to 150 uA	0.411	0.471	0.558	0.513	0.541	0.549	0.538	0.411	0.569	0.660
IQCC0	0 to 1000 uA	103.0	97.2	104.3	97.7	100.2	96.5	100.1	100.4	99.8	99.4
IQBS0	0 to 230 uA	80.4	81.6	78.9	78.4	81.8	79.2	80.4	80.9	81.3	80.3
IHIN0	0 to 1 uA	0.025	0.026	0.028	0.031	0.032	0.032	0.032	0.025	0.032	0.029
ILIN0	0 to 1 uA	0.025	0.027	0.030	0.031	0.031	0.032	0.031	0.025	0.031	0.028
ISD0	0 to 1 uA	0.032	0.032	0.033	0.028	0.025	0.026	0.025	0.033	0.027	0.027
IQDD1	0 to 150 uA	0.443	0.406	0.386	0.855	0.601	0.613	3.0	0.481	0.597	0.753
IQCC1	0 to 1000 uA	108.0	105.4	106.2	106.6	108.5	104.7	108.1	108.4	107.7	107.8
IQBS1	0 to 230 uA	63.4	65.4	65.9	62.0	64.3	63.5	63.4	63.8	63.9	63.3
IHIN1	0 to 40 uA	25.0	24.2	24.1	24.1	25.0	23.9	25.2	25.0	24.9	24.9
ILIN1	0 to 40 uA	25.4	24.7	24.6	24.7	25.6	24.4	25.3	25.4	25.0	25.3
ISD1	0 to 40 uA	25.1	24.3	24.1	24.3	25.1	24.0	25.1	25.1	24.7	24.9
ILO+	2 to 5 A	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
ILO-	2 to 5 A	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
IHO+	2 to 5 A	2.6	2.7	2.6	2.6	2.6	2.7	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.584	0.581	0.580	0.585	0.580	0.582	0.585	0.583	0.567	0.576
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.561	0.552	0.557	0.558	0.557	0.556	0.564	0.560	0.545	0.552
Vth+HS	6 to 9.5 V	8.5	8.6	8.5	8.5	8.5	8.6	8.5	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.1	7.0	7.0	7.0	7.1	7.0	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.5	8.5	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	7.0	6.9	7.0	6.9	7.0	6.9	6.9	6.9	6.9
Vth+SD	6 to 9.5 V	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
TON_LS	50 to 150 ns	121.2	113.0	117.8	117.5	119.7	115.0	118.2	117.9	115.8	120.6
TOFF_LS	50 to 125 ns	113.3	106.7	109.1	109.3	110.3	107.4	111.4	108.6	107.4	111.1
TR_LS	2 to 35 ns	7.6	15.2	8.2	7.5	8.3	15.3	8.3	7.7	7.9	8.6
TF_LS	2 to 25 ns	5.8	5.8	6.1	5.9	6.0	5.9	5.8	6.0	6.2	6.2
TON_HS	50 to 150 ns	116.5	106.9	113.2	112.7	114.5	108.4	115.0	113.5	112.1	115.3
TOFF_HS	50 to 125 ns	104.5	97.3	101.1	101.2	102.4	98.1	103.0	101.7	100.8	103.1
TR_HS	2 to 35 ns	10.6	10.8	10.6	11.0	10.9	10.8	10.7	10.9	11.0	10.7
TF_HS	2 to 25 ns	10.1	9.2	8.7	9.4	9.3	9.5	9.8	9.2	8.7	9.4
TSD_LS	50 to 140 ns	106.3	101.4	102.9	102.8	104.0	101.0	103.8	103.1	101.8	105.4
TSD_HS	50 to 140 ns	107.6	100.1	104.3	103.8	105.7	100.8	105.8	104.9	103.7	106.5
MT_ON	0 to 20 ns	4.7	6.1	4.6	4.8	5.1	6.5	3.2	4.4	3.7	5.3
MT_OFF	0 to 20 ns	8.8	9.4	8.0	8.0	7.9	9.3	8.5	6.9	6.5	8.0
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	8.5	8.3	8.5	8.5	8.5	8.4	8.5	8.4
VCCUV-pa	7 to 9.4 V	8.3	8.2	8.2	8.1	8.2	8.2	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
IQDD1	0 to 30 uA	0.364	0.429	0.492	0.890	0.571	0.473	2.9	0.389	0.569	0.649
IQCC1	0 to 340 uA	108.2	105.7	106.3	106.6	108.1	104.5	108.1	109.1	107.3	107.3
IQBS1	0 to 230 uA	63.5	65.6	65.7	62.3	64.5	63.6	63.6	63.6	64.3	63.3
D_IQDD1	0 to 3 uA	0.078	0.023	0.106	0.035	0.030	0.140	0.057	0.091	0.028	0.103
D_IQCC1	0 to 30 uA	0.188	0.313	0.063	0	0.375	0.188	0	0.625	0.438	0.500
D_IQBS1	0 to 20 uA	0.125	0.188	0.250	0.313	0.250	0.063	0.188	0.188	0.313	0.063

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	81	82	83 [F]	84 [F]	85	86	87	88	89	90
CONT_OPN	0 to 0	0	0	1 F	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.2	2.5	2.3	60.7 F	2.5	2.5	2.6	2.5	2.5	2.8
IQDD0	0 to 150 uA	0.598	0.410	0.039	0.574	0.437	0.397	0.535	0.501	0.544	0.540
IQCC0	0 to 1000 uA	106.8	105.4	97.3	97.1	118.1	101.8	121.6	103.0	120.4	100.8
IQBS0	0 to 230 uA	80.3	79.0	80.1	79.1	79.8	79.7	79.4	81.3	78.8	81.2
IHIN0	0 to 1 uA	0.033	0.026	0.025	0.033	0.029	0.027	0.033	0.031	0.028	0.031
ILIN0	0 to 1 uA	0.032	0.026	0.025	0.032	0.028	0.026	0.032	0.030	0.029	0.031
ISD0	0 to 1 uA	0.030	0.034	0.023	0.028	0.027	0.030	0.026	0.025	0.033	0.025
IQDD1	0 to 150 uA	2.4	0.492	0.033	0.603	13.5	0.571	0.611	8.2	0.398	0.610
IQCC1	0 to 1000 uA	112.1	119.4	92.8	105.0	116.6	110.0	132.2	109.4	126.9	109.3
IQBS1	0 to 230 uA	63.3	63.8	80.3	63.6	64.8	63.5	63.6	63.6	62.9	63.5
IHIN1	0 to 40 uA	25.0	24.6	119.4 F	23.9	25.1	24.5	24.3	25.4	24.8	25.2
ILIN1	0 to 40 uA	25.5	25.3	25.2	24.2	25.5	25.1	25.1	25.7	25.3	25.7
ISD1	0 to 40 uA	25.1	24.8	119.4 F	23.8	25.0	24.6	24.4	25.3	24.9	25.3
ILO+	2 to 5 A	2.8	2.8	0 F	2.8	2.8	2.8	2.8	2.8	2.8	2.8
ILO-	2 to 5 A	3.2	3.1	0 F	3.2	3.1	3.1	3.2	3.1	3.1	3.1
IHO+	2 to 5 A	2.6	2.6	0.006 F	0.114 F	2.6	2.6	2.7	2.5	2.6	2.6
IHO-	2 to 5 A	3.4	3.4	3.4	3.5	3.3	3.4	3.4	3.3	3.4	3.4
FN_15/15	1 to 1	1	1	0 F	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.581	0.584	0.575	0.576	0.577	0.585	0.582	0.576	0.584	0.582
VOL_LS	-0.01 to 0.1 V	0	0	1.6 F	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.555	0.554	15.0 F	-0.001 F	0.557	0.562	0.549	0.554	0.556	0.555
Vth+HS	6 to 9.5 V	8.5	8.5	11.1 F	8.6	8.5	8.5	8.6	8.5	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0	11.1 F	7.1	7.0	7.0	7.1	7.0	7.0	7.0
Vth+LS	6 to 9.5 V	8.5	8.5	2.9 F	8.5	8.5	8.4	8.5	8.5	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	7.0	2.9 F	7.0	6.9	6.9	7.0	6.9	7.0	6.9
Vth+SD	6 to 9.5 V	8.5	8.5	11.1 F	8.5	8.5	8.5	8.5	8.5	8.5	8.5
TON_LS	50 to 150 ns	121.1	120.1	-100180	115.3	121.5	118.9	118.1	122.7	120.1	120.3
TOFF_LS	50 to 125 ns	111.3	112.1	-100180	106.0	112.4	110.3	109.3	112.9	111.0	112.2
TR_LS	2 to 35 ns	8.0	15.0	3.3	8.4	8.1	8.5	14.9	8.1	15.1	8.9
TF_LS	2 to 25 ns	6.3	9.3	3.3	5.9	6.2	5.8	6.0	6.1	6.4	6.0
TON_HS	50 to 150 ns	115.7	113.1	-100180	117.4	116.4	113.7	111.1	117.5	112.9	114.7
TOFF_HS	50 to 125 ns	103.8	100.9	-100180	97.1	104.0	102.5	100.1	104.4	101.2	102.6
TR_HS	2 to 35 ns	10.7	10.5	3.3	31.8	10.7	10.6	10.6	10.9	10.6	10.8
TF_HS	2 to 25 ns	9.2	8.7	3.3	9.4	9.4	9.7	9.3	10.0	9.3	9.3
TSD_LS	50 to 140 ns	105.1	105.9	1005 F	100.8	107.3	104.2	103.5	107.2	106.6	104.7
TSD_HS	50 to 140 ns	106.7	103.8	-100180	99.7	107.2	105.2	102.5	108.2	103.9	105.8
MT_ON	0 to 20 ns	5.3	7.0	0.400	2.1	5.2	5.2	7.1	5.2	7.2	5.6
MT_OFF	0 to 20 ns	7.5	11.3	0.010	8.9	8.5	7.9	9.2	8.6	9.8	9.7
VCCUV+pa	7.4 to 9.6 V	8.5	8.5	11.1 F	8.5	8.5	8.4	8.4	8.4	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.3	11.1 F	8.3	8.2	8.2	8.2	8.2	8.1	8.2
VBSUV+pa	7.5 to 9.7 V	8.6	8.5	11.1 F	8.6	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.3	8.3	11.1 F	8.3	8.3	8.3	8.3	8.3	8.2	8.3
IQDD1	0 to 30 uA	2.4	0.391	0.033	0.585	13.4	0.438	0.574	8.0	0.443	0.546
IQCC1	0 to 340 uA	111.8	119.9	93.8	104.6	116.3	110.1	131.4	109.4	126.9	108.9
IQBS1	0 to 230 uA	63.1	63.8	80.6	63.3	64.9	63.4	64.0	63.6	62.9	63.8
D_IQDD1	0 to 3 uA	0.036	0.101	0	0.018	0.148	0.133	0.036	0.191	0.045	0.064
D_IQCC1	0 to 30 uA	0.313	0.438	0.938	0.375	0.250	0.125	0.750	0	0	0.438
D_IQBS1	0 to 20 uA	0.125	0.063	0.313	0.250	0.188	0.125	0.438	0.063	0	0.250

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7623
DATE : 1/31/00
Location: POST SEE WL800819

TESTS	LIMITS	91	92
CONT_OPN	0 to 0	0	0
DIOD_SHT	0 to 0	0	0
V_MAX	425 to 990 V	N/A	N/A
I_LEAK	-1 to 50 uA	2.5	3.0
IQDD0	0 to 150 uA	1.6	0.571
IQCC0	0 to 1000 uA	113.5	99.7
IQBS0	0 to 230 uA	80.3	81.4
IHIN0	0 to 1 uA	0.032	0.031
ILIN0	0 to 1 uA	0.032	0.031
ISD0	0 to 1 uA	0.031	0.025
IQDD1	0 to 150 uA	9.0	0.621
IQCC1	0 to 1000 uA	125.1	107.8
IQBS1	0 to 230 uA	65.6	64.3
IHIN1	0 to 40 uA	24.8	24.8
ILIN1	0 to 40 uA	25.2	25.1
ISD1	0 to 40 uA	24.8	24.7
ILO+	2 to 5 A	2.8	2.8
ILO-	2 to 5 A	3.1	3.2
IHO+	2 to 5 A	2.6	2.6
IHO-	2 to 5 A	3.3	3.4
FN_15/15	1 to 1	1	1
VOH_LS	0 to 1.2 V	0.581	0.571
VOL_LS	-0.01 to 0.1 V	0	0
VOL_HS	-0.01 to 0.1 V	0	0
VOH_HS	0 to 1.2 V	0.558	0.549
Vth+HS	6 to 9.5 V	8.5	8.5
Vth-HS	6 to 9.5 V	7.0	7.0
Vth+LS	6 to 9.5 V	8.5	8.5
Vth-LS	6 to 9.5 V	6.9	6.9
Vth+SD	6 to 9.5 V	8.5	8.5
TON_LS	50 to 150 ns	120.6	119.0
TOFF_LS	50 to 125 ns	112.0	111.4
TR_LS	2 to 35 ns	8.6	9.3
TF_LS	2 to 25 ns	5.8	6.0
TON_HS	50 to 150 ns	115.6	113.4
TOFF_HS	50 to 125 ns	103.9	102.7
TR_HS	2 to 35 ns	10.6	10.5
TF_HS	2 to 25 ns	9.3	9.5
TSD_LS	50 to 140 ns	105.9	104.1
TSD_HS	50 to 140 ns	107.3	105.2
MT_ON	0 to 20 ns	5.0	5.6
MT_OFF	0 to 20 ns	8.0	8.8
VCCUV+pa	7.4 to 9.6 V	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.2	8.3
IQDD1	0 to 30 uA	9.3	0.407
IQCC1	0 to 340 uA	125.1	107.2
IQBS1	0 to 230 uA	65.7	63.9
D_IQDD1	0 to 3 uA	0.253	0.214
D_IQCC1	0 to 30 uA	0.063	0.625
D_IQBS1	0 to 20 uA	0.063	0.313

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	1	2	3	4	5	6	7	8	9	10
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.7	2.1	1.7	2.2	2.0	1.9	2.1	2.2	1.8	1.8
IQDD0	0 to 150 uA	0.618	0.457	0.453	0.503	0.448	0.268	0.354	0.378	0.214	0.074
IQCC0	0 to 1000 uA	114.3	110.7	109.8	109.0	110.4	108.5	109.8	111.8	111.2	108.0
IQBS0	0 to 230 uA	83.0	81.3	80.8	80.6	82.6	81.4	81.0	82.2	80.7	81.2
IHIN0	0 to 1 uA	0.045	0.037	0.033	0.034	0.037	0.029	0.033	0.033	0.026	0.022
ILIN0	0 to 1 uA	0.045	0.036	0.035	0.035	0.036	0.029	0.032	0.033	0.026	0.022
ISD0	0 to 1 uA	0.042	0.033	0.036	0.034	0.031	0.033	0.032	0.029	0.025	0.021
IQDD1	0 to 150 uA	0.522	0.599	0.369	0.356	0.618	0.394	0.489	0.453	0.207	0.071
IQCC1	0 to 1000 uA	128.3	125.4	125.2	123.9	124.7	123.3	124.4	126.9	125.6	122.8
IQBS1	0 to 230 uA	53.1	51.6	51.9	51.9	53.6	52.4	51.6	52.4	50.4	52.3
IHIN1	0 to 70 uA	42.1	41.6	40.9	40.5	41	41	41.8	42	41.9	41.3
ILIN1	0 to 70 uA	42.6	42.6	41.8	41.5	41.8	41.7	42.2	42.8	42.6	41.6
ISD1	0 to 70 uA	42	41.7	41	40.7	40.9	40.9	41.7	42.1	41.8	41.1
ILO+	2 to 5 A	2.7	2.7	2.8	2.8	2.7	2.8	2.7	2.8	2.7	2.7
ILO-	2 to 5 A	3.2	3.2	3.2	3.3	3.2	3.3	3.2	3.3	3.2	3.2
IHO+	2 to 5 A	2.5	2.5	2.6	2.6	2.6	2.6	2.5	2.6	2.5	2.6
IHO-	2 to 5 A	3.5	3.4	3.5	3.5	3.5	3.5	3.4	3.5	3.5	3.5
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.312	0.309	0.300	0.302	0.298	0.299	0.311	0.306	0.310	0.301
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.290	0.286	0.277	0.275	0.272	0.276	0.286	0.286	0.289	0.278
Vth+HS	6 to 9.5 V	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8.0	7.9	7.9
Vth-HS	6 to 9.5 V	6.4	6.4	6.5	6.5	6.5	6.5	6.4	6.4	6.4	6.5
Vth+LS	6 to 9.5 V	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.5	6.4	6.4	6.4	6.4	6.4
Vth+SD	6 to 9.5 V	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
TON_LS	50 to 180 ns	142.6	142.7	139.9	136.6	136.1	138.6	144.3	141.6	145.0	140.5
TOFF_LS	50 to 150 ns	141.1	142.1	140.5	137.7	137.2	138.2	142.3	139.2	139.4	134.4
TR_LS	2 to 35 ns	14.9	15.0	15.7	15.0	15.7	14.9	15.1	15.4	15.1	15.5
TF_LS	2 to 25 ns	6.7	7.3	7.3	7.7	7.0	8.1	7.1	6.7	6.9	6.3
TON_HS	50 to 180 ns	139.9	137.5	135.4	131.9	132.4	132.1	138.6	138.0	140.6	134.3
TOFF_HS	50 to 150 ns	120.0	120.7	117.8	115.4	113.4	116.7	121.7	119.8	122.7	117.1
TR_HS	2 to 35 ns	18.8	18.9	18.7	19.1	18.5	18.8	19.1	18.8	19.0	19.0
TF_HS	2 to 25 ns	13.3	13.3	12.6	12.7	12.8	12.3	13.2	13.4	13.4	13.1
TSD_LS	50 to 180 ns	134.5	134.9	133.6	131.2	129.5	133.1	136.1	133.3	137.7	132.7
TSD_HS	50 to 180 ns	125.7	126.7	123.1	121.2	118.8	122.9	126.8	124.9	128.7	122.3
MT_ON	0 to 50 ns	2.7	5.2	4.5	4.8	3.7	6.6	5.7	3.6	4.4	6.2
MT_OFF	0 to 50 ns	21.2	21.3	22.7	22.3	23.8	21.5	20.6	19.4	16.7	17.3
VCCUV+pa	7.4 to 9.6 V	9.2	9.1	9.1	9.2	9.1	9.1	9.2	9.1	9.1	9.3
VCCUV-pa	7 to 9.4 V	8.9	8.8	8.9	8.9	8.8	8.9	8.9	8.9	8.9	9.0
VBSUV+pa	7.5 to 9.7 V	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
VBSUV-pa	7 to 9.4 V	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
IQDD1	0 to 30 uA	0.635	0.550	0.521	0.569	0.549	0.309	0.469	0.566	0.605	0.529
IQCC1	0 to 340 uA	128.4	125.3	125.5	124.1	124.6	124.0	124.6	127.4	127.0	124.5
IQBS1	0 to 230 uA	53.0	51.8	51.8	52.1	54.1	52.5	51.6	52.8	51.0	53.0
D_IQDD1	0 to 3 uA	0.113	0.049	0.152	0.213	0.069	0.085	0.020	0.113	0.398	0.458
D_IQCC1	0 to 30 uA	0.125	0.125	0.313	0.125	0.125	0.688	0.125	0.500	1.4	1.7
D_IQBS1	0 to 20 uA	0.125	0.188	0.063	0.125	0.563	0.125	0.063	0.375	0.563	0.750

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	11 [F]	12	13	14	15	16	17	18	19	20
CONT_OPN	0 to 0	255.0 F	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.9	2.0	1.3	1.6	1.9	1.4	2.4	2.6	2.6	2.1
IQDD0	0 to 150 uA	0.044	0.194	0.090	0.308	0.570	0.631	0.401	0.459	0.446	0.511
IQCC0	0 to 1000 uA	0.813	110.0	108.4	110.9	110.1	110.1	110.8	110.4	109.8	109.5
IQBS0	0 to 230 uA	0.938	80.8	80.6	81.3	80.9	81.5	80.9	81.0	81.6	81.0
IHIN0	0 to 1 uA	0	0.024	0.023	0.029	0.037	0.038	0.032	0.035	0.035	0.036
ILIN0	0 to 1 uA	0	0.024	0.023	0.029	0.037	0.039	0.032	0.035	0.034	0.036
ISD0	0 to 1 uA	0	0.024	0.022	0.027	0.036	0.038	0.038	0.032	0.032	0.031
IQDD1	0 to 150 uA	0.034	0.119	0.084	0.214	0.419	0.429	0.459	0.589	0.582	0.609
IQCC1	0 to 1000 uA	0.875	124.5	123.3	125.6	125.1	125.3	125.1	125.5	124.8	123.9
IQBS1	0 to 230 uA	0.750	50.7	51.4	51.9	51.0	52.0	51.8	51.4	52.8	51.3
IHIN1	0 to 70 uA	0.014	41.7	41.5	41.8	41.3	41.4	41.4	41.3	41.3	40.7
ILIN1	0 to 70 uA	0.014	42.5	42.4	42.3	41.9	41.8	42.4	42	41.9	41.6
ISD1	0 to 70 uA	0.014	41.7	41.6	41.6	41.4	41.3	41.5	41.3	41.4	40.8
ILO+	2 to 5 A	0 F	2.7	2.8	2.7	2.7	2.7	2.7	2.7	2.8	2.8
ILO-	2 to 5 A	0 F	3.2	3.2	3.3	3.2	3.2	3.2	3.2	3.2	3.2
IHO+	2 to 5 A	0 F	2.5	2.6	2.5	2.5	2.6	2.5	2.5	2.6	2.6
IHO-	2 to 5 A	-0.002 F	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
FN_15/15	1 to 1	0 F	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	12.9 F	0.309	0.306	0.306	0.304	0.301	0.309	0.302	0.299	0.299
VOL_LS	-0.01 to 0.1 V	0.040	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0.080	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	12.9 F	0.284	0.285	0.284	0.280	0.275	0.284	0.278	0.277	0.275
Vth+HS	6 to 9.5 V	11.1 F	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Vth-HS	6 to 9.5 V	11.1 F	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.5
Vth+LS	6 to 9.5 V	11.1 F	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Vth-LS	6 to 9.5 V	11.1 F	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+SD	6 to 9.5 V	2.9 F	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
TON_LS	50 to 180 ns	-100180	142.4	140.5	140.4	144.4	144.6	141.6	141.1	140.1	137.9
TOFF_LS	50 to 150 ns	-100180	136.2	134.9	135.4	142.9	144.2	142.2	141.4	140.3	139.6
TR_LS	2 to 35 ns	3.3	15.7	14.9	14.8	15.1	15.3	15.2	15.5	14.9	15.5
TF_LS	2 to 25 ns	3.3	7.2	6.3	7.2	6.7	7.0	6.7	7.5	7.3	7.8
TON_HS	50 to 180 ns	-100180	138.5	134.5	137.7	139.6	139.3	138.3	137.1	135.4	133.6
TOFF_HS	50 to 150 ns	-100180	120.2	118.1	118.8	121.6	120.9	120.1	118.9	118.0	116.9
TR_HS	2 to 35 ns	3.3	19.1	19.0	18.6	19.1	19.2	18.9	18.9	19.0	19.0
TF_HS	2 to 25 ns	3.3	13.5	14.2	13.9	13.1	12.9	13.1	13.0	13.0	12.9
TSD_LS	50 to 180 ns	-100180	135.4	133.0	133.4	137.8	137.1	134.8	134.3	133.5	132.2
TSD_HS	50 to 180 ns	-100180	125.5	123.5	123.8	128.1	127.2	125.3	125.6	123.8	122.4
MT_ON	0 to 50 ns	1.2	3.9	6.0	2.7	4.9	5.3	3.3	4.0	4.7	4.3
MT_OFF	0 to 50 ns	1.4	16.1	16.8	16.7	21.3	23.3	22.1	22.5	22.3	22.7
VCCUV+pa	7.4 to 9.6 V	2.9 F	9.1	9.2	9.1	9.1	9.1	9.1	9.1	9.2	9.1
VCCUV-pa	7 to 9.4 V	2.9 F	8.8	8.9	8.9	8.9	8.9	8.8	8.9	8.9	8.8
VBSUV+pa	7.5 to 9.7 V	2.9 F	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
VBSUV-pa	7 to 9.4 V	2.9 F	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.9
IQDD1	0 to 30 uA	0.034	0.068	0.106	0.611	0.489	0.531	0.375	0.507	0.436	0.587
IQCC1	0 to 340 uA	0.813	124.2	123.9	127.1	125.1	125.3	125.9	125.4	124.4	123.9
IQBS1	0 to 230 uA	0.688	50.4	51.5	52.2	50.9	51.4	51.7	51.5	52.8	51.8
D_IQDD1	0 to 3 uA	0	0.051	0.022	0.398	0.069	0.102	0.084	0.083	0.146	0.023
D_IQCC1	0 to 30 uA	0.063	0.313	0.688	1.5	0.063	0.063	0.750	0.063	0.375	0.063
D_IQBS1	0 to 20 uA	0.063	0.250	0.125	0.313	0.125	0.625	0.063	0.125	0.063	0.500

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	21	22	23	24	25	26 [F]	27	28	29	30
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.2	2.4	2.3	1.8	2.5	2.2	1.6	2.2	2.3	2.4
IQDD0	0 to 150 uA	0.568	0.561	0.507	0.438	0.550	0.383	0.624	0.629	0.365	0.388
IQCC0	0 to 1000 uA	110.3	110.4	116.1	113.0	115.5	114.4	115.2	111.3	112.0	113.2
IQBS0	0 to 230 uA	80.8	81.2	81.8	82.3	84.3	82.8	83.2	81.7	83.6	83.0
IHIN0	0 to 1 uA	0.038	0.037	0.037	0.032	0.038	0.033	0.038	0.037	0.035	0.032
ILIN0	0 to 1 uA	0.037	0.037	0.036	0.032	0.037	0.032	0.038	0.038	0.034	0.032
ISD0	0 to 1 uA	0.034	0.034	0.032	0.038	0.033	0.037	0.036	0.038	0.034	0.039
IQDD1	0 to 150 uA	0.591	0.594	7.9	0.458	0.611	0.539	0.443	0.418	0.603	0.508
IQCC1	0 to 1000 uA	124.2	125.1	131.6	127.9	130.1	132.3	130.5	126.3	126.9	128.4
IQBS1	0 to 230 uA	51.4	52.0	56.8	53.3	53.6	83.2	53.1	52.9	54.4	53.2
IHIN1	0 to 70 uA	41	40.9	42.1	41.6	42.5	42.2	42.3	40.7	41.3	42.1
ILIN1	0 to 70 uA	41.6	41.6	42.8	42.5	43.4	43	42.8	41.3	41.5	42.8
ISD1	0 to 70 uA	41	41	42.1	41.6	42.5	42.3	42.1	40.7	41.1	42.1
ILO+	2 to 5 A	2.7	2.8	2.7	2.7	2.7	2.7	2.8	2.7	2.8	2.7
ILO-	2 to 5 A	3.3	3.3	3.2	3.2	3.1	3.3	3.3	3.2	3.4	3.1
IHO+	2 to 5 A	2.6	2.6	2.5	2.5	2.5	-0.005 F	2.5	2.6	2.5	2.5
IHO-	2 to 5 A	3.5	3.5	3.4	3.5	3.4	3.5	3.5	3.5	3.5	3.5
FN_15/15	1 to 1	1	1	1	1	1	0 F	1	1	1	1
VOH_LS	0 to 1.2 V	0.307	0.299	0.314	0.302	0.306	0.301	0.303	0.301	0.297	0.306
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.283	0.275	0.292	0.280	0.284	15.0 F	0.277	0.278	0.278	0.282
Vth+HS	6 to 9.5 V	7.9	7.9	7.9	8.0	8.0	11.1 F	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.4	6.5	6.4	6.5	6.5	11.1 F	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	142.3	139.8	144.5	138.7	139.4	139.7	133.3	136.2	126.8	137.7
TOFF_LS	50 to 150 ns	142.7	140.1	144	138.4	137.6	137.7	134.1	136.2	128.1	137.1
TR_LS	2 to 35 ns	15.5	15.2	15.6	15.4	14.3	14.8	14.8	15.1	13.0	15.2
TF_LS	2 to 25 ns	7.4	7.7	6.8	7.0	6.7	7.1	6.7	6.9	6.9	6.5
TON_HS	50 to 180 ns	137.6	135.1	140.2	134.1	137.0	-100180	131.5	134.1	129.5	134.5
TOFF_HS	50 to 150 ns	120.1	117.7	122.6	116.8	118.8	-100180	115.1	115.9	112.1	117.4
TR_HS	2 to 35 ns	19.1	18.9	19.1	19.1	18.1	3.3	18.4	18.2	17.1	19.0
TF_HS	2 to 25 ns	12.8	12.9	13.4	12.9	13.6	3.3	13.4	13.4	13.4	13.5
TSD_LS	50 to 180 ns	135.6	133.4	136.8	131.8	130.8	131.0	127.2	129.2	121.2	130.4
TSD_HS	50 to 180 ns	125.5	122.6	127.9	122.1	124.1	-100180	120.0	120.3	116.4	121.9
MT_ON	0 to 50 ns	4.7	4.8	4.3	4.5	2.4	100320	1.8	2.1	2.7	3.2
MT_OFF	0 to 50 ns	22.6	22.4	21.5	21.6	18.8	100321	19	20.3	16	19.7
VCCUV+pa	7.4 to 9.6 V	9.1	9.1	9.1	8.4	8.5	11.1 F	8.4	8.5	8.4	8.4
VCCUV-pa	7 to 9.4 V	8.8	8.9	8.8	8.2	8.2	11.1 F	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	9.1	9.1	9.1	8.4	8.5	11.1 F	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.9	8.8	8.8	8.2	8.3	11.1 F	8.3	8.2	8.2	8.2
IQDD1	0 to 30 uA	0.617	0.601	7.4	0.398	0.591	0.399	0.589	0.587	0.504	0.396
IQCC1	0 to 340 uA	124.4	125.1	131.0	128.4	129.9	195.8	130.6	126.4	126.4	129.4
IQBS1	0 to 230 uA	51.3	52.1	57.3	52.9	53.4	83.0	53.1	52.8	54.1	53.1
D_IQDD1	0 to 3 uA	0.026	0.007	0.458	0.060	0.020	0.141	0.146	0.169	0.099	0.111
D_IQCC1	0 to 30 uA	0.188	0.063	0.563	0.500	0.188	63.5 F	0.063	0.063	0.438	0.938
D_IQBS1	0 to 20 uA	0.188	0.063	0.438	0.313	0.125	0.188	0.063	0.188	0.313	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	31	32	33	34	35	36	37	38	39	40
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.1	2.1	2.6	2.1	2.4	2.2	2.1	2.3	2.6	2.0
IQDD0	0 to 150 uA	0.406	0.507	0.421	0.458	0.378	0.552	0.393	0.391	0.393	0.572
IQCC0	0 to 1000 uA	109.8	114.8	111.9	116.8	114.3	111.6	113.3	114.2	114.4	112.1
IQBS0	0 to 230 uA	79.5	83.9	84.1	85.1	83.0	81.7	82.8	82.6	83.1	81.7
IHIN0	0 to 1 uA	0.033	0.033	0.035	0.037	0.033	0.038	0.034	0.034	0.033	0.038
ILIN0	0 to 1 uA	0.033	0.034	0.034	0.036	0.032	0.037	0.033	0.033	0.032	0.038
ISD0	0 to 1 uA	0.033	0.039	0.034	0.033	0.038	0.032	0.036	0.036	0.037	0.033
IQDD1	0 to 150 uA	0.581	0.398	0.584	0.584	0.539	0.626	0.554	0.549	0.544	0.609
IQCC1	0 to 1000 uA	124.0	129.6	126.0	131.8	129.0	126.9	128.4	129.1	128.9	127.3
IQBS1	0 to 230 uA	51.1	53.5	55.0	54.3	53.3	51.6	52.9	52.8	53.8	51.1
IHIN1	0 to 70 uA	40.2	42.5	41.1	43.1	42	41.5	41.7	42.2	41.6	41.8
ILIN1	0 to 70 uA	41	43.3	41.3	43.9	42.8	42.2	42.6	43	42.4	42.4
ISD1	0 to 70 uA	40.4	42.4	40.9	43.2	42	41.7	41.9	42.2	41.8	41.6
ILO+	2 to 5 A	2.7	2.7	2.9	2.7	2.7	2.7	2.8	2.7	2.8	2.7
ILO-	2 to 5 A	3.3	3.2	3.4	3.2	3.2	3.2	3.2	3.3	3.3	3.2
IHO+	2 to 5 A	2.5	2.5	2.6	2.5	2.6	2.5	2.6	2.6	2.5	2.5
IHO-	2 to 5 A	3.4	3.5	3.6	3.5	3.5	3.4	3.5	3.5	3.5	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.302	0.307	0.293	0.306	0.303	0.302	0.301	0.302	0.305	0.306
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.280	0.284	0.271	0.285	0.278	0.278	0.279	0.277	0.281	0.287
Vth+HS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.6	6.5	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	137.8	137.4	128.6	138.4	137.1	141.5	137.2	139.4	134.7	139.8
TOFF_LS	50 to 150 ns	137.7	136.6	129.4	136	136	140.9	136.6	137.7	134.4	139
TR_LS	2 to 35 ns	15.2	15.1	12.4	13.6	15.8	15.8	15.9	15.0	15.1	15.5
TF_LS	2 to 25 ns	6.9	6.6	6.7	6.8	6.8	6.7	7.1	6.4	6.5	6.9
TON_HS	50 to 180 ns	135.0	135.0	128.5	137.1	133.8	137.8	133.2	135.1	131.7	136.8
TOFF_HS	50 to 150 ns	118.0	117.1	112.1	117.6	116.5	120.8	116.8	117.9	114.7	120.2
TR_HS	2 to 35 ns	18.7	18.2	16.5	17.0	18.8	18.8	18.7	19.2	18.9	18.7
TF_HS	2 to 25 ns	13.1	13.1	14.2	14.3	13.2	13.2	13.5	13.6	12.9	13.4
TSD_LS	50 to 180 ns	130.8	129.9	122.4	129.5	130.7	134.8	130.3	131.4	127.5	132.2
TSD_HS	50 to 180 ns	124.1	121.7	116.5	123.1	121.4	125.9	121.8	123.4	119.3	125.0
MT_ON	0 to 50 ns	2.7	2.4	0.110	1.3	3.4	3.7	4.0	4.3	3.0	3.0
MT_OFF	0 to 50 ns	19.7	19.5	17.4	18.4	19.5	20.1	19.9	19.8	19.7	18.8
VCCUV+pa	7.4 to 9.6 V	8.4	8.4	8.4	8.4	8.4	8.5	8.5	8.4	8.4	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.1	8.2	8.1	8.2	8.2	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.4	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.3	8.2	8.2	8.2	8.3
IQDD1	0 to 30 uA	0.473	0.394	0.493	0.523	0.408	0.590	0.443	0.431	0.424	0.603
IQCC1	0 to 340 uA	124.2	129.7	125.9	131.5	129.3	126.9	128.6	129.5	129.1	127.1
IQBS1	0 to 230 uA	51.1	53.6	55.1	54.5	53.2	51.6	53.0	53.1	53.8	51.4
D_IQDD1	0 to 3 uA	0.108	0.004	0.091	0.061	0.131	0.036	0.111	0.118	0.120	0.007
D_IQCC1	0 to 30 uA	0.188	0.125	0.063	0.313	0.313	0.063	0.125	0.438	0.188	0.188
D_IQBS1	0 to 20 uA	0	0.125	0.063	0.188	0.063	0.063	0.125	0.313	0.063	0.313

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	41	42 [F]	43	44	45	46 [F]	47	48 [F]	49	50
CONT_OPN	0 to 0	0	0	0	0	0	16.0 F	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.5	2.3	2.2	1.8	2.5	2.4	2.6	2.7	1.9	2.0
IQDD0	0 to 150 uA	0.399	0.418	0.615	0.535	0.523	0.516	0.524	0.405	0.456	0.579
IQCC0	0 to 1000 uA	111.1	110.3	114.8	116.7	114.3	111.4	114.7	114.4	114.2	114.3
IQBS0	0 to 230 uA	81.2	11350 F	83.9	85.5	82.7	80.0	82.3	11350 F	81.7	82.6
IHIN0	0 to 1 uA	0.033	0.050	0.038	0.035	0.037	0.037	0.038	0.053	0.032	0.039
ILIN0	0 to 1 uA	0.032	0.050	0.038	0.036	0.037	0.037	0.037	0.053	0.033	0.038
ISD0	0 to 1 uA	0.036	0.057	0.036	0.039	0.032	0.031	0.032	0.055	0.039	0.035
IQDD1	0 to 150 uA	0.573	0.485	0.449	0.398	0.596	0.613	0.617	0.560	0.434	0.594
IQCC1	0 to 1000 uA	125.5	125.8	128.5	132.4	129.6	126.4	128.8	129.1	128.7	128.6
IQBS1	0 to 230 uA	52.9	11362 F	53.6	54.8	52.1	50.6	52.4	11362 F	51.9	52.2
IHIN1	0 to 70 uA	40.4	41.2	41.6	43.4	42.2	41.4	42.1	42.6	41.9	42.2
ILIN1	0 to 70 uA	41.2	41.8	42	44.2	42.9	42	43.1	43.4	43	43.1
ISD1	0 to 70 uA	40.5	41.2	41.5	43.3	42.1	41.3	42.1	42.7	42	42.3
ILO+	2 to 5 A	2.7	3.0	2.8	2.7	2.8	0 F	2.7	2.8	2.7	2.7
ILO-	2 to 5 A	3.2	2.7	3.3	3.2	3.2	0 F	3.2	2.5	3.1	3.2
IHO+	2 to 5 A	2.5	0.793 F	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5
IHO-	2 to 5 A	3.5	3.7	3.5	3.5	3.5	3.5	3.4	3.5	3.4	3.4
FN_15/15	1 to 1	1	0 F	1	1	1	0 F	1	1	1	1
VOH_LS	0 to 1.2 V	0.304	0.294	0.301	0.305	0.300	12.9 F	0.308	0.296	0.312	0.307
VOL_LS	-0.01 to 0.1 V	0	0.004	0	0	0	0.043	0	0.003	0	0
VOL_HS	-0.01 to 0.1 V	0	0.370 F	0	0	0	0	0	0.098	0	0
VOH_HS	0 to 1.2 V	0.280	3.9 F	0.279	0.285	0.279	0.282	0.281	0.271	0.286	0.287
Vth+HS	6 to 9.5 V	8.0	11.1 F	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.5	11.1 F	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	7.9	11.1 F	8.0	8.0	8.0	11.1 F	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.4	11.1 F	6.5	6.5	6.5	11.1 F	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	2.9 F	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	134.6	137.0	131.7	137.7	139.5	-100180	139.4	140.7	141.6	138.4
TOFF_LS	50 to 150 ns	134.6	136.7	131.9	136.1	139.4	-100180	137.3	139	138.8	137.2
TR_LS	2 to 35 ns	14.9	14.7	13.6	14.2	15.8	3.3	14.6	14.2	14.3	15.0
TF_LS	2 to 25 ns	6.5	7.5	6.9	6.7	6.8	3.3	7.3	7.3	7.8	7.6
TON_HS	50 to 180 ns	132.1	-100180	130.5	135.8	135.4	135.9	149.1	151.9	148.5	146.3
TOFF_HS	50 to 150 ns	115.1	-100180	114.0	116.7	118.1	118.8	118.8	121.9	120.7	119.0
TR_HS	2 to 35 ns	18.6	3.3	17.5	17.6	18.8	18.8	18.1	18.2	18.2	17.7
TF_HS	2 to 25 ns	13.2	3.3	13.3	13.9	13.5	13.0	14.5	13.1	14.2	14.2
TSD_LS	50 to 180 ns	127.6	129.9	125.5	129.2	132.3	-100180	130.5	131.3	132.9	131.0
TSD_HS	50 to 180 ns	119.4	-100180	118.2	122.2	123.8	123.9	124.2	127.3	126.0	124.2
MT_ON	0 to 50 ns	2.5	100317	1.2	1.9	4.1	100317	9.7	11.2	6.9	7.8
MT_OFF	0 to 50 ns	19.6	100320	18	19.4	21.3	100303	18.5	17.2	18.1	18.2
VCCUV+pa	7.4 to 9.6 V	8.2	11.1 F	8.4	8.4	8.4	8.4	8.0	8.4	8.4	8.5
VCCUV-pa	7 to 9.4 V	8.0	11.1 F	8.2	8.2	8.2	8.2	7.8	8.2	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	11.1 F	8.5	8.5	8.5	8.5	8.5	8.6	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.2	11.1 F	8.2	8.2	8.2	8.2	8.3	8.6	8.3	8.2
IQDD1	0 to 30 uA	0.464	0.390	0.608	0.469	0.610	0.565	0.534	0.459	0.377	0.589
IQCC1	0 to 340 uA	126.1	127.3	128.9	132.6	129.4	126.9	128.3	129.0	129.0	128.7
IQBS1	0 to 230 uA	52.6	11362 F	53.4	54.6	52.4	50.9	52.9	53.0	51.8	51.6
D_IQDD1	0 to 3 uA	0.109	0.095	0.159	0.071	0.014	0.048	0.083	0.101	0.058	0.005
D_IQCC1	0 to 30 uA	0.563	1.5	0.375	0.250	0.188	0.500	0.500	0.125	0.313	0.063
D_IQBS1	0 to 20 uA	0.313	0.500	0.125	0.188	0.375	0.375	0.500	11309 F	0.188	0.563

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	51	52	53	54	55	56	57	58	59	60
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.1	2.3	2.3	2.3	2.6	2.1	2.8	2.3	2.8	2.3
IQDD0	0 to 150 uA	0.603	0.616	0.604	0.550	0.386	0.593	0.457	0.595	0.520	0.600
IQCC0	0 to 1000 uA	113.2	114.5	249.4	113.6	113.9	114.5	113.2	114.4	112.6	114.3
IQBS0	0 to 230 uA	82.3	81.9	82.8	82.1	81.8	82.8	81.8	82.6	81.5	82.6
IHIN0	0 to 1 uA	0.039	0.039	0.040	0.038	0.034	0.039	0.037	0.039	0.038	0.039
ILIN0	0 to 1 uA	0.038	0.039	0.039	0.038	0.033	0.039	0.036	0.039	0.037	0.039
ISD0	0 to 1 uA	0.036	0.038	0.036	0.033	0.037	0.037	0.032	0.037	0.032	0.036
IQDD1	0 to 150 uA	0.552	0.438	0.572	0.628	0.557	0.497	0.609	0.518	0.623	0.578
IQCC1	0 to 1000 uA	127.0	128.8	189.3	128.1	128.3	129.3	127.9	128.5	127.0	128.7
IQBS1	0 to 230 uA	52.3	51.8	52.4	51.8	52.4	53.2	52.1	52.3	51.4	52.6
IHIN1	0 to 70 uA	41.3	42.1	42.3	42.1	42.3	42.2	41.7	42.1	41.7	42
ILIN1	0 to 70 uA	41.9	43.2	43.1	42.9	43.1	43.1	42.6	42.9	42.6	42.8
ISD1	0 to 70 uA	41.4	42.1	42.3	42.2	42.4	42.3	41.9	42.1	41.8	42
ILO+	2 to 5 A	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
ILO-	2 to 5 A	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
IHO+	2 to 5 A	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
IHO-	2 to 5 A	3.5	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.4	3.4
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.305	0.309	0.304	0.306	0.311	0.305	0.308	0.308	0.307	0.304
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.283	0.284	0.282	0.287	0.289	0.283	0.283	0.287	0.284	0.283
Vth+HS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	135.9	141.6	138.2	141.4	141.5	138.1	139.3	141.2	138.7	137.4
TOFF_LS	50 to 150 ns	136	139.7	138.1	139.3	139	136.7	138.1	139.7	137.5	137.3
TR_LS	2 to 35 ns	14.4	14.3	14.6	14.6	15.1	14.5	14.7	14.7	14.4	14.5
TF_LS	2 to 25 ns	7.6	7.8	7.3	7.6	7.9	7.9	7.4	7.9	8.0	8.0
TON_HS	50 to 180 ns	142.8	148.5	147.3	148.3	149.2	145.1	146.9	148.5	146.0	144.5
TOFF_HS	50 to 150 ns	117.5	120.9	119.2	120.8	121.3	118.5	119.8	121.0	119.6	118.5
TR_HS	2 to 35 ns	18.5	18.1	18.7	17.4	17.5	17.6	17.6	17.2	17.8	17.9
TF_HS	2 to 25 ns	13.9	13.6	14.1	14.0	13.9	13.7	13.9	14.3	13.7	13.3
TSD_LS	50 to 180 ns	129.0	133.1	130.9	132.9	132.8	130.5	131.5	132.7	131.0	130.5
TSD_HS	50 to 180 ns	123.0	126.3	124.5	125.9	126.4	124.3	125.0	126.9	124.5	123.1
MT_ON	0 to 50 ns	7.0	6.9	9.1	6.9	7.8	7.0	7.6	7.3	7.3	7.1
MT_OFF	0 to 50 ns	18.5	18.8	18.9	18.5	17.7	18.2	18.3	18.7	17.9	18.8
VCCUV+pa	7.4 to 9.6 V	8.4	8.5	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.5
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.0	8.2	8.1	8.2	8.2	8.1	8.2	8.2
VBSUV+pa	7.5 to 9.7 V	8.5	8.5	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5
VBSUV-pa	7 to 9.4 V	8.2	8.3	8.2	8.3	8.3	8.2	8.2	8.3	8.2	8.2
IQDD1	0 to 30 uA	0.604	0.608	0.604	0.561	0.469	0.569	0.555	0.591	0.554	0.599
IQCC1	0 to 340 uA	126.9	128.9	189.1	128.0	128.3	129.3	127.8	128.8	126.9	128.6
IQBS1	0 to 230 uA	52.3	51.2	52.4	51.8	52.4	52.6	52.1	52.1	51.6	52.2
D_IQDD1	0 to 3 uA	0.053	0.171	0.033	0.066	0.088	0.072	0.054	0.074	0.069	0.022
D_IQCC1	0 to 30 uA	0.125	0.125	0.250	0.125	0	0.063	0.125	0.250	0.125	0.125
D_IQBS1	0 to 20 uA	0.063	0.625	0.063	0.063	0	0.563	0	0.125	0.188	0.375

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	61	62 [F]	63	64	65	66	67 [F]	68	69	70 [F]
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.5	18.8	2.3	2.1	2.5	2.1	2.5	2.2	2.3	2.2
IQDD0	0 to 150 uA	0.570	0.392	0.431	0.588	0.359	0.468	0.418	0.403	0.384	0.517
IQCC0	0 to 1000 uA	114.3	114.0	113.9	114.3	113.8	112.2	113.9	105.0	103.4	102.4
IQBS0	0 to 230 uA	82.6	83.1	81.1	82.6	82.4	81.3	1282 F	75.8	75.0	11349 F
IHIN0	0 to 1 uA	0.039	0.033	0.032	0.039	0.033	0.036	0.032	0.034	0.030	0.044
ILIN0	0 to 1 uA	0.038	0.033	0.033	0.039	0.033	0.036	0.033	0.033	0.030	0.044
ISD0	0 to 1 uA	0.033	0.040	0.039	0.035	0.038	0.031	0.037	0.036	0.036	0.041
IQDD1	0 to 150 uA	0.629	0.498	0.456	0.599	0.527	0.565	0.392	0.575	0.451	0.603
IQCC1	0 to 1000 uA	128.9	128.6	128.1	128.7	128.1	126.7	128.3	119.9	118.6	118.2
IQBS1	0 to 230 uA	52.3	53.5	51.1	52.0	52.7	51.3	1282 F	47.0	46.4	11363 F
IHIN1	0 to 70 uA	42	42.5	42.4	42.1	42	41.7	42.1	40.8	41.3	40.8
ILIN1	0 to 70 uA	43	43.4	43.1	42.9	42.9	42.5	43.1	41.6	42	41
ISD1	0 to 70 uA	42	42.4	42.2	42.1	42	41.7	42.2	40.8	41.2	40.7
ILO+	2 to 5 A	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8
ILO-	2 to 5 A	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.3	3.4	3.4
IHO+	2 to 5 A	2.5	2.5	2.5	2.5	2.5	2.5	-0.005 F	2.6	2.6	1.9 F
IHO-	2 to 5 A	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.6	3.6	2.0
FN_15/15	1 to 1	1	1	1	1	1	1	0 F	1	1	0 F
VOH_LS	0 to 1.2 V	0.304	0.312	0.311	0.308	0.309	0.307	0.306	0.267	0.256	0.234
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0.001
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0.029
VOH_HS	0 to 1.2 V	0.283	0.288	0.288	0.283	0.287	0.284	15.0 F	0.242	0.234	4.6 F
Vth+HS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	11.1 F	7.9	7.8	7.9
Vth-HS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	11.1 F	6.4	6.4	6.5
Vth+LS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.8	7.8	7.9
Vth-LS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.4	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.9	7.9	7.9
TON_LS	50 to 180 ns	137.5	142.4	142.4	137.4	138.7	138.3	138.0	141.5	144.2	133.8
TOFF_LS	50 to 150 ns	136.5	139.9	139.8	137.1	137.4	138	136.4	142.4	143.4	138.7
TR_LS	2 to 35 ns	14.9	14.5	14.5	14.4	14.8	14.6	14.5	14.9	14.5	14.3
TF_LS	2 to 25 ns	7.7	7.7	7.9	7.8	6.9	7.9	7.3	7.9	8.0	7.2
TON_HS	50 to 180 ns	145.6	165.7	149.1	144.8	148.1	145.3	-100180	136.4	136.7	-100180
TOFF_HS	50 to 150 ns	118.1	121.5	121.3	119.0	119.1	119.5	-100180	119.1	119.7	-100180
TR_HS	2 to 35 ns	18.8	19.0	18.4	17.9	18.8	18.1	3.3	19.1	18.9	3.3
TF_HS	2 to 25 ns	13.5	13.5	13.9	13.6	14.5	13.5	3.3	12.4	12.3	3.3
TSD_LS	50 to 180 ns	130.0	133.3	133.9	129.9	131.3	131.4	129.9	136.1	136.1	130.8
TSD_HS	50 to 180 ns	123.9	126.5	127.4	123.8	124.6	124.3	-100180	124.9	124.8	-100180
MT_ON	0 to 50 ns	8.1	23.3	6.7	7.4	9.5	7.1	100318	5.1	7.6	100314
MT_OFF	0 to 50 ns	18.4	18.3	18.5	18.1	18.3	18.6	100320	23.2	23.8	100322
VCCUV+pa	7.4 to 9.6 V	8.5	8.4	8.4	8.4	8.4	8.5	11.1 F	9.1	9.1	9.1
VCCUV-pa	7 to 9.4 V	8.2	8.2	8.2	8.2	8.2	8.2	11.1 F	8.8	8.8	8.9
VBSUV+pa	7.5 to 9.7 V	8.5	11.1 F	8.5	8.5	8.4	8.5	11.1 F	9.2	9.1	9.3
VBSUV-pa	7 to 9.4 V	8.2	11.1 F	8.3	8.2	8.2	8.3	11.1 F	8.9	8.8	9.3
IQDD1	0 to 30 uA	0.601	0.391	0.397	0.604	0.400	0.578	0.485	0.459	0.389	0.606
IQCC1	0 to 340 uA	128.8	129.3	128.6	128.4	128.7	126.7	128.9	120.2	119.1	118.5
IQBS1	0 to 230 uA	52.3	53.6	51.2	52.2	52.6	51.3	1281 F	47.1	46.0	11363 F
D_IQDD1	0 to 3 uA	0.028	0.107	0.059	0.006	0.127	0.013	0.093	0.116	0.063	0.004
D_IQCC1	0 to 30 uA	0.188	0.750	0.438	0.313	0.625	0	0.688	0.250	0.438	0.313
D_IQBS1	0 to 20 uA	0	0.063	0.125	0.188	0.125	0	0.625	0.125	0.375	0.188

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	71	72	73	74	75	76	77	78	79	80
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.2	1.9	2.8	2.4	2.5	2.4	2.7	1.9	1.9	2.3
IQDD0	0 to 150 uA	0.560	0.606	0.485	0.566	0.533	0.412	0.443	0.358	0.561	0.451
IQCC0	0 to 1000 uA	105.5	104.3	103.9	105.1	104.3	103.0	103.9	105.0	105.1	103.4
IQBS0	0 to 230 uA	76.6	75.7	75.9	76.8	75.9	74.6	75.3	76.3	76.3	76.9
IHIN0	0 to 1 uA	0.034	0.038	0.037	0.038	0.035	0.031	0.034	0.031	0.034	0.036
ILIN0	0 to 1 uA	0.036	0.038	0.036	0.038	0.035	0.030	0.034	0.032	0.035	0.035
ISD0	0 to 1 uA	0.038	0.037	0.031	0.033	0.030	0.035	0.031	0.038	0.038	0.031
IQDD1	0 to 150 uA	0.404	0.434	0.611	0.625	0.579	0.417	0.569	0.455	0.397	0.619
IQCC1	0 to 1000 uA	120.1	118.8	118.3	119.6	118.6	117.3	119.1	119.3	119.0	117.4
IQBS1	0 to 230 uA	47.3	46.9	46.9	46.8	47.1	45.9	46.4	47.9	47.9	47.9
IHIN1	0 to 70 uA	40.8	41	40.9	41.1	40.5	40.7	41	40.7	40.5	40.1
ILIN1	0 to 70 uA	41.4	41.4	41.3	41.9	40.9	41.1	41.9	41.6	41.2	40.3
ISD1	0 to 70 uA	40.8	40.9	40.8	41.2	40.3	40.5	41.1	40.9	40.4	39.9
ILO+	2 to 5 A	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.9	2.8	2.9
ILO-	2 to 5 A	3.3	3.3	3.3	3.3	3.4	3.3	3.3	3.4	3.4	3.5
IHO+	2 to 5 A	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	3.6	3.6	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.7
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.265	0.256	0.262	0.261	0.254	0.259	0.259	0.264	0.261	0.256
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.244	0.229	0.235	0.238	0.232	0.235	0.232	0.239	0.237	0.235
Vth+HS	6 to 9.5 V	7.8	7.9	7.9	7.8	7.8	7.9	7.8	7.9	7.8	7.9
Vth-HS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+LS	6 to 9.5 V	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.9
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+SD	6 to 9.5 V	7.9	7.9	7.9	7.8	7.8	7.9	7.8	7.9	7.9	7.9
TON_LS	50 to 180 ns	143.4	143.6	142.6	139.0	138.2	144.8	138.4	139.8	140.7	133.7
TOFF_LS	50 to 150 ns	143.8	143.6	142.6	141.5	140.4	144.2	140.2	140.8	141.9	135.9
TR_LS	2 to 35 ns	15.1	14.4	15.0	15.0	15.2	15.3	14.9	14.9	15.0	14.5
TF_LS	2 to 25 ns	8.0	7.5	7.9	7.9	7.6	7.6	7.9	8.1	7.7	6.8
TON_HS	50 to 180 ns	136.8	135.3	136.2	134.1	135.0	137.4	132.5	135.0	136.4	131.1
TOFF_HS	50 to 150 ns	119.9	119.2	119.4	117.6	116.5	120.7	116.5	117.8	119.0	114.7
TR_HS	2 to 35 ns	18.6	18.7	19.1	19.0	18.8	18.9	19.2	18.9	19.2	18.0
TF_HS	2 to 25 ns	12.7	12.5	12.7	12.8	12.6	12.8	12.5	12.5	12.9	13.6
TSD_LS	50 to 180 ns	136.7	136.7	135.9	134.4	133.6	137.7	132.8	134.5	135.7	129.2
TSD_HS	50 to 180 ns	125.1	124.0	124.5	123.0	120.8	125.7	121.6	123.3	124.0	119.4
MT_ON	0 to 50 ns	6.5	8.3	6.5	4.9	3.2	7.5	5.9	4.9	4.3	2.6
MT_OFF	0 to 50 ns	23.9	24.4	23.2	23.9	23.9	23.5	23.7	23.1	22.9	21.2
VCCUV+pa	7.4 to 9.6 V	9.1	9.1	9.1	9.1	9.1	9.2	9.1	9.1	9.1	9.1
VCCUV-pa	7 to 9.4 V	8.8	8.9	8.8	8.8	8.9	8.9	8.8	8.8	8.8	8.8
VBSUV+pa	7.5 to 9.7 V	9.1	9.1	9.1	9.3	9.4	9.1	9.3	9.1	9.1	9.2
VBSUV-pa	7 to 9.4 V	8.9	8.8	8.9	9.0	9.1	8.9	9.0	8.8	8.8	8.9
IQDD1	0 to 30 uA	0.519	0.601	0.540	0.583	0.563	0.396	0.565	0.425	0.540	0.534
IQCC1	0 to 340 uA	120.0	118.9	118.0	119.5	118.5	118.1	119.1	120.0	119.5	117.3
IQBS1	0 to 230 uA	47.3	46.4	47.0	46.9	47.2	45.9	46.1	47.8	47.5	48.3
D_IQDD1	0 to 3 uA	0.114	0.167	0.071	0.043	0.016	0.021	0.004	0.030	0.143	0.086
D_IQCC1	0 to 30 uA	0.125	0.188	0.250	0.063	0.125	0.875	0	0.688	0.500	0.188
D_IQBS1	0 to 20 uA	0.063	0.500	0.063	0.125	0.063	0	0.250	0.188	0.375	0.375

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7627
DATE : 1/20/00
Location: PRE SEE WL800715

TESTS	LIMITS	81	82	83	84	85	86	87
CONT_OPN	0 to 0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.0	2.1	1.8	2.4	2.2	2.5	2.0
IQDD0	0 to 150 uA	0.348	0.414	0.614	0.431	0.435	0.528	0.573
IQCC0	0 to 1000 uA	102.9	105.5	105.9	104.6	104.2	101.4	103.5
IQBS0	0 to 230 uA	76.6	76.1	76.3	75.2	75.2	75.0	74.0
IHIN0	0 to 1 uA	0.032	0.032	0.039	0.034	0.033	0.036	0.034
ILIN0	0 to 1 uA	0.032	0.032	0.039	0.034	0.033	0.036	0.036
ISD0	0 to 1 uA	0.037	0.039	0.036	0.032	0.030	0.031	0.038
IQDD1	0 to 150 uA	0.539	0.467	0.536	0.558	0.519	0.616	0.393
IQCC1	0 to 1000 uA	117.6	120.8	121.0	119.0	118.6	115.6	118.1
IQBS1	0 to 230 uA	47.9	47.1	47.3	47.0	45.9	45.7	45.3
IHIN1	0 to 70 uA	40.9	41.2	41	40.4	40.6	40.4	39.9
ILIN1	0 to 70 uA	41.3	41.8	41.4	41.3	41.6	40.9	41.3
ISD1	0 to 70 uA	40.7	41.2	40.8	40.6	40.9	40.3	40.3
ILO+	2 to 5 A	2.9	2.9	2.8	2.8	2.8	2.8	2.8
ILO-	2 to 5 A	3.4	3.3	3.3	3.3	3.3	3.3	3.3
IHO+	2 to 5 A	2.6	2.6	2.5	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	3.6	3.6	3.5	3.6	3.6	3.5	3.6
FN_15/15	1 to 1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.259	0.262	0.263	0.256	0.260	0.252	0.257
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.234	0.238	0.240	0.234	0.237	0.231	0.233
Vth+HS	6 to 9.5 V	7.8	7.8	7.9	7.8	7.8	7.9	7.9
Vth-HS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+LS	6 to 9.5 V	7.8	7.8	7.9	7.8	7.8	7.9	7.9
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+SD	6 to 9.5 V	7.8	7.9	7.9	7.8	7.8	7.9	7.9
TON_LS	50 to 180 ns	140.5	140.9	143.3	138.9	142.6	141.8	145.6
TOFF_LS	50 to 150 ns	140.9	142.1	144.1	140.1	142.6	143.8	145.8
TR_LS	2 to 35 ns	14.6	14.8	14.8	15.1	15.3	15.6	15.0
TF_LS	2 to 25 ns	7.6	7.6	7.8	7.8	7.9	7.7	8.0
TON_HS	50 to 180 ns	132.3	135.7	137.9	134.6	135.8	137.8	138.6
TOFF_HS	50 to 150 ns	117.1	119.2	120.1	116.6	119.2	119.9	121.8
TR_HS	2 to 35 ns	18.6	19.2	19.2	18.9	18.9	18.7	18.7
TF_HS	2 to 25 ns	12.6	12.7	12.7	13.1	12.8	13.0	12.5
TSD_LS	50 to 180 ns	134.0	135.8	137.1	133.2	136.1	136.8	138.9
TSD_HS	50 to 180 ns	122.8	125.4	125.6	122.4	124.0	126.5	126.8
MT_ON	0 to 50 ns	8.2	5.2	5.4	4.3	6.8	4.0	7.1
MT_OFF	0 to 50 ns	23.8	22.8	24	23.5	23.4	23.9	24
VCCUV+pa	7.4 to 9.6 V	9.2	9.1	9.1	9.1	9.1	9.1	9.1
VCCUV-pa	7 to 9.4 V	9.0	8.8	8.8	8.8	8.8	8.8	8.9
VBSUV+pa	7.5 to 9.7 V	9.1	9.3	9.2	9.3	9.2	9.3	9.1
VBSUV-pa	7 to 9.4 V	8.8	9.0	8.9	9.0	8.9	9.0	8.8
IQDD1	0 to 30 uA	0.406	0.415	0.629	0.520	0.563	0.560	0.507
IQCC1	0 to 340 uA	118.0	121.4	120.4	119.0	118.9	115.8	118.3
IQBS1	0 to 230 uA	47.7	46.9	47.1	47.1	46.8	46.4	45.4
D_IQDD1	0 to 3 uA	0.133	0.052	0.093	0.038	0.044	0.056	0.114
D_IQCC1	0 to 30 uA	0.375	0.563	0.563	0	0.250	0.188	0.188
D_IQBS1	0 to 20 uA	0.250	0.125	0.188	0.063	0.875	0.688	0.063

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	1	2	3	4	5	6	7	8	9	10 [F]
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.3	2.3	3.0	2.6	2.6	2.9	3.0	2.3	2.1	2.4
IQDD0	0 to 150 uA	0.580	0.405	0.490	0.453	0.463	0.431	0.488	0.414	0.654	0.480
IQCC0	0 to 1000 uA	114.3	111.0	110.0	109.1	110.6	109.4	111.1	112.3	113.1	110.2
IQBS0	0 to 230 uA	83.0	81.2	80.8	80.3	82.2	81.6	81.1	82.6	81.4	11341 F
IHIN0	0 to 1 uA	0.045	0.034	0.036	0.035	0.036	0.035	0.037	0.033	0.038	0.047
ILIN0	0 to 1 uA	0.044	0.033	0.035	0.034	0.035	0.034	0.036	0.033	0.039	0.046
ISD0	0 to 1 uA	0.039	0.036	0.034	0.035	0.034	0.036	0.033	0.040	0.038	0.045
IQDD1	0 to 150 uA	0.648	0.569	0.639	0.608	0.613	0.601	0.614	0.529	0.441	0.625
IQCC1	0 to 1000 uA	128.2	125.4	125.1	124.0	124.6	123.8	125.1	127.3	127.3	125.2
IQBS1	0 to 230 uA	53.1	52.1	51.9	52.2	54.1	52.9	51.8	53.4	51.4	11355 F
IHIN1	0 to 70 uA	41.8	41.2	40.4	40.1	40.6	40.5	41.6	41.6	41.4	41.2
ILIN1	0 to 70 uA	42.3	42.2	41.3	41	41.3	41.2	42.1	42.4	42.1	41.5
ISD1	0 to 70 uA	41.7	41.3	40.5	40.3	40.5	40.4	41.5	41.7	41.4	41
ILO+	2 to 5 A	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
ILO-	2 to 5 A	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.3	3.3	3.3
IHO+	2 to 5 A	2.6	2.5	2.6	2.6	2.6	2.6	2.5	2.6	2.5	2.6
IHO-	2 to 5 A	3.5	3.5	3.5	3.6	3.6	3.5	3.5	3.5	3.5	1.5 F
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	0 F
VOH_LS	0 to 1.2 V	0.316	0.316	0.308	0.308	0.308	0.306	0.311	0.313	0.313	0.297
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0.002
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0.019
VOH_HS	0 to 1.2 V	0.292	0.292	0.284	0.283	0.275	0.284	0.287	0.291	0.291	0.279
Vth+HS	6 to 9.5 V	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8.0	7.9	7.9
Vth-HS	6 to 9.5 V	6.4	6.4	6.5	6.5	6.5	6.5	6.4	6.5	6.4	6.5
Vth+LS	6 to 9.5 V	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.5	6.5	6.4	6.4	6.4	6.4	6.4
Vth+SD	6 to 9.5 V	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
TON_LS	50 to 180 ns	141.8	141.0	138.3	135.3	135.2	136.5	143.1	140.6	143.6	141.3
TOFF_LS	50 to 150 ns	142.4	143.1	141.8	139.1	138.7	139.9	144.6	141.8	146.1	140.7
TR_LS	2 to 35 ns	10.1	15.7	15.6	16.0	13.2	15.2	15.2	10.6	15.7	9.1
TF_LS	2 to 25 ns	6.4	6.0	6.0	6.2	6.1	6.0	5.9	6.6	6.3	6.8
TON_HS	50 to 180 ns	137.2	135.1	132.3	129.3	129.7	129.4	136.6	135.3	138.0	-100180
TOFF_HS	50 to 150 ns	115.9	116.4	114.6	112.0	111.0	113.8	117.3	115.1	118.4	-100180
TR_HS	2 to 35 ns	10.3	10.3	10.4	10.3	10.5	10.1	10.3	10.5	10.6	3.3
TF_HS	2 to 25 ns	9.1	9.1	9.1	9.2	9.2	8.9	9.4	9.5	9.4	3.3
TSD_LS	50 to 180 ns	133.8	133.4	131.8	128.7	128.7	129.5	134.5	132.9	136.4	132.9
TSD_HS	50 to 180 ns	119.1	118.5	116.7	113.9	112.6	116.3	119.8	118.1	121.0	-100180
MT_ON	0 to 50 ns	4.6	6.0	6.0	6.0	5.5	7.1	6.5	5.3	5.6	100322
MT_OFF	0 to 50 ns	26.5	26.7	27.2	27.1	27.7	26.1	27.3	26.7	27.7	100323
VCCUV+pa	7.4 to 9.6 V	9.2	9.2	9.2	9.3	9.1	9.2	9.2	9.2	9.2	9.4
VCCUV-pa	7 to 9.4 V	9.0	8.9	8.9	9.0	8.9	8.9	9.0	9.0	9.0	9.1
VBSUV+pa	7.5 to 9.7 V	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
VBSUV-pa	7 to 9.4 V	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
IQDD1	0 to 30 uA	0.610	0.454	0.584	0.521	0.534	0.537	0.576	0.428	0.592	0.560
IQCC1	0 to 340 uA	128.0	125.4	124.9	123.9	124.4	123.7	125.0	127.6	127.1	125.3
IQBS1	0 to 230 uA	53.4	52.1	52.1	52.6	54.1	52.9	51.8	53.1	51.1	11355 F
D_IQDD1	0 to 3 uA	0.038	0.114	0.055	0.088	0.079	0.064	0.038	0.101	0.151	0.065
D_IQCC1	0 to 30 uA	0.188	0	0.188	0.125	0.125	0.063	0.063	0.375	0.188	0.063
D_IQBS1	0 to 20 uA	0.313	0.063	0.250	0.438	0.063	0	0.063	0.250	0.313	0.313

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	11 [F]	12	13	14 [F]	15	16 [F]	17	18	19	20
CONT_OPN	0 to 0	255.0 F	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.7	2.3	2.3	2.5	2.4	2.7	2.7	2.5	2.6	2.7
IQDD0	0 to 150 uA	0.048	0.659	0.417	0.449	0.666	0.632	0.526	0.416	0.614	0.426
IQCC0	0 to 1000 uA	1.3	112.3	110.2	111.6	110.7	110.8	111.5	110.9	110.3	109.3
IQBS0	0 to 230 uA	1.1	81.6	81.7	11341 F	81.1	11341 F	81.1	81.0	82.4	80.7
IHIN0	0 to 1 uA	0	0.040	0.033	0.046	0.039	0.050	0.038	0.033	0.036	0.032
ILIN0	0 to 1 uA	0	0.040	0.033	0.044	0.039	0.049	0.037	0.033	0.037	0.032
ISD0	0 to 1 uA	0	0.038	0.039	0.045	0.038	0.046	0.033	0.038	0.039	0.039
IQDD1	0 to 150 uA	0.033	0.530	0.551	0.613	0.456	0.671	0.646	0.578	0.421	0.536
IQCC1	0 to 1000 uA	1	126.8	125.4	126.6	125.6	125.4	125.7	125.6	125.6	123.6
IQBS1	0 to 230 uA	0.750	51.9	52.7	11356 F	51.3	11355 F	51.7	51.8	53.4	52.1
IHIN1	0 to 70 uA	0.014	41.1	40.9	41.5	41	41.2	40.9	40.9	40.8	40.3
ILIN1	0 to 70 uA	0.012	41.9	41.8	42.1	41.6	41.6	41.9	41.6	41.5	41.2
ISD1	0 to 70 uA	0.014	41.1	41	41.4	41.1	41.1	41	40.9	40.9	40.5
ILO+	2 to 5 A	-0.003 F	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
ILO-	2 to 5 A	-0.002 F	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
IHO+	2 to 5 A	-0.002 F	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	0 F	3.5	3.5	1.8 F	3.5	1.6 F	3.5	3.5	3.5	3.5
FN_15/15	1 to 1	0 F	1	1	0 F	1	0 F	1	1	1	1
VOH_LS	0 to 1.2 V	12.9 F	0.312	0.313	0.301	0.306	0.300	0.310	0.307	0.306	0.306
VOL_LS	-0.01 to 0.1 V	0.079	0	0	0.003	0	0.002	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0.225 F	0	0	0.071	0	0.042	0	0	0	0
VOH_HS	0 to 1.2 V	11.8 F	0.289	0.290	0.674	0.282	0.446	0.288	0.282	0.281	0.282
Vth+HS	6 to 9.5 V	11.1 F	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Vth-HS	6 to 9.5 V	11.1 F	6.4	6.4	6.4	6.4	6.5	6.4	6.4	6.4	6.5
Vth+LS	6 to 9.5 V	11.1 F	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Vth-LS	6 to 9.5 V	11.1 F	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+SD	6 to 9.5 V	2.9 F	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
TON_LS	50 to 180 ns	-100180	140.5	138.0	140.6	143.1	145.8	140.2	140.0	138.5	136.9
TOFF_LS	50 to 150 ns	-100180	143.9	141.1	140.5	146.1	144.3	143.6	142.8	142.1	141.2
TR_LS	2 to 35 ns	3.3	14.8	15.6	8.8	15.6	9.2	15.2	15.8	16.0	15.9
TF_LS	2 to 25 ns	3.3	5.9	5.7	6.5	6.3	6.6	6.3	6.0	6.0	6.2
TON_HS	50 to 180 ns	-100180	135.5	131.3	-100180	137.8	-100180	135.1	134.2	132.7	131.1
TOFF_HS	50 to 150 ns	-100180	116.1	114.2	-100180	118.2	-100180	116.1	115.4	114.8	114.1
TR_HS	2 to 35 ns	3.3	10.8	10.4	3.3	10.5	3.3	10.6	10.6	10.4	10.4
TF_HS	2 to 25 ns	3.3	9.3	9.1	3.3	9.3	3.3	9.3	9.1	8.9	8.9
TSD_LS	50 to 180 ns	-100180	133.1	130.6	132.4	135.8	136.7	133.0	132.4	131.7	130.4
TSD_HS	50 to 180 ns	-100180	118.0	116.2	-100180	120.6	-100180	117.7	117.1	116.8	115.9
MT_ON	0 to 50 ns	0.880	4.9	6.7	100321	5.3	100326	5.1	5.7	5.8	5.8
MT_OFF	0 to 50 ns	1.4	27.8	26.9	100323	27.9	100326	27.5	27.3	27.3	27.1
VCCUV+pa	7.4 to 9.6 V	11.1 F	9.1	9.3	9.2	9.2	9.2	9.1	9.2	9.3	9.2
VCCUV-pa	7 to 9.4 V	11.1 F	8.9	9.0	9.0	9.0	9.0	8.9	8.9	9.0	8.9
VBSUV+pa	7.5 to 9.7 V	11.1 F	9.2	9.1	9.2	9.2	9.2	9.2	9.2	9.2	9.2
VBSUV-pa	7 to 9.4 V	11.1 F	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
IQDD1	0 to 30 uA	0.030	0.646	0.463	0.525	0.621	0.673	0.601	0.474	0.469	0.478
IQCC1	0 to 340 uA	1	126.4	125.4	126.8	125.6	125.6	125.7	125.8	125.6	123.9
IQBS1	0 to 230 uA	0.875	51.6	52.9	11355 F	51.1	11355 F	51.9	51.8	53.3	52.0
D_IQDD1	0 to 3 uA	0.003	0.116	0.088	0.088	0.165	0.001	0.045	0.104	0.048	0.058
D_IQCC1	0 to 30 uA	0	0.313	0	0.188	0	0.188	0	0.250	0.063	0.313
D_IQBS1	0 to 20 uA	0.125	0.375	0.250	0.563	0.125	0.375	0.188	0	0.188	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	21	22	23	24	25	26 [F]	27	28	29	30
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.3	2.4	2.7	2.3	2.7	1.7	2.0	2.8	2.8	2.6
IQDD0	0 to 150 uA	0.641	0.397	0.581	0.514	0.414	0.641	0.563	0.459	0.410	0.625
IQCC0	0 to 1000 uA	110.6	110.3	115.4	113.5	115.3	115.6	115.5	111.8	112.2	114.2
IQBS0	0 to 230 uA	80.9	81.0	82.1	82.4	83.8	83.3	83.0	81.4	83.6	83.2
IHIN0	0 to 1 uA	0.038	0.032	0.035	0.037	0.035	0.037	0.038	0.036	0.032	0.039
ILIN0	0 to 1 uA	0.038	0.032	0.037	0.037	0.034	0.038	0.038	0.035	0.032	0.040
ISD0	0 to 1 uA	0.037	0.038	0.039	0.032	0.038	0.040	0.033	0.035	0.038	0.037
IQDD1	0 to 150 uA	0.444	0.533	6.7	0.629	0.583	0.436	0.634	0.613	0.513	0.501
IQCC1	0 to 1000 uA	125.1	125.4	131.0	128.4	129.7	130.8	130.3	126.9	126.6	128.9
IQBS1	0 to 230 uA	51.7	52.7	56.9	52.9	53.8	83.3	53.0	52.9	54.4	53.3
IHIN1	0 to 70 uA	40.7	40.6	41.9	41.3	42.1	41.8	42	41	41	41.7
ILIN1	0 to 70 uA	41.3	41.3	42.5	42.2	42.9	42.6	42.4	41.6	41.2	42.4
ISD1	0 to 70 uA	40.6	40.7	41.8	41.3	42.1	41.9	41.7	41	40.8	41.6
ILO+	2 to 5 A	2.8	2.8	2.7	2.8	2.7	2.8	2.8	2.8	2.9	2.8
ILO-	2 to 5 A	3.3	3.3	3.2	3.3	3.2	3.3	3.3	3.3	3.4	3.3
IHO+	2 to 5 A	2.6	2.6	2.5	2.6	2.5	-0.004 F	2.6	2.6	2.6	2.6
IHO-	2 to 5 A	3.5	3.5	3.4	3.5	3.5	3.5	3.5	3.5	3.6	3.5
FN_15/15	1 to 1	1	1	1	1	1	0 F	1	1	1	1
VOH_LS	0 to 1.2 V	0.313	0.303	0.319	0.306	0.316	0.307	0.306	0.295	0.302	0.309
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.286	0.281	0.293	0.282	0.291	15.0 F	0.284	0.271	0.283	0.284
Vth+HS	6 to 9.5 V	7.9	7.9	7.9	8.0	8.0	11.1 F	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.4	6.5	6.4	6.5	6.5	11.1 F	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	141.3	138.7	143.2	137.6	138.0	138.5	133.0	137.0	126.0	137.2
TOFF_LS	50 to 150 ns	144.5	141.3	145.7	140.2	138.5	137.1	135.6	139.3	126	138.7
TR_LS	2 to 35 ns	15.8	15.6	16.1	16.0	8.1	9.2	8.3	8.3	9.1	14.3
TF_LS	2 to 25 ns	6.1	6.2	6.2	6.7	6.6	6.3	6.2	6.4	6.3	6.5
TON_HS	50 to 180 ns	135.3	132.9	138.0	131.6	133.8	-100180	128.7	132.5	126.2	131.8
TOFF_HS	50 to 150 ns	116.8	114.4	118.5	113.1	114.7	-100180	111.5	113.2	108.9	112.9
TR_HS	2 to 35 ns	10.6	10.4	10.5	10.4	10.8	3.3	10.8	10.8	9.9	10.3
TF_HS	2 to 25 ns	9.1	9.2	9.0	9.0	9.3	3.3	9.0	9.3	9.1	9.5
TSD_LS	50 to 180 ns	133.8	131.1	136.0	130.5	129.9	130.0	126.5	130.1	122.1	129.3
TSD_HS	50 to 180 ns	118.5	116.2	120.2	115.4	117.4	-100180	114.6	114.9	111.0	116.1
MT_ON	0 to 50 ns	6.0	5.8	5.3	6.0	4.2	100319	4.3	4.5	0.210	5.3
MT_OFF	0 to 50 ns	27.6	26.9	27.1	27.1	23.8	100320	24.1	26	17.1	25.8
VCCUV+pa	7.4 to 9.6 V	9.1	9.2	9.2	8.5	8.6	11.1 F	8.5	8.6	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.9	8.9	8.9	8.3	8.3	11.1 F	8.3	8.3	8.3	8.3
VBSUV+pa	7.5 to 9.7 V	9.2	9.2	9.2	8.5	8.6	11.1 F	8.6	8.6	8.6	8.6
VBSUV-pa	7 to 9.4 V	8.9	8.9	8.9	8.3	8.4	11.1 F	8.4	8.4	8.3	8.3
IQDD1	0 to 30 uA	0.587	0.434	6.6	0.569	0.488	0.632	0.605	0.550	0.410	0.624
IQCC1	0 to 340 uA	125.1	125.3	131.0	128.4	129.9	131.2	130.1	126.9	127.1	128.8
IQBS1	0 to 230 uA	51.6	52.8	57.0	53.2	54.2	83.1	53.3	52.9	54.6	52.8
D_IQDD1	0 to 3 uA	0.143	0.099	0.131	0.060	0.095	0.196	0.029	0.063	0.103	0.124
D_IQCC1	0 to 30 uA	0	0.125	0	0	0.188	0.438	0.125	0.063	0.563	0.188
D_IQBS1	0 to 20 uA	0.125	0.125	0.063	0.250	0.375	0.250	0.313	0.063	0.188	0.500

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	31 [F]	32	33	34	35	36	37	38	39	40
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.5	2.0	2.3	2.0	2.2	2.3	2.2	2.5	1.7	2.6
IQDD0	0 to 150 uA	0.463	0.583	0.488	0.526	0.471	0.594	0.571	0.621	0.622	0.549
IQCC0	0 to 1000 uA	109.9	115.1	111.9	117.3	114.3	112.1	113.9	115.1	114.8	112.1
IQBS0	0 to 230 uA	11343 F	84.2	84.3	85.3	82.8	81.6	82.9	83.1	83.6	81.6
IHIN0	0 to 1 uA	0.042	0.036	0.032	0.034	0.033	0.039	0.035	0.039	0.039	0.034
ILIN0	0 to 1 uA	0.043	0.038	0.033	0.035	0.033	0.039	0.036	0.039	0.039	0.035
ISD0	0 to 1 uA	0.049	0.039	0.039	0.039	0.039	0.035	0.039	0.038	0.037	0.038
IQDD1	0 to 150 uA	0.473	0.395	0.430	0.409	0.443	0.594	0.411	0.451	0.493	0.405
IQCC1	0 to 1000 uA	124.0	130.1	125.9	131.9	129.4	127.1	128.9	129.8	129.6	127.0
IQBS1	0 to 230 uA	11357 F	54.1	55.4	54.9	53.6	51.8	53.3	53.3	53.8	51.9
IHIN1	0 to 70 uA	40.2	42	40.7	42.6	41.5	41.1	41.3	41.8	41.1	41.3
ILIN1	0 to 70 uA	40.9	42.8	40.8	43.4	42.3	41.7	42.1	42.5	41.9	41.9
ISD1	0 to 70 uA	40.3	41.9	40.4	42.7	41.5	41.2	41.4	41.7	41.3	41.1
ILO+	2 to 5 A	2.8	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7
ILO-	2 to 5 A	3.3	3.3	3.5	3.3	3.3	3.3	3.3	3.3	3.3	3.2
IHO+	2 to 5 A	2.5	2.6	2.7	2.6	2.6	2.5	2.6	2.6	2.6	2.5
IHO-	2 to 5 A	1.5 F	3.5	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.4
FN_15/15	1 to 1	0 F	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.300	0.316	0.300	0.314	0.309	0.310	0.309	0.307	0.310	0.316
VOL_LS	-0.01 to 0.1 V	0.002	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0.032	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.650	0.288	0.280	0.291	0.283	0.284	0.286	0.282	0.286	0.292
Vth+HS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.6	6.5	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	138.7	136.2	127.3	137.4	136.2	140.7	136.2	138.7	133.7	138.9
TOFF_LS	50 to 150 ns	138.4	137.7	125.3	131.8	137.7	142.2	138.8	139.1	136.1	139.8
TR_LS	2 to 35 ns	9.1	8.0	8.8	8.4	14.5	16.0	15.6	15.7	9.7	9.4
TF_LS	2 to 25 ns	6.6	6.4	6.0	6.3	6.5	6.4	6.5	6.5	6.3	6.5
TON_HS	50 to 180 ns	-100180	132.0	126.0	134.6	130.7	135.3	130.7	132.6	128.3	134.0
TOFF_HS	50 to 150 ns	-100180	113.0	109.1	113.4	112.4	116.0	112.4	113.1	110.8	115.3
TR_HS	2 to 35 ns	3.3	10.9	9.8	10.3	10.5	10.4	10.4	10.3	10.3	10.5
TF_HS	2 to 25 ns	3.3	9.0	9.2	9.3	9.2	9.3	9.0	9.5	9.2	9.4
TSD_LS	50 to 180 ns	131.0	128.6	121.8	128.8	129.0	132.7	129.0	129.7	126.7	131.1
TSD_HS	50 to 180 ns	-100180	116.4	111.0	116.0	115.2	119.4	115.9	116.2	113.3	118.8
MT_ON	0 to 50 ns	100319	4.2	1.4	2.8	5.6	5.4	5.5	6.1	5.4	4.9
MT_OFF	0 to 50 ns	100321	24.8	16.2	18.4	25.4	26.2	26.3	25.9	25.3	24.6
VCCUV+pa	7.4 to 9.6 V	8.5	8.6	8.5	8.5	8.4	8.6	8.6	8.6	8.5	8.6
VCCUV-pa	7 to 9.4 V	8.3	8.3	8.2	8.2	8.2	8.4	8.3	8.3	8.3	8.3
VBSUV+pa	7.5 to 9.7 V	8.6	8.5	8.6	8.6	8.6	8.6	8.6	8.5	8.6	8.6
VBSUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.4	8.3	8.3	8.3	8.3	8.3	8.4
IQDD1	0 to 30 uA	0.418	0.462	0.414	0.424	0.407	0.628	0.445	0.587	0.630	0.447
IQCC1	0 to 340 uA	125.1	130.0	126.5	132.0	130.0	127.1	129.1	130.3	129.5	127.0
IQBS1	0 to 230 uA	11357 F	53.8	55.3	54.9	53.5	51.9	53.2	53.1	53.7	51.6
D_IQDD1	0 to 3 uA	0.055	0.067	0.016	0.015	0.036	0.034	0.034	0.136	0.138	0.042
D_IQCC1	0 to 30 uA	1.1	0.125	0.625	0.125	0.563	0.063	0.188	0.438	0.063	0
D_IQBS1	0 to 20 uA	0.188	0.375	0.063	0.063	0.125	0.125	0.063	0.188	0.063	0.375

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	41	42 [F]	43	44	45	46 [F]	47	48	49	50
CONT_OPN	0 to 0	0	0	0	0	0	255.0 F	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.0	3.2	2.9	2.5	2.8	1.8	1.9	2.2	2.1	1.8
IQDD0	0 to 150 uA	0.641	0.521	0.449	0.406	0.571	0.046	0.584	0.600	0.449	0.233
IQCC0	0 to 1000 uA	112.0	97.9	114.6	116.9	114.6	1.3	114.9	115.2	114.0	113.5
IQBS0	0 to 230 uA	81.9	11346 F	83.5	85.4	82.5	1.1	82.4	123.6	81.7	81.8
IHIN0	0 to 1 uA	0.038	0.054	0.033	0.035	0.038	0	0.039	0.039	0.038	0.027
ILIN0	0 to 1 uA	0.039	0.053	0.032	0.034	0.038	0	0.039	0.039	0.038	0.028
ISD0	0 to 1 uA	0.038	0.057	0.040	0.040	0.033	0	0.035	0.036	0.033	0.032
IQDD1	0 to 150 uA	0.451	0.711	0.497	0.568	0.646	0.036	0.619	0.599	0.628	0.336
IQCC1	0 to 1000 uA	126.8	113.3	128.4	132.2	129.7	1.1	129.1	129.3	128.8	128.1
IQBS1	0 to 230 uA	52.9	11358 F	54.2	55.3	52.7	1.1	52.8	53.1	52.0	52.6
IHIN1	0 to 70 uA	40.0	41.6	41.1	43	41.6	0.016	41.7	41.7	41.4	41.7
ILIN1	0 to 70 uA	40.8	41.9	41.5	43.7	42.3	0.014	42.6	42.6	42.5	42.6
ISD1	0 to 70 uA	40.0	41.5	41	42.9	41.6	0.018	41.7	41.7	41.6	41.8
ILO+	2 to 5 A	2.8	3.0	2.8	2.8	2.8	-0.002 F	2.7	2.8	2.7	2.7
ILO-	2 to 5 A	3.3	2.7	3.3	3.3	3.3	0 F	3.2	3.2	3.2	3.2
IHO+	2 to 5 A	2.6	0.650 F	2.6	2.6	2.6	-0.003 F	2.5	2.5	2.5	2.5
IHO-	2 to 5 A	3.5	3.8	3.5	3.5	3.5	0 F	3.5	3.5	3.4	3.5
FN_15/15	1 to 1	1	0 F	1	1	1	0 F	1	1	1	1
VOH_LS	0 to 1.2 V	0.310	0.299	0.307	0.312	0.311	12.9 F	0.309	0.313	0.314	0.314
VOL_LS	-0.01 to 0.1 V	0	0.004	0	0	0	0.076	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0.331 F	0	0	0	0.223 F	0	0	0	0
VOH_HS	0 to 1.2 V	0.285	4.3 F	0.286	0.288	0.286	11.8 F	0.286	0.289	0.291	0.293
Vth+HS	6 to 9.5 V	8.0	11.1 F	8.0	8.0	8.0	11.1 F	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.5	11.1 F	6.5	6.5	6.5	11.1 F	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	7.9	11.1 F	8.0	8.0	8.0	11.1 F	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.4	11.1 F	6.5	6.5	6.5	11.1 F	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	2.9 F	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	134.0	135.7	130.6	136.7	138.2	-100180	137.0	137.4	140.3	137.7
TOFF_LS	50 to 150 ns	136.5	136.5	133.2	133.7	140.4	-100180	136.9	136.7	138.1	135.9
TR_LS	2 to 35 ns	8.5	9.3	8.0	8.1	15.8	3.3	8.8	9.2	10.1	9.6
TF_LS	2 to 25 ns	6.4	6.7	6.5	6.6	6.4	3.3	6.1	6.9	9.5	6.9
TON_HS	50 to 180 ns	129.2	-100180	127.5	132.8	132.3	-100180	146.9	148.0	145.3	145.0
TOFF_HS	50 to 150 ns	110.6	-100180	110.1	112.8	113.4	-100180	115.3	116.0	116.0	114.4
TR_HS	2 to 35 ns	10.6	3.3	10.7	10.7	10.5	3.3	9.2	9.3	8.6	10.1
TF_HS	2 to 25 ns	9.2	3.3	9.3	9.0	9.3	3.3	9.6	10.2	9.3	9.4
TSD_LS	50 to 180 ns	126.9	129.2	124.5	127.9	130.6	-100180	128.7	129.2	131.6	128.5
TSD_HS	50 to 180 ns	113.5	-100180	112.2	115.2	116.7	-100180	117.2	118.4	119.1	117.0
MT_ON	0 to 50 ns	4.8	100316	3.1	3.9	5.8	1.5	10.0	10.6	5.0	7.3
MT_OFF	0 to 50 ns	26	100319	23.1	20.9	27.1	1.3	21.6	20.7	22.1	21.5
VCCUV+pa	7.4 to 9.6 V	8.3	11.1 F	8.5	8.5	8.5	11.1 F	8.0	8.5	8.5	8.6
VCCUV-pa	7 to 9.4 V	8.1	11.1 F	8.3	8.3	8.3	11.1 F	7.8	8.3	8.3	8.3
VBSUV+pa	7.5 to 9.7 V	8.6	11.1 F	8.6	8.6	8.6	11.1 F	8.6	8.7	8.6	8.6
VBSUV-pa	7 to 9.4 V	8.3	11.1 F	8.3	8.4	8.3	11.1 F	8.4	8.7	8.4	8.3
IQDD1	0 to 30 uA	0.627	0.647	0.414	0.458	0.628	0.034	0.624	0.636	0.613	0.401
IQCC1	0 to 340 uA	126.6	114.4	128.7	132.3	129.4	1.2	128.9	129.2	128.6	128.7
IQBS1	0 to 230 uA	52.6	11358 F	53.9	55.1	52.5	1.1	53.1	53.1	51.9	52.9
D_IQDD1	0 to 3 uA	0.176	0.064	0.083	0.111	0.018	0.003	0.004	0.037	0.016	0.065
D_IQCC1	0 to 30 uA	0.250	1.1	0.250	0.125	0.250	0.125	0.125	0.125	0.125	0.625
D_IQBS1	0 to 20 uA	0.313	0.813	0.250	0.250	0.188	0	0.250	0.063	0.063	0.313

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	51	52	53	54	55	56 [F]	57 [F]	58	59	60
CONT_OPN	0 to 0	0	0	0	0	0	192.0 F	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.6	2.0	2.2	2.4	1.9	60.6 F	2.1	1.8	2.3	2.2
IQDD0	0 to 150 uA	0.501	0.595	0.404	0.297	0.381	0.487	0.358	0.344	0.509	0.469
IQCC0	0 to 1000 uA	113.2	114.8	249.0	113.6	114.6	444.2	113.6	113.8	113.1	114.6
IQBS0	0 to 230 uA	82.4	81.9	82.6	82.0	82.4	6503 F	11350 F	81.9	81.8	82.8
IHIN0	0 to 1 uA	0.037	0.039	0.033	0.032	0.034	0.038	0.041	0.031	0.038	0.037
ILIN0	0 to 1 uA	0.036	0.039	0.033	0.031	0.035	0.037	0.042	0.032	0.037	0.037
ISD0	0 to 1 uA	0.032	0.036	0.039	0.033	0.033	0.035	0.042	0.035	0.034	0.033
IQDD1	0 to 150 uA	0.607	0.596	0.506	0.476	0.323	0.624	0.301	0.333	0.503	0.609
IQCC1	0 to 1000 uA	126.6	129.0	188.6	127.8	128.6	402.9	128.3	128.2	127.2	128.7
IQBS1	0 to 230 uA	52.9	52.2	53.2	52.5	52.5	6500 F	623.8 F	52.7	52.1	53.0
IHIN1	0 to 70 uA	40.8	41.6	41.8	41.6	41.8	41.7	41.5	41.6	41.2	41.5
ILIN1	0 to 70 uA	41.4	42.6	42.5	42.3	42.6	42.7	42.3	42.4	42.1	42.2
ISD1	0 to 70 uA	40.9	41.6	41.8	41.6	41.9	41.9	41.6	41.6	41.3	41.5
ILO+	2 to 5 A	2.8	2.7	2.8	2.7	2.7	3.1	2.7	2.7	2.7	2.8
ILO-	2 to 5 A	3.3	3.2	3.2	3.2	3.2	-0.002 F	3.2	3.2	3.2	3.2
IHO+	2 to 5 A	2.5	2.5	2.5	2.5	2.5	5.6 F	2.5	2.5	2.5	2.5
IHO-	2 to 5 A	3.5	3.4	3.5	3.5	3.4	0.003 F	2.0	3.4	3.5	3.5
FN_15/15	1 to 1	1	1	1	1	1	0 F	0 F	1	1	1
VOH_LS	0 to 1.2 V	0.313	0.316	0.312	0.316	0.317	0.227	0.309	0.316	0.314	0.313
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	1.6 F	0.002	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	1.6 F	0.023	0	0	0
VOH_HS	0 to 1.2 V	0.290	0.291	0.291	0.293	0.293	0	0.631	0.293	0.291	0.287
Vth+HS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	2.9 F	8.0	8.0	8.0	8.0
Vth-HS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	2.9 F	6.5	6.5	6.5	6.5
Vth+LS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	2.9 F	8.0	8.0	8.0	8.0
Vth-LS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	2.9 F	6.5	6.5	6.5	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	11.1 F	8.0	8.0	8.0	8.0
TON_LS	50 to 180 ns	134.9	140.5	137.4	139.8	140.2	-100180	139.0	139.2	137.5	136.6
TOFF_LS	50 to 150 ns	133.8	137.8	136.4	137.7	137.6	-100180	138.1	137.9	136.4	135.6
TR_LS	2 to 35 ns	9.9	10.1	9.1	9.7	9.6	3.3	9.5	9.7	9.6	9.9
TF_LS	2 to 25 ns	10.3	9.7	6.2	7.5	7.7	3.3	6.7	6.9	7.8	9.7
TON_HS	50 to 180 ns	139.5	145.2	145.3	146.5	147.5	-100180	-100180	146.1	143.3	141.9
TOFF_HS	50 to 150 ns	112.9	116.2	114.6	115.7	116.4	-100180	-100180	117.1	115.4	113.4
TR_HS	2 to 35 ns	8.3	8.2	9.8	9.4	10.1	3.3	3.3	9.9	9.2	8.8
TF_HS	2 to 25 ns	9.6	9.4	9.4	9.2	9.1	3.3	3.3	9.4	9.2	9.5
TSD_LS	50 to 180 ns	127.8	131.3	128.8	130.9	130.8	-100180	130.8	130.5	129.3	129.4
TSD_HS	50 to 180 ns	115.5	118.7	117.0	118.6	118.8	-100180	-100180	119.4	117.4	116.6
MT_ON	0 to 50 ns	4.6	4.7	7.9	6.7	7.3	0.930	100320	6.9	5.9	5.3
MT_OFF	0 to 50 ns	20.9	21.5	21.8	22	21.2	1.8	100321	20.8	21.1	22.2
VCCUV+pa	7.4 to 9.6 V	8.5	8.6	8.3	8.5	8.4	2.9 F	8.5	8.4	8.5	8.5
VCCUV-pa	7 to 9.4 V	8.3	8.3	8.1	8.3	8.2	2.9 F	8.3	8.2	8.3	8.3
VBSUV+pa	7.5 to 9.7 V	8.6	8.6	8.5	8.6	8.6	5.0 F	8.6	8.6	8.6	8.5
VBSUV-pa	7 to 9.4 V	8.4	8.4	8.3	8.4	8.4	5.0 F	8.4	8.4	8.3	8.3
IQDD1	0 to 30 uA	0.569	0.625	0.416	0.522	0.541	0.603	0.516	0.383	0.616	0.611
IQCC1	0 to 340 uA	126.1	128.8	188.8	127.7	128.9	400.8 F	128.6	128.6	127.1	128.5
IQBS1	0 to 230 uA	53.0	51.9	53.1	52.8	52.8	6493 F	620.5 F	52.9	51.8	52.8
D_IQDD1	0 to 3 uA	0.038	0.029	0.090	0.046	0.218	0.021	0.215	0.049	0.113	0.001
D_IQCC1	0 to 30 uA	0.438	0.188	0.125	0.063	0.313	2.1	0.313	0.375	0.063	0.188
D_IQBS1	0 to 20 uA	0.125	0.250	0.063	0.250	0.250	7.3	3.3	0.188	0.313	0.250

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	61	62 [F]	63	64	65	66	67 [F]	68	69	70 [F]
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	1.9	60.4 F	2.2	2.1	1.8	2.3	2.2	2.3	2.3	2.2
IQDD0	0 to 150 uA	0.364	0.307	0.293	0.591	0.433	0.551	0.349	0.624	0.631	0.386
IQCC0	0 to 1000 uA	114.4	114.3	113.7	114.5	114.6	112.9	114.0	106.5	104.8	102.6
IQBS0	0 to 230 uA	82.5	87.1	80.8	82.5	82.3	81.7	1291 F	76.3	75.3	11350 F
IHIN0	0 to 1 uA	0.035	0.033	0.032	0.039	0.036	0.039	0.032	0.039	0.038	0.040
ILIN0	0 to 1 uA	0.035	0.033	0.032	0.038	0.036	0.039	0.032	0.039	0.038	0.040
ISD0	0 to 1 uA	0.032	0.037	0.030	0.034	0.031	0.036	0.038	0.036	0.038	0.037
IQDD1	0 to 150 uA	0.588	0.533	0.484	0.639	0.583	0.583	0.498	0.591	0.446	0.552
IQCC1	0 to 1000 uA	129.0	129.3	128.3	128.8	128.8	127.3	128.4	120.6	119.1	118.1
IQBS1	0 to 230 uA	52.8	57.8	50.9	52.6	52.8	51.9	1291 F	47.4	46.6	11365 F
IHIN1	0 to 70 uA	41.5	42	41.9	41.5	41.5	41.2	41.6	40.2	40.7	40.2
ILIN1	0 to 70 uA	42.5	42.8	42.5	42.4	42.4	42.1	42.7	41	41.4	40.4
ISD1	0 to 70 uA	41.5	41.9	41.6	41.5	41.5	41.3	41.7	40.3	40.6	40.2
ILO+	2 to 5 A	2.8	2.7	2.7	2.8	2.7	2.7	2.8	2.9	2.9	2.9
ILO-	2 to 5 A	3.2	3.2	3.2	3.2	3.2	3.2	3.3	3.4	3.4	3.5
IHO+	2 to 5 A	2.5	2.5	2.5	2.5	2.5	2.5	-0.006 F	2.6	2.6	1.9 F
IHO-	2 to 5 A	3.5	3.4	3.4	3.5	3.5	3.5	3.5	3.6	3.6	2.0
FN_15/15	1 to 1	1	1	1	1	1	1	0 F	1	1	0 F
VOH_LS	0 to 1.2 V	0.311	0.317	0.317	0.313	0.312	0.313	0.310	0.269	0.262	0.243
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0.001
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0.028
VOH_HS	0 to 1.2 V	0.288	0.291	0.292	0.289	0.289	0.289	15.0 F	0.245	0.239	4.6 F
Vth+HS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	11.1 F	7.9	7.8	7.9
Vth-HS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	11.1 F	6.4	6.4	6.5
Vth+LS	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.8	7.9	7.9
Vth-LS	6 to 9.5 V	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.4	6.5
Vth+SD	6 to 9.5 V	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.9	7.9	7.9
TON_LS	50 to 180 ns	136.0	141.3	140.6	136.4	137.4	137.4	137.2	139.4	140.7	132.7
TOFF_LS	50 to 150 ns	135.5	138.2	138.5	135.6	136.3	136.6	134.1	143.1	143.7	137
TR_LS	2 to 35 ns	9.4	9.4	10.1	10.1	9.3	10.0	9.3	15.3	14.7	8.8
TF_LS	2 to 25 ns	6.5	8.9	9.6	8.6	6.1	10.0	6.4	5.7	6.0	6.6
TON_HS	50 to 180 ns	143.8	148.6	145.3	142.1	145.7	142.5	-100180	133.6	133.3	-100180
TOFF_HS	50 to 150 ns	113.9	116.9	117.0	114.3	115.2	114.9	-100180	115.0	115.7	-100180
TR_HS	2 to 35 ns	9.8	10.2	8.5	8.9	9.5	8.3	3.3	10.7	10.3	3.3
TF_HS	2 to 25 ns	9.5	9.3	9.6	9.3	9.8	9.7	3.3	9.5	9.3	3.3
TSD_LS	50 to 180 ns	129.1	131.2	132.9	129.2	129.1	130.1	128.7	133.1	133.9	129.4
TSD_HS	50 to 180 ns	116.3	118.9	119.7	117.2	117.4	117.7	-100180	117.4	118.0	-100180
MT_ON	0 to 50 ns	7.9	7.3	4.7	5.7	8.2	5.1	100318	5.9	7.3	100313
MT_OFF	0 to 50 ns	21.7	21.3	21.5	21.3	21.1	21.7	100317	28.1	28	100320
VCCUV+pa	7.4 to 9.6 V	8.6	8.6	8.6	8.6	8.5	8.6	11.1 F	9.2	9.2	9.1
VCCUV-pa	7 to 9.4 V	8.3	8.3	8.3	8.3	8.3	8.3	11.1 F	8.9	8.9	8.9
VBSUV+pa	7.5 to 9.7 V	8.6	8.8	8.6	8.6	8.5	8.6	11.1 F	9.3	9.2	9.3
VBSUV-pa	7 to 9.4 V	8.3	8.8	8.4	8.3	8.2	8.4	11.1 F	9.0	8.9	9.3
IQDD1	0 to 30 uA	0.581	0.486	0.564	0.634	0.600	0.642	0.372	0.654	0.588	0.645
IQCC1	0 to 340 uA	128.7	129.0	128.3	128.6	128.5	127.1	128.6	120.4	119.1	118.8
IQBS1	0 to 230 uA	52.9	57.7	51.4	52.4	52.9	51.7	1290 F	47.2	46.5	11365 F
D_IQDD1	0 to 3 uA	0.007	0.048	0.081	0.005	0.018	0.059	0.126	0.063	0.143	0.093
D_IQCC1	0 to 30 uA	0.313	0.250	0	0.188	0.313	0.250	0.188	0.125	0.063	0.625
D_IQBS1	0 to 20 uA	0.063	0.063	0.438	0.250	0.188	0.250	0.938	0.188	0.125	0.250

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	71	72	73	74	75	76	77	78 [F]	79	80
CONT_OPN	0 to 0	0	0	0	0	0	0	0	255.0 F	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.5	2.4	2.0	2.6	2.5	2.1	3.0	2.0	2.0	1.8
IQDD0	0 to 150 uA	0.481	0.641	0.449	0.493	0.383	0.470	0.380	0.047	0.447	0.423
IQCC0	0 to 1000 uA	105.5	104.2	104.1	105.1	103.9	103.4	104.4	1.2	105.5	103.8
IQBS0	0 to 230 uA	76.4	75.6	75.9	76.7	75.7	74.7	74.9	1.3	76.6	76.9
IHIN0	0 to 1 uA	0.035	0.037	0.034	0.036	0.030	0.032	0.032	0	0.037	0.031
ILIN0	0 to 1 uA	0.036	0.038	0.034	0.036	0.030	0.033	0.031	0	0.038	0.032
ISD0	0 to 1 uA	0.033	0.038	0.032	0.031	0.034	0.037	0.037	0	0.033	0.032
IQDD1	0 to 150 uA	0.524	0.429	0.454	0.576	0.375	0.411	0.517	0.036	0.664	0.331
IQCC1	0 to 1000 uA	119.8	118.6	118.3	119.9	118.3	117.7	119.0	1.1	119.9	117.4
IQBS1	0 to 230 uA	47.4	47.1	47.2	47.3	47.6	46.4	46.9	1.3	48.1	49.0
IHIN1	0 to 70 uA	40.2	40.4	40.4	40.6	40.0	40.2	40.6	0.016	40.0	39.5
ILIN1	0 to 70 uA	40.9	40.9	40.8	41.3	40.4	40.5	41.4	0.013	40.6	39.8
ISD1	0 to 70 uA	40.3	40.3	40.3	40.6	39.8	39.9	40.6	0.015	39.9	39.4
ILO+	2 to 5 A	2.9	2.9	2.9	2.9	2.9	2.8	2.9	-0.003 F	2.9	3.0
ILO-	2 to 5 A	3.4	3.4	3.4	3.4	3.4	3.4	3.4	0 F	3.4	3.5
IHO+	2 to 5 A	2.6	2.7	2.6	2.6	2.7	2.6	2.6	-0.002 F	2.6	2.7
IHO-	2 to 5 A	3.6	3.6	3.6	3.6	3.6	3.6	3.6	-0.002 F	3.6	3.7
FN_15/15	1 to 1	1	1	1	1	1	1	1	0 F	1	1
VOH_LS	0 to 1.2 V	0.272	0.263	0.265	0.268	0.262	0.265	0.264	12.9 F	0.266	0.263
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0.074	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0.223 F	0	0
VOH_HS	0 to 1.2 V	0.247	0.236	0.242	0.245	0.239	0.241	0.240	11.8 F	0.245	0.240
Vth+HS	6 to 9.5 V	7.8	7.9	7.9	7.8	7.8	7.9	7.8	11.1 F	7.8	7.9
Vth-HS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4	11.1 F	6.4	6.4
Vth+LS	6 to 9.5 V	7.8	7.8	7.9	7.8	7.8	7.9	7.8	11.1 F	7.9	7.9
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4	11.1 F	6.4	6.4
Vth+SD	6 to 9.5 V	7.9	7.9	7.9	7.8	7.8	7.9	7.8	2.9 F	7.9	7.9
TON_LS	50 to 180 ns	140.5	140.0	140.2	137.6	137.7	141.5	136.5	-100180	139.0	132.0
TOFF_LS	50 to 150 ns	143.8	142.6	143	141.4	140.6	143.6	139.8	-100180	143.5	137.2
TR_LS	2 to 35 ns	14.9	14.8	15.1	15.9	11.9	14.6	15.2	3.3	15.8	7.9
TF_LS	2 to 25 ns	5.5	9.5	6.0	6.0	6.3	6.6	6.5	3.3	5.9	6.5
TON_HS	50 to 180 ns	133.5	132.0	133.5	131.5	132.4	134.5	130.1	-100180	133.7	127.8
TOFF_HS	50 to 150 ns	115.9	114.6	115.2	113.7	112.1	115.8	112.9	-100180	115.4	110.8
TR_HS	2 to 35 ns	10.6	10.3	10.5	10.7	10.5	10.2	10.1	3.3	10.7	11.0
TF_HS	2 to 25 ns	9.2	9.6	9.3	9.2	9.1	9.5	9.2	3.3	9.5	9.1
TSD_LS	50 to 180 ns	133.6	133.1	132.9	130.8	130.8	134.0	130.0	-100180	132.4	127.6
TSD_HS	50 to 180 ns	118.0	117.2	117.4	115.6	114.5	118.4	115.1	-100180	117.2	113.7
MT_ON	0 to 50 ns	7.0	7.9	6.7	6.1	5.3	7.0	6.4	0.790	5.3	4.2
MT_OFF	0 to 50 ns	28	28	27.9	27.8	28.5	27.8	27	1.3	28.1	26.4
VCCUV+pa	7.4 to 9.6 V	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.1 F	9.1	9.1
VCCUV-pa	7 to 9.4 V	8.9	8.9	8.9	8.9	8.9	9.0	8.9	11.1 F	8.8	8.8
VBSUV+pa	7.5 to 9.7 V	9.2	9.2	9.2	9.4	9.5	9.2	9.4	11.1 F	9.1	9.2
VBSUV-pa	7 to 9.4 V	8.9	8.9	8.9	9.1	9.2	8.9	9.1	11.1 F	8.8	8.9
IQDD1	0 to 30 uA	0.579	0.559	0.558	0.609	0.334	0.402	0.479	0.033	0.656	0.543
IQCC1	0 to 340 uA	119.6	118.7	118.2	119.6	118.6	117.7	119.1	1.4	119.4	117.9
IQBS1	0 to 230 uA	47.4	46.9	47.1	47.6	47.6	46.3	46.9	1.1	48.3	48.9
D_IQDD1	0 to 3 uA	0.055	0.129	0.103	0.034	0.041	0.009	0.038	0.004	0.008	0.212
D_IQCC1	0 to 30 uA	0.188	0.125	0.125	0.313	0.313	0	0.063	0.250	0.500	0.438
D_IQBS1	0 to 20 uA	0.063	0.188	0.063	0.313	0	0.063	0	0.250	0.250	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7627
DATE : 1-31-00
Location: POST SEE WL800715

TESTS	LIMITS	81	82	83	84	85	86	87
CONT_OPN	0 to 0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.8	2.1	2.4	2.1	2.1	2.2	2.3
IQDD0	0 to 150 uA	0.434	0.638	0.508	0.609	0.415	0.542	0.553
IQCC0	0 to 1000 uA	104.0	106.8	106.2	105.4	104.8	102.3	103.7
IQBS0	0 to 230 uA	76.7	76.8	76.1	76.0	75.3	75.1	73.9
IHIN0	0 to 1 uA	0.035	0.037	0.037	0.038	0.034	0.034	0.034
ILIN0	0 to 1 uA	0.034	0.038	0.036	0.038	0.035	0.036	0.036
ISD0	0 to 1 uA	0.035	0.038	0.032	0.033	0.032	0.038	0.037
IQDD1	0 to 150 uA	0.604	0.430	0.634	0.663	0.563	0.414	0.406
IQCC1	0 to 1000 uA	118.1	121.3	120.6	119.6	119.5	116.4	118.7
IQBS1	0 to 230 uA	48.2	47.8	47.7	47.4	46.9	46.9	45.8
IHIN1	0 to 70 uA	40.3	40.6	40.5	39.9	40.1	40.0	39.4
ILIN1	0 to 70 uA	40.8	41.3	40.9	40.7	41.1	40.5	40.8
ISD1	0 to 70 uA	40.2	40.7	40.3	40.1	40.3	39.9	39.8
ILO+	2 to 5 A	2.9	2.9	2.9	2.9	2.9	2.8	2.8
ILO-	2 to 5 A	3.4	3.4	3.4	3.4	3.4	3.3	3.4
IHO+	2 to 5 A	2.7	2.6	2.6	2.7	2.6	2.6	2.6
IHO-	2 to 5 A	3.6	3.6	3.6	3.6	3.6	3.6	3.6
FN_15/15	1 to 1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.265	0.270	0.271	0.263	0.265	0.257	0.265
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.241	0.244	0.247	0.243	0.243	0.232	0.241
Vth+HS	6 to 9.5 V	7.8	7.8	7.9	7.8	7.8	7.9	7.9
Vth-HS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+LS	6 to 9.5 V	7.8	7.8	7.9	7.8	7.8	7.9	7.9
Vth-LS	6 to 9.5 V	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vth+SD	6 to 9.5 V	7.8	7.9	7.9	7.8	7.8	7.9	7.9
TON_LS	50 to 180 ns	137.0	139.6	141.0	137.5	139.8	140.9	142.8
TOFF_LS	50 to 150 ns	140.4	142.6	144	141.2	142.8	144.9	145.3
TR_LS	2 to 35 ns	14.9	15.5	15.4	15.7	15.1	15.5	14.8
TF_LS	2 to 25 ns	8.7	5.6	6.0	6.3	5.8	6.0	5.9
TON_HS	50 to 180 ns	129.3	133.1	134.8	131.6	132.7	135.7	135.8
TOFF_HS	50 to 150 ns	113.3	114.7	116.0	113.0	114.5	116.4	117.5
TR_HS	2 to 35 ns	10.2	10.5	10.4	10.6	10.5	10.5	10.5
TF_HS	2 to 25 ns	9.5	9.3	9.1	9.5	9.3	9.0	9.4
TSD_LS	50 to 180 ns	130.4	132.5	133.6	130.8	132.5	134.4	135.5
TSD_HS	50 to 180 ns	115.7	117.5	118.0	115.1	117.1	118.3	120.1
MT_ON	0 to 50 ns	7.7	6.5	6.3	5.9	7.1	5.2	7.0
MT_OFF	0 to 50 ns	27.1	27.8	28	28.3	28.3	28.5	27.8
VCCUV+pa	7.4 to 9.6 V	9.2	9.1	9.1	9.1	9.1	9.1	9.1
VCCUV-pa	7 to 9.4 V	9.0	8.8	8.8	8.8	8.8	8.8	8.9
VBSUV+pa	7.5 to 9.7 V	9.1	9.3	9.2	9.3	9.2	9.3	9.1
VBSUV-pa	7 to 9.4 V	8.8	9.0	8.9	9.0	8.9	9.0	8.8
IQDD1	0 to 30 uA	0.560	0.494	0.589	0.639	0.652	0.529	0.552
IQCC1	0 to 340 uA	117.8	121.4	120.0	119.5	119.6	116.8	118.8
IQBS1	0 to 230 uA	48.2	47.4	47.6	47.4	47.0	46.7	45.9
D_IQDD1	0 to 3 uA	0.044	0.064	0.045	0.024	0.089	0.115	0.146
D_IQCC1	0 to 30 uA	0.375	0.063	0.625	0.125	0.125	0.438	0.125
D_IQBS1	0 to 20 uA	0	0.438	0.063	0	0.063	0.188	0.125

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : NA

L.D.C. : 0003
LOT NO: B7603
DATE : 1/20/00
Location: PRE SEE WL800762

TESTS	LIMITS	1	2	3	4	5	6	7	8	9	10
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.2	2.0	2.1	2.5	1.9	2.4	2.1	2.6	2.3	2.5
IQDD0	0 to 150 uA	0.198	0.363	0.608	0.351	0.479	0.513	0.530	0.307	0.341	0.449
IQCC0	0 to 1000 uA	118.0	119.9	121.1	113.1	120.1	118.8	120.1	118.7	116.3	119.3
IQBS0	0 to 230 uA	82.4	83.8	83.8	80.9	84.1	83.9	83.7	83.0	81.8	82.5
IHIN0	0 to 1 uA	0.027	0.035	0.037	0.027	0.034	0.034	0.035	0.028	0.028	0.028
ILIN0	0 to 1 uA	0.026	0.035	0.036	0.027	0.033	0.034	0.034	0.028	0.027	0.029
ISD0	0 to 1 uA	0.029	0.030	0.034	0.035	0.028	0.030	0.029	0.036	0.034	0.035
IQDD1	0 to 150 uA	0.266	0.623	0.503	0.462	0.579	0.573	0.593	0.453	0.478	0.387
IQCC1	0 to 1000 uA	130.3	133.3	133.5	125.1	132.9	131.0	132.7	131.4	128.1	131.1
IQBS1	0 to 230 uA	60.7	61.8	61.3	60.7	61.8	61.8	61.4	61.6	61.4	61.1
IHIN1	0 to 40 uA	31.8	32.1	32.8	30.6	32.6	32.4	32.4	32.3	31.4	31.3
ILIN1	0 to 40 uA	32.0	32.5	32.8	30.6	32.8	32.3	32.5	32.5	31.5	31.9
ISD1	0 to 40 uA	31.8	32.2	32.8	30.6	32.6	32.3	32.4	32.3	31.3	31.6
ILO+	2 to 5 A	2.2	2.3	2.2	2.3	2.2	2.2	2.3	2.3	2.3	2.3
ILO-	2 to 5 A	2.7	2.7	2.6	2.8	2.6	2.7	2.6	2.6	2.7	2.7
IHO+	2 to 5 A	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1
IHO-	2 to 5 A	2.9	2.9	2.8	2.9	2.9	2.8	2.9	2.9	2.9	2.9
FN_15/15	1 to 1	1	1	1	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.611	0.616	0.616	0.604	0.614	0.614	0.616	0.615	0.615	0.617
VOL_LS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.589	0.592	0.593	0.583	0.593	0.592	0.595	0.591	0.589	0.591
Vth+HS	6 to 9.5 V	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	6.7	6.7	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Vth+LS	6 to 9.5 V	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Vth-LS	6 to 9.5 V	6.7	6.7	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Vth+SD	6 to 9.5 V	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
TON_LS	50 to 180 ns	176.7	178.7	179.8	172.1	178.1	176.4	179.3	178.3	174.8	178.3
TOFF_LS	50 to 180 ns	157.9	158.7	158.5	154.7	158	157.1	158.6	157.7	156.9	158
TR_LS	2 to 35 ns	15.7	15.3	15.3	15.4	15.4	15.3	15.8	15.7	15.3	15.7
TF_LS	2 to 25 ns	7.4	7.8	7.2	7.6	8.1	7.3	7.7	8.0	7.5	7.4
TON_HS	50 to 180 ns	171.9	172.2	175.1	166.3	172.4	171.4	173.1	172.1	170.7	172.3
TOFF_HS	50 to 180 ns	154.5	153.8	156.8	149.8	153.6	153.5	153.7	153.3	152.7	153.5
TR_HS	2 to 35 ns	19.7	20.0	19.8	19.7	19.9	19.8	19.8	20.0	19.7	19.9
TF_HS	2 to 25 ns	13.4	13.7	8.9	13.5	13.4	12.6	14.0	13.6	14.0	12.9
TSD_LS	50 to 180 ns	153.6	154.1	155.8	149.7	154.1	152.4	154.6	153.7	152.4	155
TSD_HS	50 to 180 ns	164.1	165.4	166.8	160.9	163.7	162.7	164.4	163.4	162.6	163.5
MT_ON	0 to 30 ns	4.8	6.6	4.7	5.9	5.7	5.0	6.3	6.2	4.1	5.9
MT_OFF	0 to 30 ns	3.4	4.9	1.7	5.0	4.5	3.5	4.9	4.3	4.2	4.5
VCCUV+pa	7.4 to 9.6 V	8.3	8.5	8.5	8.5	8.5	8.4	8.4	8.4	8.4	8.3
VCCUV-pa	7 to 9.4 V	8.1	8.2	8.3	8.2	8.2	8.1	8.1	8.2	8.2	8.1
VBSUV+pa	7.5 to 9.7 V	8.3	8.4	8.6	8.3	8.6	8.4	8.5	8.5	8.3	8.4
VBSUV-pa	7 to 9.4 V	8.0	8.1	8.3	8.1	8.3	8.2	8.2	8.3	8.0	8.2
IQDD1	0 to 30 uA	0.371	0.618	0.422	0.169	0.564	0.598	0.566	0.369	0.396	0.396
IQCC1	0 to 340 uA	130.9	133.1	133.3	124.6	133.0	130.9	132.6	131.3	128.4	131.4
IQBS1	0 to 230 uA	61.5	61.6	60.5	59.8	61.9	62.1	61.5	61.3	61.1	61.1
D_IQDD1	0 to 3 uA	0.104	0.005	0.081	0.293	0.015	0.025	0.026	0.084	0.083	0.009
D_IQCC1	0 to 30 uA	0.688	0.188	0.250	0.500	0.125	0.063	0.063	0.063	0.313	0.313
D_IQBS1	0 to 20 uA	0.813	0.188	0.813	0.875	0.188	0.313	0.125	0.313	0.375	0

INTERNATIONAL RECTIFIER
EL SEGUNDO, CALIFORNIA

CUSTOMER: IR
DEVICE : RIC7113L4
SPEC NO. : DOC:71-9837-17 REV:06 (c)SZ
JOB NO. : N/A

L.D.C. : 0002
LOT NO: B7603
DATE : 1/31/00
Location: POST SEE WL800762

TESTS	LIMITS	1	2 [F]	3 [F]	4	5	6	7	8	9	10
CONT_OPN	0 to 0	0	0	0	0	0	0	0	0	0	0
DIOD_SHT	0 to 0	0	0	0	0	0	0	0	0	0	0
V_MAX	425 to 990 V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I_LEAK	-1 to 50 uA	2.9	2.8	60.6 F	2.4	2.2	2.4	2.8	2.8	2.3	2.0
IQDD0	0 to 150 uA	0.409	0.634	0.582	0.642	0.404	0.668	0.539	0.456	0.616	0.552
IQCC0	0 to 1000 uA	117.5	11345 F	11344 F	112.6	118.8	118.3	118.5	117.6	115.4	118.1
IQBS0	0 to 230 uA	82.4	83.6	2336 F	80.9	83.1	83.8	82.9	82.5	82.0	81.7
IHIN0	0 to 1 uA	0.032	0.048	0.042	0.037	0.031	0.038	0.036	0.030	0.037	0.036
ILIN0	0 to 1 uA	0.032	0.047	0.043	0.036	0.029	0.038	0.035	0.030	0.036	0.035
ISD0	0 to 1 uA	0.040	0.043	0.049	0.034	0.036	0.036	0.030	0.038	0.031	0.029
IQDD1	0 to 150 uA	0.472	0.642	0.434	0.585	0.573	0.511	0.648	0.528	0.654	0.656
IQCC1	0 to 1000 uA	129.3	11360 F	11360 F	124.6	131.5	130.4	131.1	130.1	127.6	130.1
IQBS1	0 to 230 uA	61.1	83.4	2331 F	60.2	61.5	62.2	61.4	61.3	60.3	60.4
IHIN1	0 to 40 uA	31.3	31.9	32.5	30.1	32.0	32.0	31.8	31.7	30.8	30.7
ILIN1	0 to 40 uA	31.5	32.4	32.6	30.1	32.2	32.0	31.9	31.9	30.9	31.2
ISD1	0 to 40 uA	31.3	32.1	32.5	30.0	32.1	31.9	31.7	31.7	30.7	30.9
ILO+	2 to 5 A	2.3	4.5	6.0 F	2.4	2.3	2.3	2.3	2.3	2.3	2.3
ILO-	2 to 5 A	2.7	5.0	2.2	2.8	2.7	2.7	2.7	2.7	2.7	2.7
IHO+	2 to 5 A	2.1	1.2 F	2.9	2.2	2.1	2.1	2.1	2.1	2.1	2.1
IHO-	2 to 5 A	2.9	2.5	2.7	3.0	2.9	2.9	2.9	2.9	2.9	2.9
FN_15/15	1 to 1	1	0 F	0 F	1	1	1	1	1	1	1
VOH_LS	0 to 1.2 V	0.619	3.3 F	0.042	0.615	0.622	0.621	0.629	0.626	0.624	0.627
VOL_LS	-0.01 to 0.1 V	0	1.6 F	1.6 F	0	0	0	0	0	0	0
VOL_HS	-0.01 to 0.1 V	0	0	0	0	0	0	0	0	0	0
VOH_HS	0 to 1.2 V	0.594	15.0 F	15.0 F	0.589	0.602	0.598	0.605	0.602	0.597	0.604
Vth+HS	6 to 9.5 V	8.4	11.1 F	11.1 F	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Vth-HS	6 to 9.5 V	6.7	11.1 F	11.1 F	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Vth+LS	6 to 9.5 V	8.4	11.1 F	2.9 F	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Vth-LS	6 to 9.5 V	6.7	11.1 F	2.9 F	6.7	6.7	6.7	6.7	6.7	6.7	6.6
Vth+SD	6 to 9.5 V	8.4	2.9 F	11.1 F	8.4	8.4	8.4	8.4	8.4	8.4	8.4
TON_LS	50 to 180 ns	174.4	1245 F	-100180	168.7	175.3	174.1	176	174.7	172.1	175.2
TOFF_LS	50 to 180 ns	156.9	-100180	-100180	153.7	156.6	156.6	157	156.4	156.2	155.5
TR_LS	2 to 35 ns	15.7	3.3	-111160	15.1	15.2	15.3	14.7	15.0	15.6	15.3
TF_LS	2 to 25 ns	7.1	3.3	-111170	7.0	7.1	7.2	6.9	7.0	6.8	7.1
TON_HS	50 to 180 ns	168.1	176.6	1245 F	162.2	167.9	167.5	168.1	167.3	166.1	167.1
TOFF_HS	50 to 180 ns	147.6	198.5 F	-100180	143.5	146.4	146.6	147.1	146.2	146.2	145.8
TR_HS	2 to 35 ns	10.2	10.0	3.3	10.2	10.3	10.3	10.6	10.4	10.5	10.2
TF_HS	2 to 25 ns	10.6	9.7	3.3	10.7	10.7	10.4	10.6	10.5	10.3	10.2
TSD_LS	50 to 180 ns	151.5	-100180	-100180	147.4	151	150.7	152.5	151.2	149.8	150.6
TSD_HS	50 to 180 ns	152.8	173.8	-100180	148	151.4	151.9	151.7	152.5	150.8	150.9
MT_ON	0 to 30 ns	6.3	1068 F	101427	6.5	7.5	6.6	7.9	7.4	6.1	8.1
MT_OFF	0 to 30 ns	9.3	100383	0.690	10.2	10.2	10.0	9.8	10.1	10.0	9.7
VCCUV+pa	7.4 to 9.6 V	8.4	8.6	11.1 F	8.5	8.5	8.4	8.4	8.4	8.4	8.3
VCCUV-pa	7 to 9.4 V	8.1	8.3	11.1 F	8.3	8.3	8.1	8.1	8.2	8.2	8.1
VBSUV+pa	7.5 to 9.7 V	8.3	8.5	11.1 F	8.4	8.6	8.5	8.5	8.5	8.3	8.4
VBSUV-pa	7 to 9.4 V	8.0	8.2	11.1 F	8.1	8.4	8.2	8.2	8.3	8.0	8.2
IQDD1	0 to 30 uA	0.398	0.415	0.656	0.613	0.551	0.585	0.628	0.472	0.659	0.636
IQCC1	0 to 340 uA	129.6	11361 F	11362 F	124.4	131.4	130.4	131.3	130.2	127.7	129.9
IQBS1	0 to 230 uA	61.2	63.1	2284 F	60.1	61.7	61.8	61.3	61.2	60.4	60.6
D_IQDD1	0 to 3 uA	0.074	0.227	0.222	0.028	0.022	0.074	0.019	0.056	0.005	0.020
D_IQCC1	0 to 30 uA	0.250	1.1	2.6	0.250	0.125	0.063	0.250	0.125	0.063	0.250
D_IQBS1	0 to 20 uA	0.125	20.3 F	46.9 F	0.063	0.188	0.438	0.063	0.063	0.125	0.188

Appendix D

Test Plan

GROUP E INSPECTON
SUBGROUP 4
PERFORM THIS SUBGROUP AS A QUALIFICATION TEST
SINGLE EVENT EFFECTS
LOT SAMPLE = 3 DEVICES (PLUS 2 CORRELATION SAMPLES)
0 FAIL FOR EACH IRRADIATION CONDITION

	TEST AND METHOD	CONDITIONS AND NOTES
1.	**PRE-IRRADIATION ELECTS** 71-3539	SEE PRE RAD ELECTRICAL MEASUREMENTS **USE TEST PROGRAM - 70-8371**

TESTED:_____ TESTED BY: SEE DATA

PASSED:_____ DATE: SEE DATA

FAILED:_____ EQUIPMENT ID: SEE DATA

	TEST AND METHOD	CONDITIONS AND NOTES
2.	**SINGLE EVENT EFFECTS** HEAVY ION SOURCE 71-3539 EIA/JEDEC TEST METHOD 57 DYNAMIC BIAS 3 DEVICES PER IRRADIATION COND.	VDD = VCC = VB = 20V VS = 400V HIN = LIN =50 KHz SQUARE WAVE (20Vpk) LOAD AT HO AND LO = 1000pF SD = VSS = COM = 0V ALL VOLTAGES SHALL BE WITHIN ± 10% MONITOR BOTH SOFT AND HARD ERRORS LET = 36 MeV/(mg/cm2) ANGLE = 0° ENERGY = 290 MeV FLUX = 1E4 IONS/cm2/SEC FLUENCE = 1E6 IONS/cm2 THE ANGLE OF INCIDENCE MAY BE VARIED TO INCREASE THE EFFECTIVE LET.

TESTED:_____ TESTED BY: SEE DATA

EQUIPMENT ID: SEE DATA DATE: SEE DATA

GROUP E INSPECTON
SUBGROUP 4
(CONTINUED)
SINGLE EVENT EFFECTS
PERFORM THIS SUBGROUP AS A QUALIFICATION TEST
LOT SAMPLE = 3 DEVICES (PLUS 2 CORRELATION SAMPLES)
0 FAIL FOR EACH IRRADIATION CONDITION

	TEST AND METHOD	CONDITIONS AND NOTES
3.	**SINGLE EVENT EFFECTS** HEAVY ION SOURCE 71-3539 EIA/JEDEC TEST METHOD 57 STATIC BIAS 3 DEVICES PER IRRADIATION COND.	VDD = VCC = VB = 20V VS = 400V HIN = LIN = 0V LOAD AT HO AND LO = 1000pF SD = VSS = COM = 0V ALL VOLTAGES SHALL BE WITHIN ± 10% MONITOR HARD ERRORS LET = 36 MeV/(mg/cm2) ANGLE = 0° ENERGY = 290 MeV FLUX = 1E4 IONS/cm2/SEC FLUENCE = 1E6 IONS/cm2 THE ANGLE OF INCIDENCE MAY BE VARIED TO INCREASE THE EFFECTIVE LET.

TESTED:_____ TESTED BY: SEE DATA

EQUIPMENT ID: SEE DATA DATE: SEE DATA

4.	**ELECTRICAL MEASUREMENTS** 71-3539	SEE POST IRRADIATION ELECT. MEASUREMTS **USE TEST PROGRAM - 70-8371**

TESTED:_____ TESTED BY: SEE DATA

PASSED:_____ DATE: SEE DATA

FAILED:_____ EQUIPMENT ID: SEE DATA

TABLE 6
GROUP E INSPECTON
SUBGROUP 4
(CONTINUED)
PRE IRRADIATION TESTS AT 25°C

#	TEST NAME & SYMBOL	METHOD	CONDITION & NOTES	LIMITS		
				MIN	**MAX**	**UNITS**
1 .	**INPUT VOLTAGE THRESH** VIH(+ SLOPE) LO, HO VIL(- SLOPE) LO, HO VIH (+ SLOPE) SD		 5V≤ HIN=LIN ≤15V HIN=0V; LIN=15V 5V≤ SD ≤15V	 9.5 9.5	 6.0 	V
2 .	**OUTPUT VOLTAGE LEVEL** VOH LO, HO		HIN=LIN = VIH; VDD-VO IO = 0 A		1.2	
3 .	**OUTPUT VOLTAGE LEVEL** VOL LO, HO		HIN=LIN = VIL; VO IO = 0 A		0.1	
4 .	**OFFSET SUPPPLY LEAKAGE CURRENT** ILK		VS = VB = HO = 400V		50	µA
5 .	**QUIESCENT CURRENT** IQBS IQCC IQDD		 VIN=0V OR 15V;SD=15V		230 340 30	
6 .	**INPUT CURRENT** IIN+ HIN, LIN, SD IIN- HIN, LIN, SD		 VIN=15V VIN=0V		70 1	
7 .	**VBS UV LOCK OUT** VBSUV+ HO VBSUV- HO		LIN = 0V; 5V≤VBS≤15V HIN = 15V	 7.5 7.0	 9.7 9.4	V

Continued

8 .	**VCC UV LOCK OUT**					
	VCCUV+ LO, HO		LIN=HIN=15V; 5V≤VCC≤15V	7.4	9.6	
	VCCUV- LO, HO			7.0	9.4	
9 .	**OUTPUT SHORTED**		PW ≤ 10µS			
	IO+ (0V) LO, HO		LIN=HIN=15V; HO=LO=0V	2.0		A
	IO- (15V) LO, HO		LIN=HIN=0V; HO=LO=15V	2.0		

UNLESS OTHERWISE SPECIFIED: VCC=VDD=VB=15V, VS=VSS=COM=0V, AND SD=0V

TESTED:_____ TESTED BY: SEE DATA

PASSED:_____ DATE: SEE DATA

FAILED:_____ EQUIPMENT ID: SEE DATA

TABLE 6
GROUP E INSPECTON
SUBGROUP 4
(CONTINUED)
POST IRRADIATION TESTS AT 25°C

#	TEST NAME & SYMBOL	METHOD	CONDITION & NOTES	LIMITS		
				MIN	**MAX**	**UNITS**
1 .	**INPUT VOLTAGE THRESH**					
	VIH(+ SLOPE) LO, HO		5V≤ HIN=LIN ≤15V	9.5		
	VIL(- SLOPE) LO, HO				6.0	
			HIN=0V; LIN=15V			
	VIH (+ SLOPE) SD		5V≤ SD ≤15V	9.5		V
2 .	**OUTPUT VOLTAGE LEVEL**		HIN=LIN = VIH; VDD-VO			

Continued

	VOH LO, HO		IO = 0 A		1.2	
3 .	**OUTPUT VOLTAGE LEVEL**		HIN=LIN = VIL; VO			
	VOL LO, HO		IO = 0 A		0.1	
4 .	**OFFSET SUPPPLY LEAKAGE CURRENT**					
	ILK		VS = VB = HO = 400V		50	
5 .	**QUIESCENT CURRENT**					
	IQBS				1000	µA
	IQCC		VIN=0V OR 15V;SD=15V		1000	
	IQDD				100	
6 .	**INPUT CURRENT**					
	IIN+ HIN, LIN, SD		VIN=15V		70	
	IIN- HIN, LIN, SD		VIN=0V		1	
7 .	**VBS UV LOCK OUT**		LIN = 0V; 5V≤VBS≤15V			
	VBSUV+ HO		HIN = 15V	7.5	9.7	
	VBSUV- HO			7.0	9.4	V
8 .	**VCC UV LOCK OUT**		LIN=HIN=15V; 5V≤VCC≤15V			
	VCCUV+ LO, HO			7.4	9.6	
	VCCUV- LO, HO			7.0	9.4	
9 .	**OUTPUT SHORTED**		PW ≤ 10µS			
	IO+ (0V) LO, HO		LIN=HIN=15V; HO=LO=0V	2.0		A
	IO- (15V) LO, HO		LIN=HIN=0V; HO=LO=15V	2.0		

UNLESS OTHERWISE SPECIFIED: VCC=VDD=VB=15V, VS=VSS=COM=0V, AND SD=0V

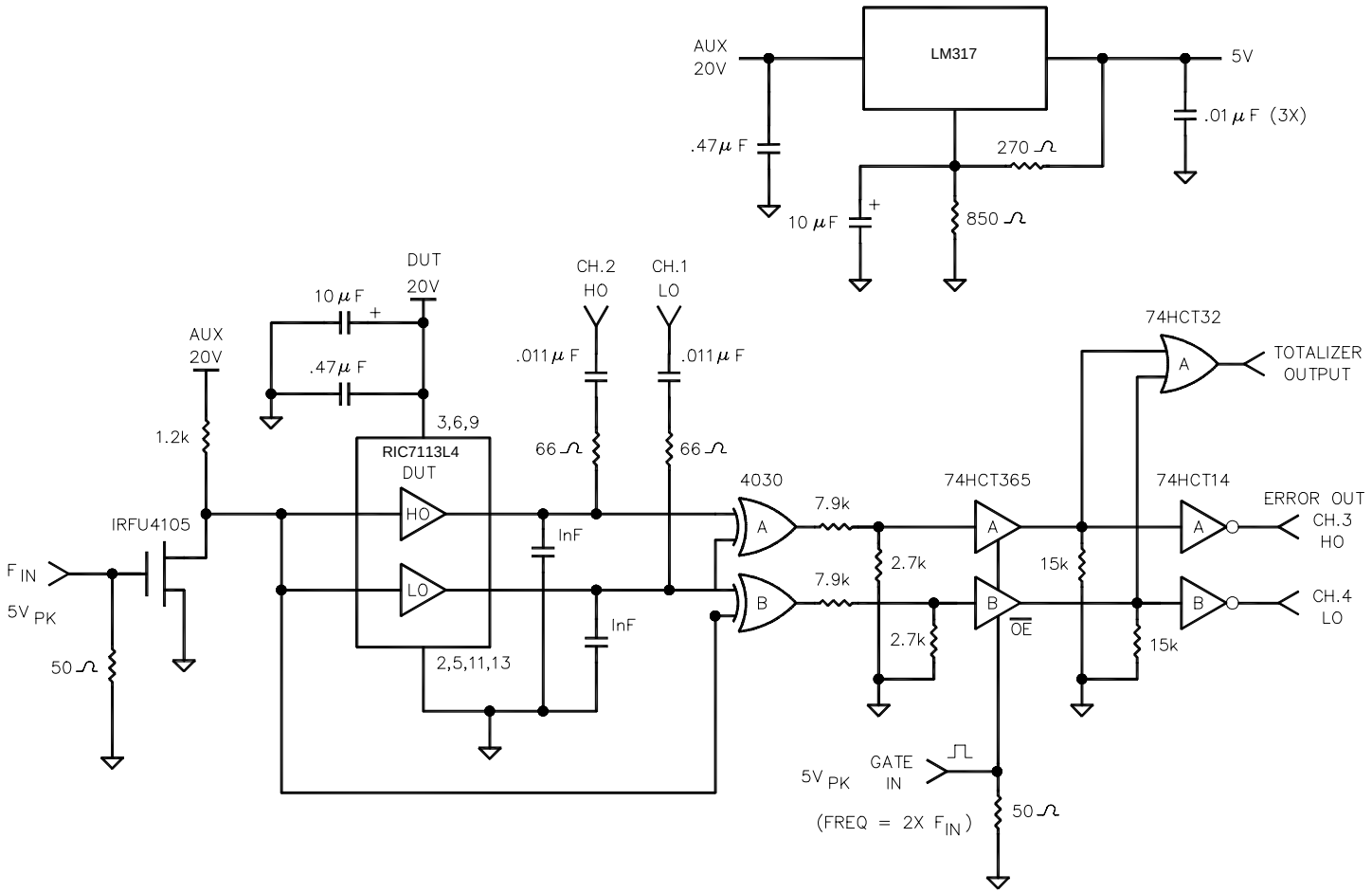
TESTED:_____ TESTED BY: SEE DATA

PASSED:_____ DATE: SEE DATA

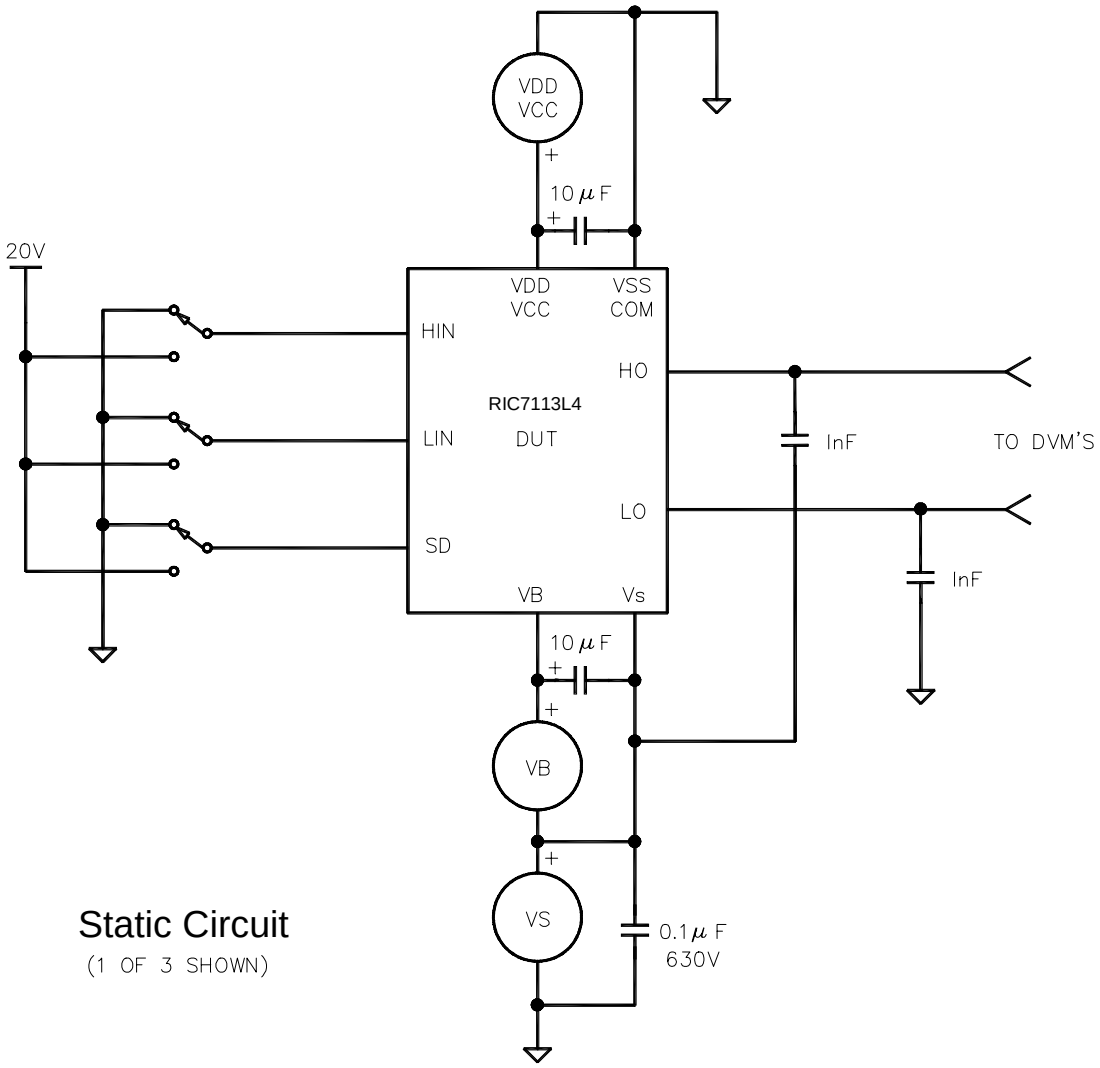
FAILED:_____ EQUIPMENT ID: SEE DATA

Appendix E

Test Circuit Schematics



Dynamic Circuit



Static Circuit
(1 OF 3 SHOWN)