





I C S Radiation Test Results  
IRHNJ57130 100V, N-CHANNEL POWER MOSFET (IRC)

dI/dT A/usec

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AVG DOSE RATE	rad(Si)/sec	INITIAL	1.44E+11	1.15E+12
AVG PULSE WIDTH	seconds		3.68E-08	3.61E-08

----- S/N -----

14	0.00E+00	3.40E+00	5.03E+01
23	0.00E+00	3.43E+00	4.97E+01
26	0.00E+00	3.47E+00	4.91E+01
32	0.00E+00	3.45E+00	4.91E+01
34	0.00E+00	3.46E+00	5.00E+01
37	0.00E+00	3.41E+00	5.03E+01
39	0.00E+00	3.35E+00	4.86E+01
41	0.00E+00	3.44E+00	4.97E+01
42	0.00E+00	3.38E+00	4.97E+01
46	0.00E+00	3.45E+00	4.91E+01

MINIMUM	0.00E+00	3.35E+00	4.86E+01
MEAN	0.00E+00	3.42E+00	4.96E+01
MAXIMUM	0.00E+00	3.47E+00	5.03E+01
+P 50/90	0.00E+00	3.44E+00	4.98E+01
-P 50/90	0.00E+00	3.41E+00	4.93E+01
+P 99/90	0.00E+00	3.56E+00	5.15E+01
-P 99/90	0.00E+00	3.29E+00	4.76E+01
SIGMA	0.00E+00	3.94E-02	5.90E-01

CIRCUIT INDUCTANCE (L1) 1uH 20uH

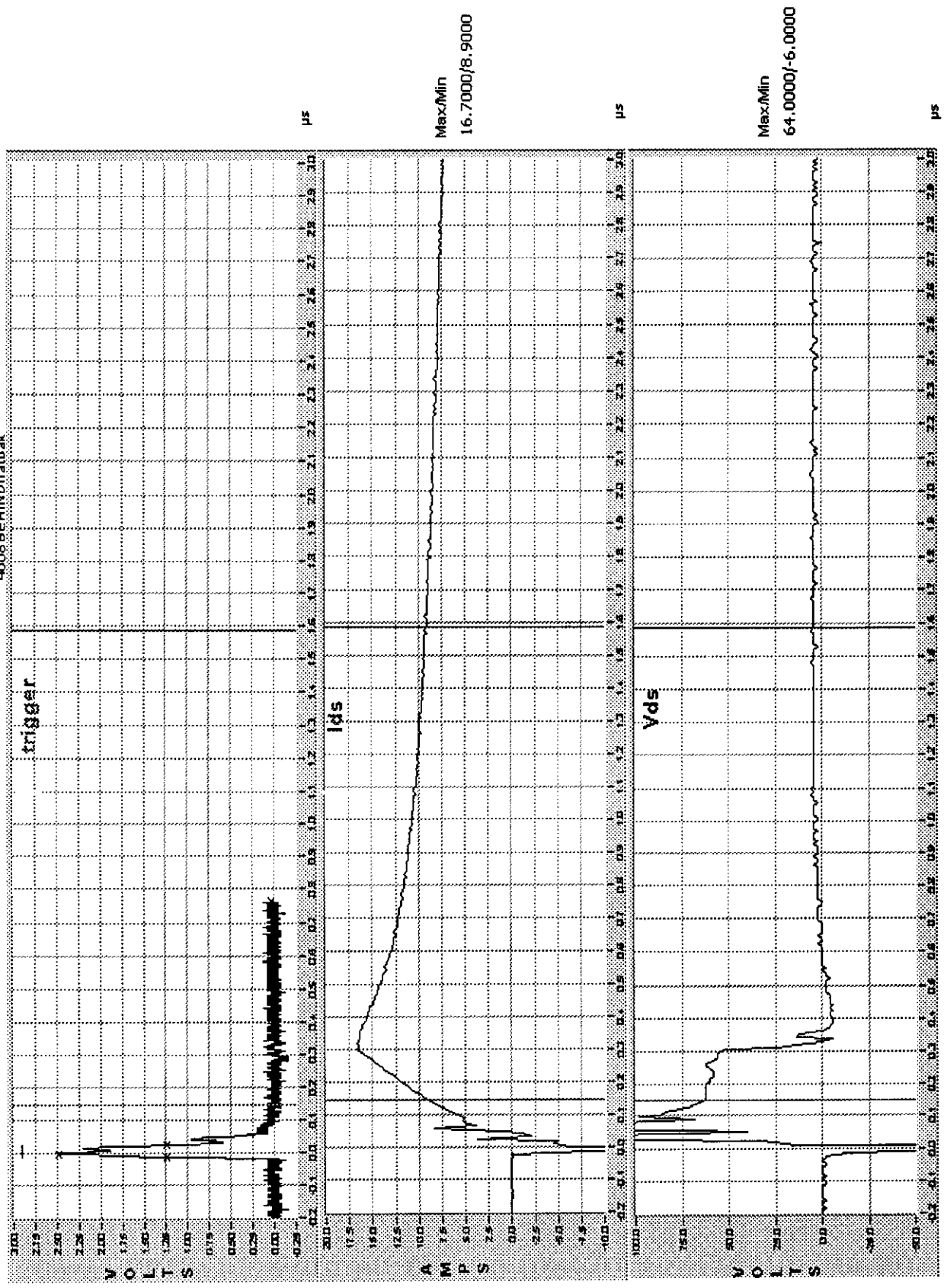
MAX VDSS Applied during pulse = 80 Volts

.....  
.  
. DEVICE TYPE IRHNJ57130 100V, PWR N-MOSFET (IRC).  
. RADIATION SOURCE BREL FX-75, E-Beam mode .  
.  
. D/C CIRC 01|| PACKAGE TO-3 || LOT# ER12942 .  
. LOG# 975 || TEST DATE 07/10/01|| RTP# 389 .  
.  
.....

I C S RADIATION TECHNOLOGIES, INC.



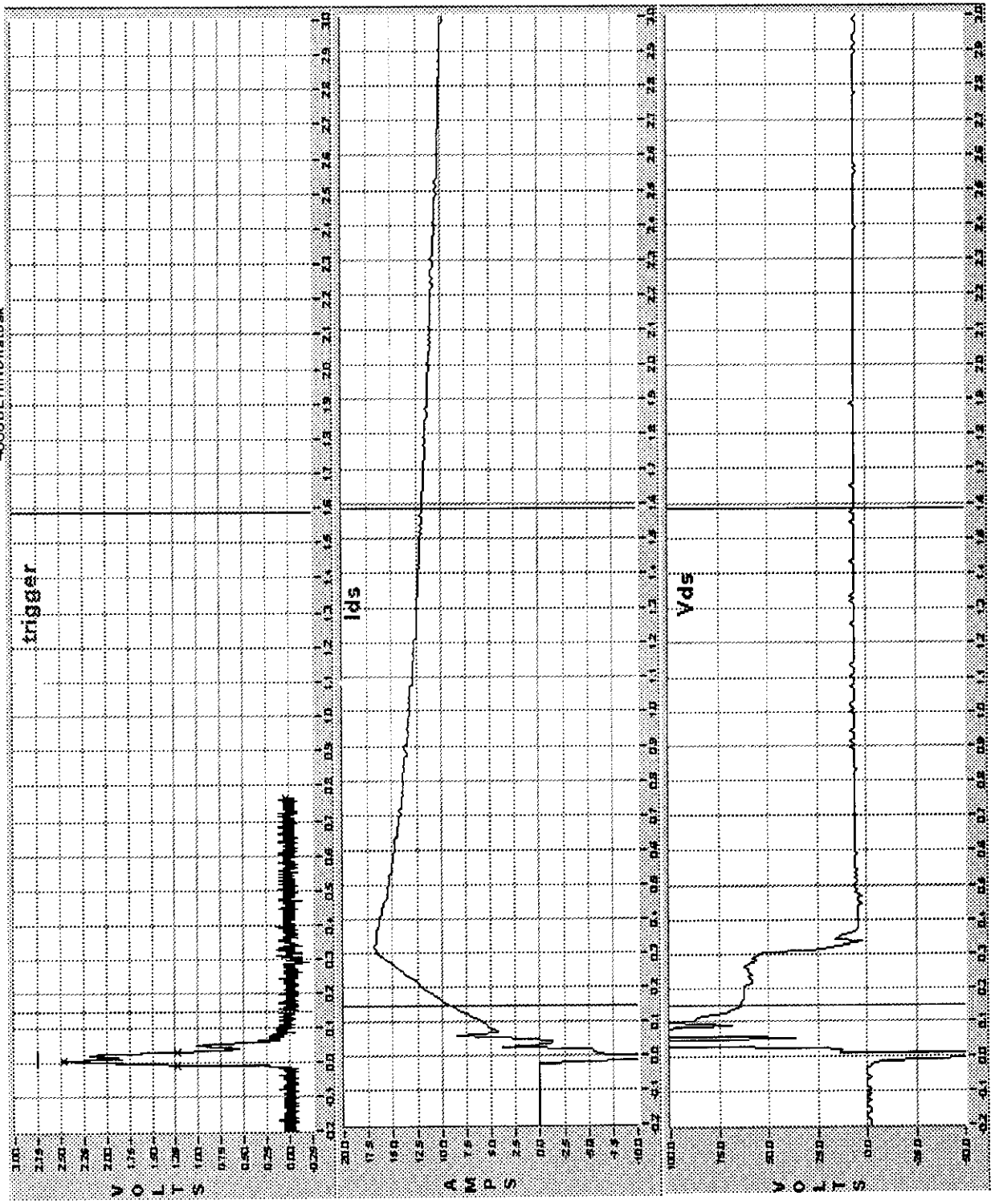
4608 BEHIND1a1oak



Part # IRHNJ57130  
Vcc Pre 80.0 Vcc Post 80.0  
Temperature 25.0°C  
SN 14 Shot 20  
Date: 7/11/2001 11:40 AM

FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington

4608BEHINDflatbak



µs

Max/Min  
16.9000/8.9000

µs

Max/Min  
64.0000/2.0000

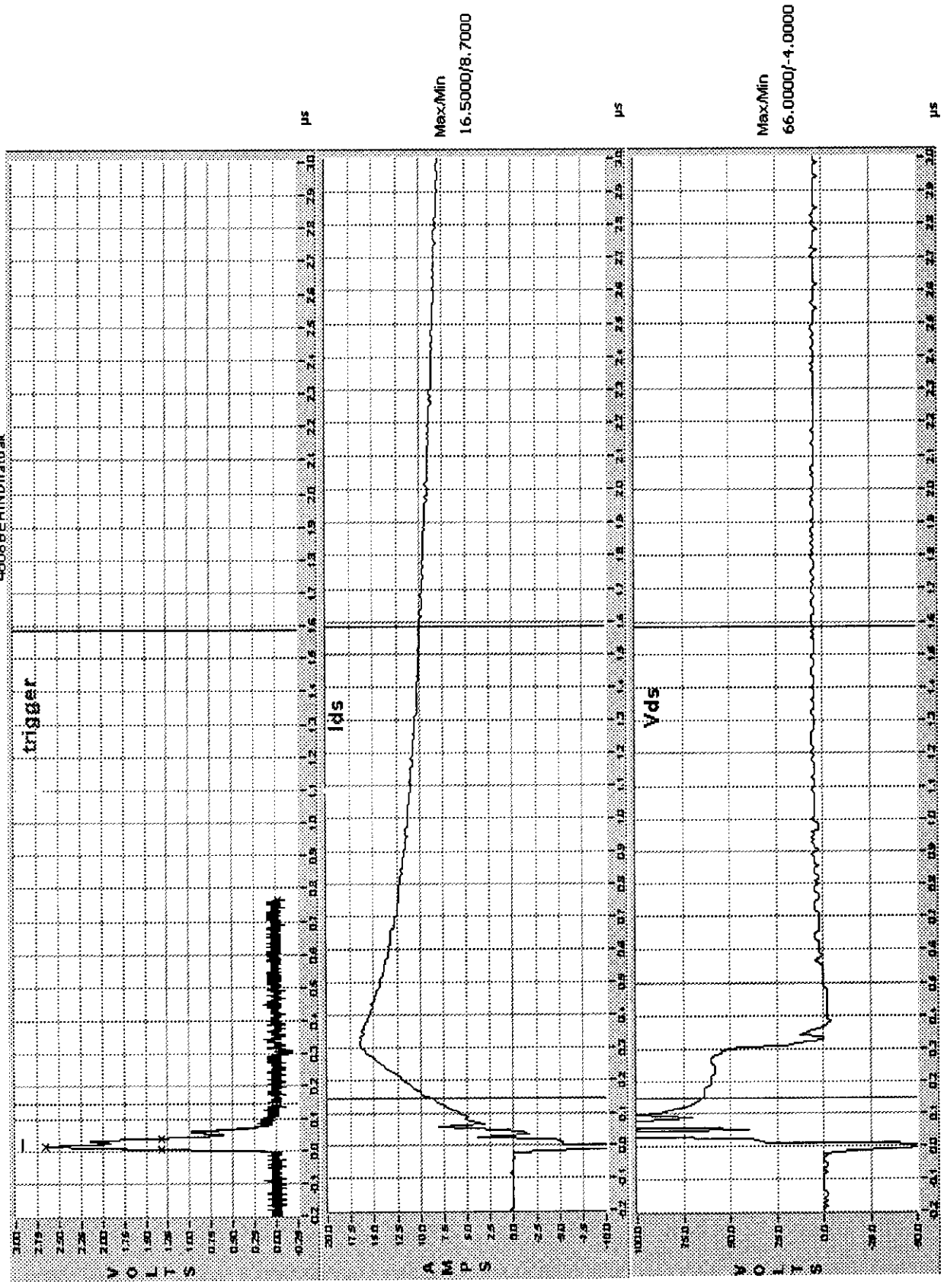
µs

Part # IRHNU57130  
Vcc Pre 80.0  
Vcc Post 80.0  
Temperature 25.0°C  
SIN 23  
Shot 14  
Date: 7/11/2001 10:50 AM

FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington

V (A)  
0.00001  
0.00001

46088EHIND1a.to.ak



μs

Max/Min  
16.5000/8.7000

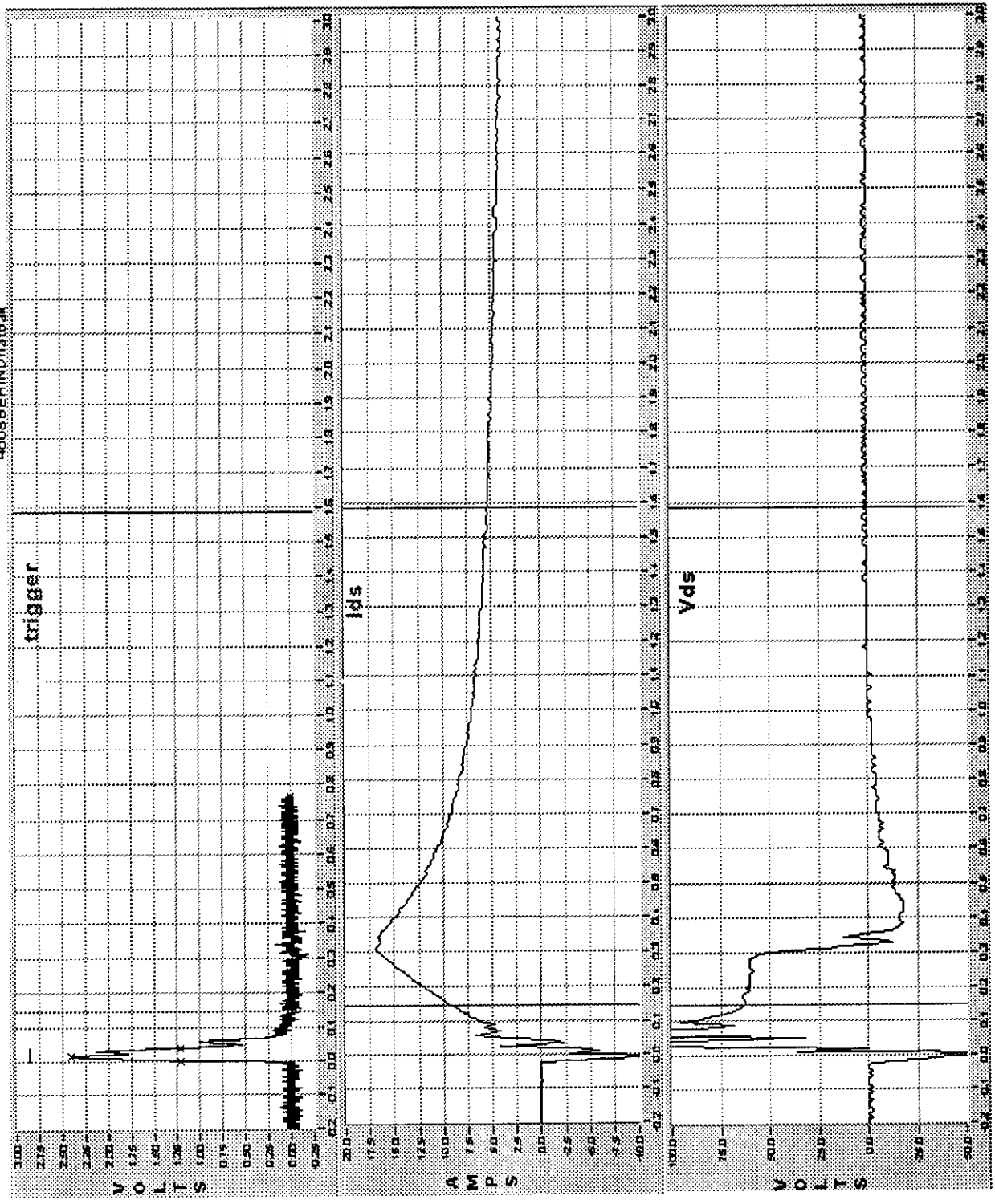
μs

Max/Min  
66.0000/-4.0000

μs

Part # IRHNJ57130  
Vcc Pre 80.0 Vcc Post -0.00000  
Y (A) 0.00000  
Temperature 25.0°C  
SIN 26 Shot 16  
Date: 7/11/2001 11:12 AM  
FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington

4608BEHINDflatok



Max/Min  
16.9000/5.3000

Max/Min  
64.0000/-18.0000

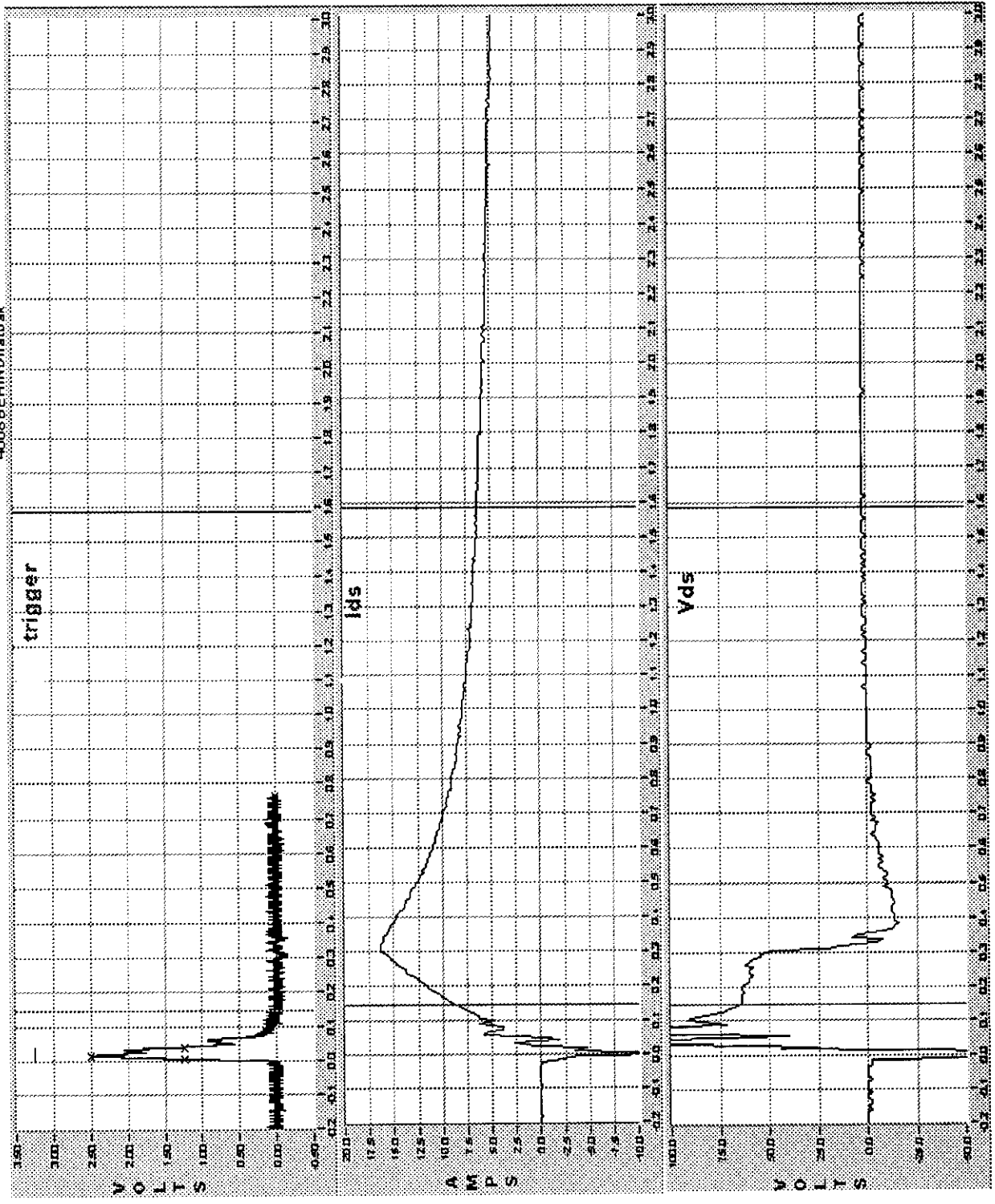
FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington  
Date: 7/11/2001 11:20 AM

Temperature 25.0°C  
SN 32 Shot 17

V (A)  
Vcc Pre 80.0 0.00001  
Vcc Post 80.0 0.00255

Part # IR4NU57130

4608EHINDI1a0ak



Max/Min  
16.3000/6.3000

Max/Min  
66.0000/-16.0000

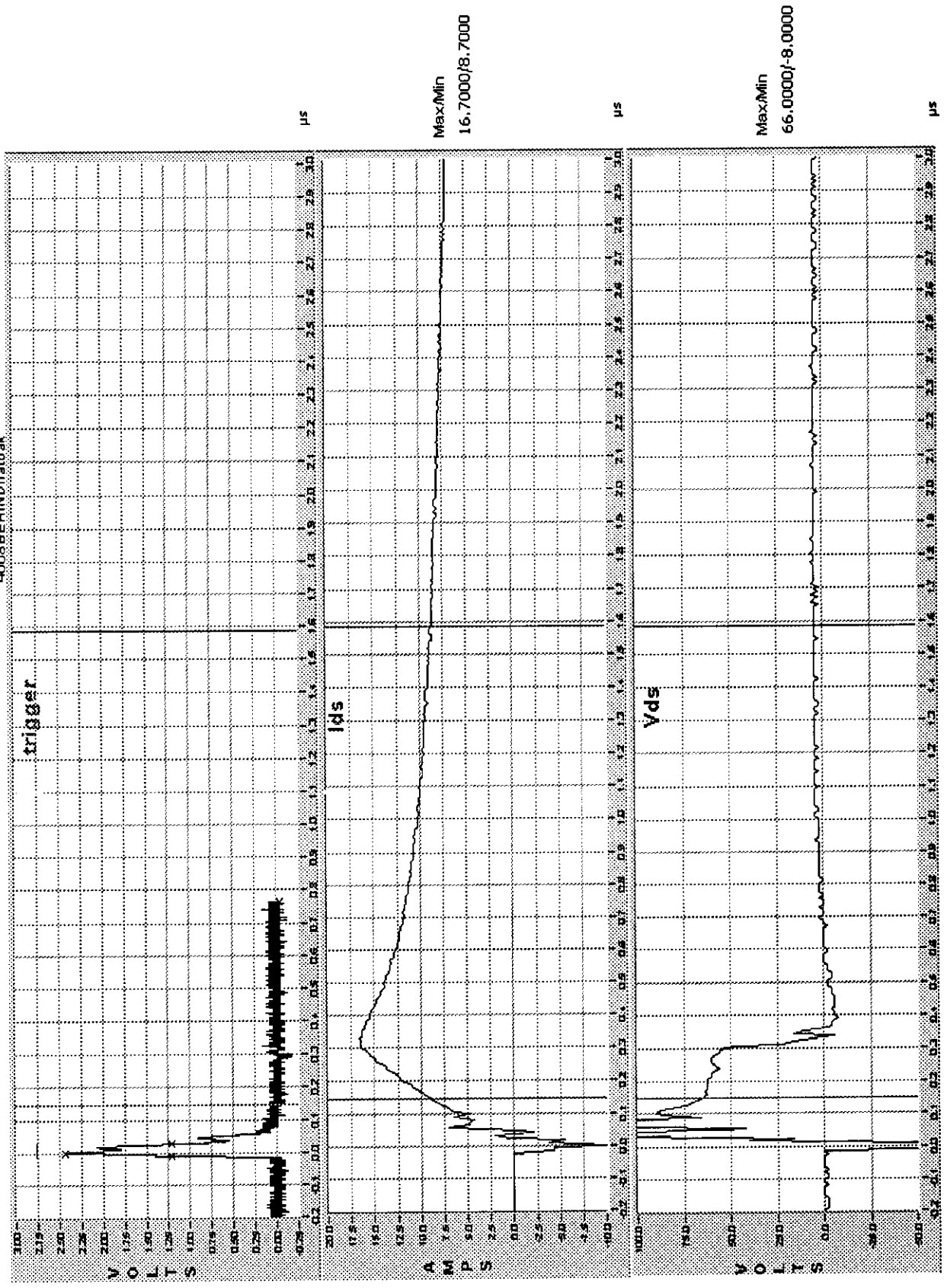
FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington  
Date: 7/11/2001 11:28 AM

Temperature 25.0°C  
SN 34 Shot 18

V (A)  
Vcc Pre 80.0 0.00000  
Vcc Post 80.0 0.00001

Part # IRHNU57130

4608BEHINDItoak



μs

Max/Min  
16.7000/8.7000

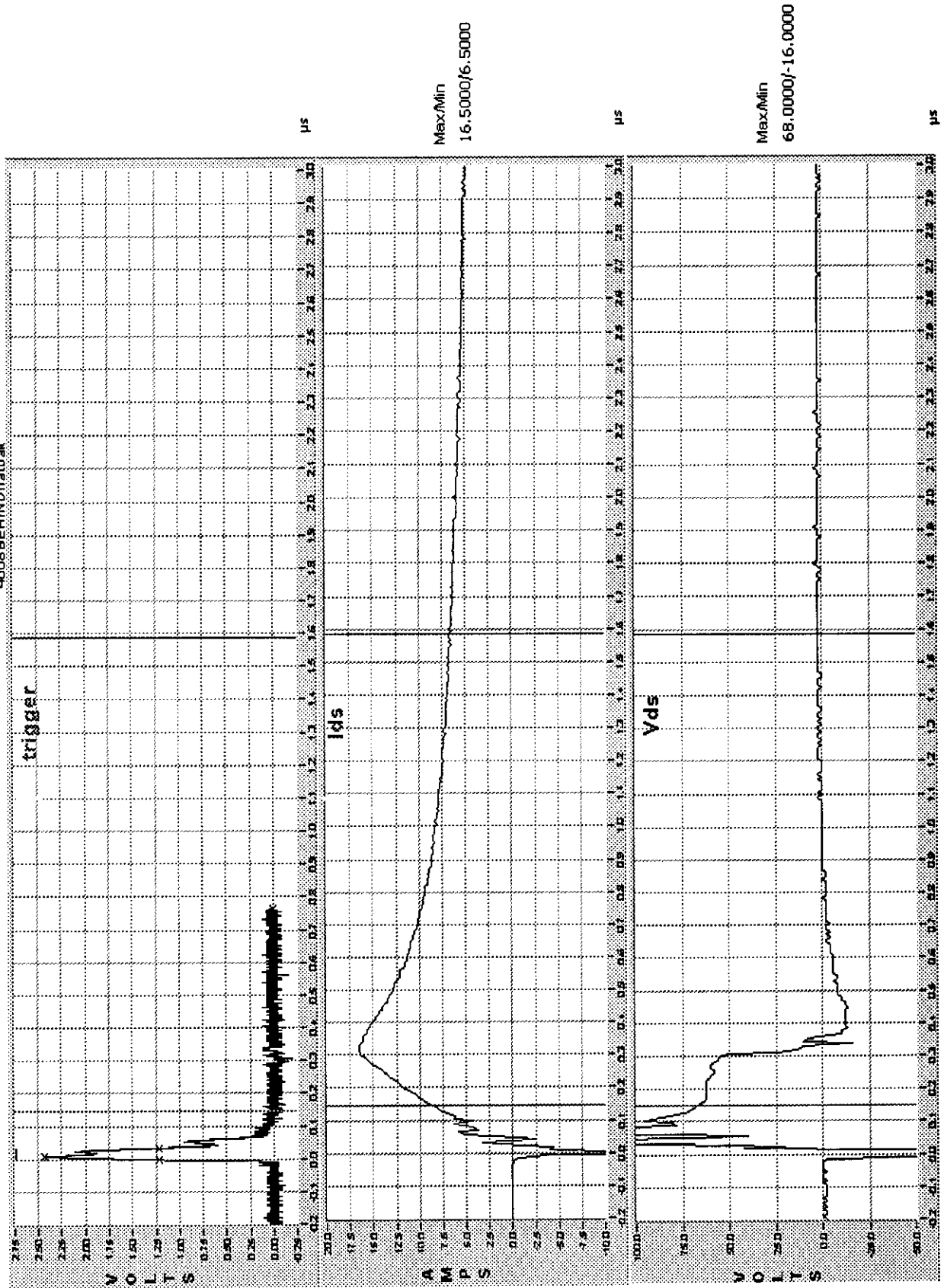
μs

Max/Min  
66.0000/-8.0000

μs

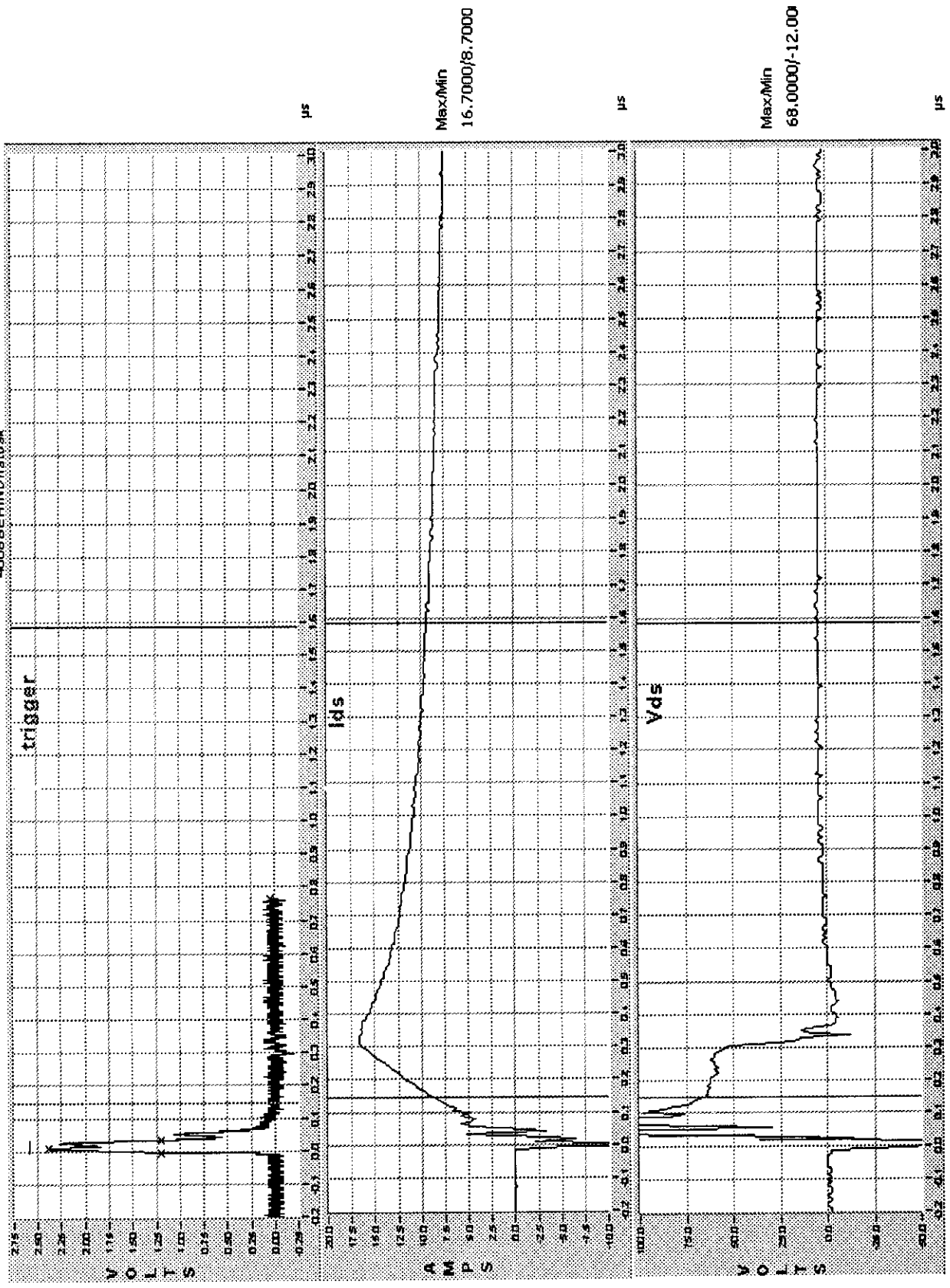
Part # IRHJ57130  
Vcc Pre 80.0 0.00001  
Vcc Post 80.0 0.00400  
Y I(A)  
Temperature 25.0°C  
SIN 37 Shot 24  
FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington  
Date: 7/11/2001 12:09 PM

4608BEHIND1a1o.ak



Part # IR4NJ57130  
Vcc Pre 80.0 Vcc Post 80.0  
Temperature 25.0°C  
SN 39 Shot 21  
Date: 7/11/2001 11:47 AM  
FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington

4608BEHIND11afo.ak



Max/Min  
16.7000/8.7000

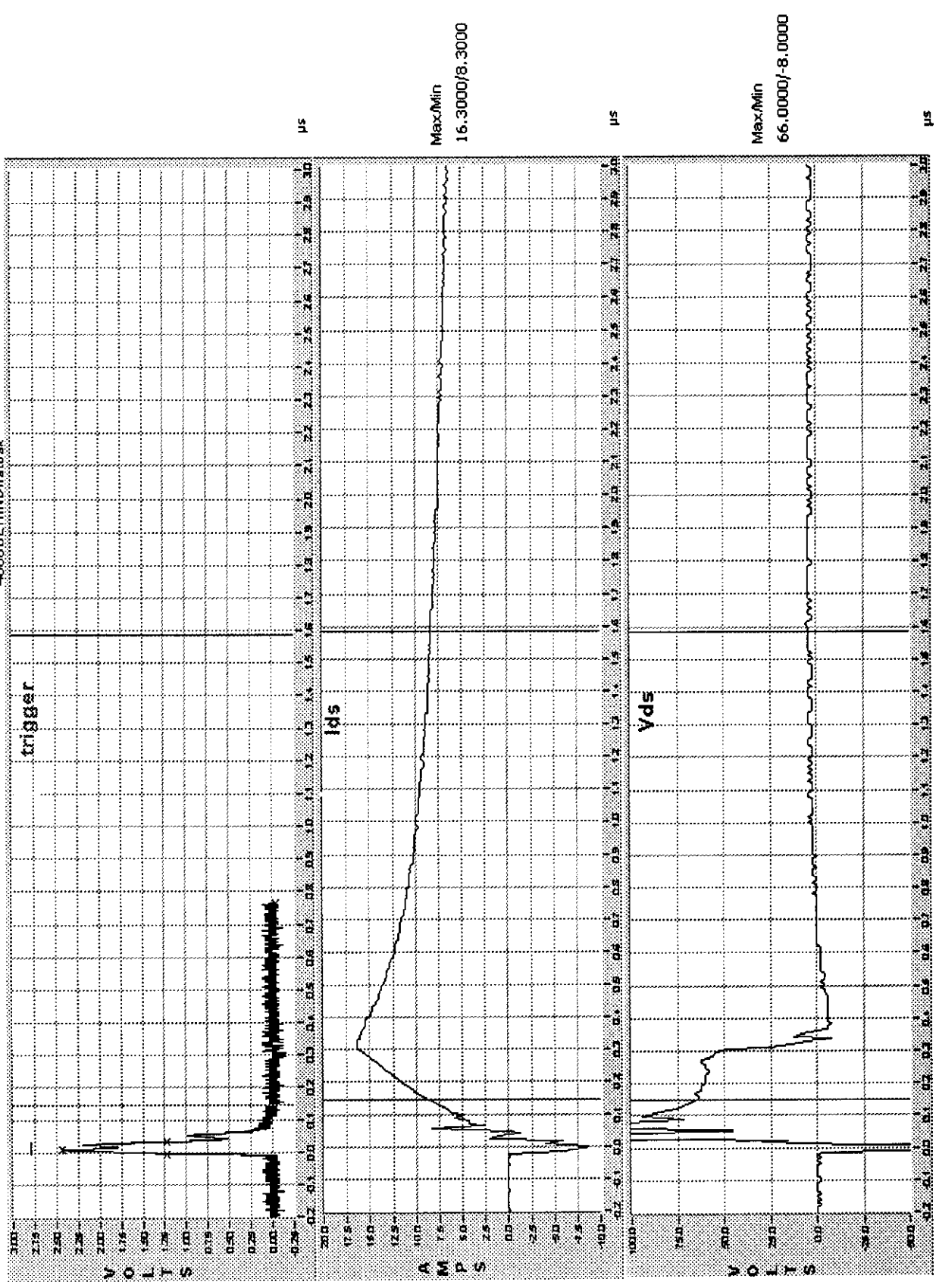
Max/Min  
68.0000/-12.00

Part # IRHNJ57130  
Vcc Pre 80.0  
Vcc Post 80.0  
Temperature 25.0°C  
SN 41  
Shot 22

V (A)  
0.00001  
0.00400

FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington  
Date: 7/11/2001 11:54 AM

4608BEHIND1a to ak



μs

Max/Min  
16.3000/8.3000

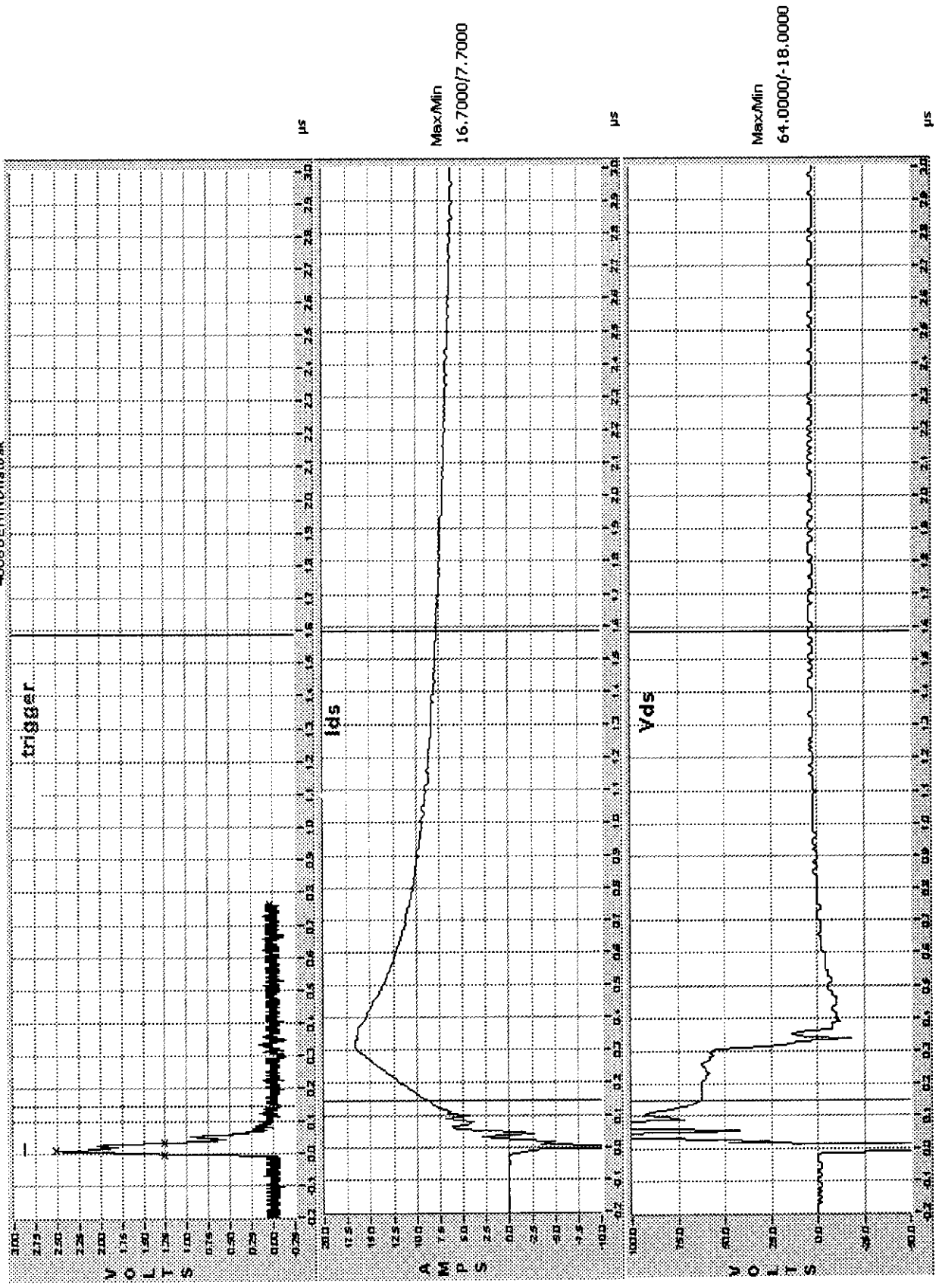
μs

Max/Min  
66.0000/-8.0000

μs

Part # IRHJ57130  
Temperature 25.0°C  
S/N 42 Shot 23  
FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington  
Date: 7/11/2001 12:01 PM

4608BEHINDflato.ak



Max/Min  
16.7000/7.7000

Max/Min  
64.0000/-18.0000

FX-75 E-Beam mode  
Boeing Radiation Effects Lab  
Seattle, Washington  
Date: 7/11/2001 11:32 AM

Temperature 25.0°C  
SN 46 Shot 19

V (A)  
Vcc Pre 80.0 0.00001  
Vcc Post 80.0 0.00001

Part # IRHU57130

RADIATION TEST PROCEDURE

Device Type: IRH1N57130 100V, N-CHANNEL POWER MOSFET  
 Manufacturer: IRC  
 Lot No: ER12942 Wafer# Date Code:  
 Package Type: TO-3  
 No. of Devices Supplied: 10  
 No. of Devices to be tested: 10

RADIATION CONDITIONS: MIL STD 883E, Method 1020/1021

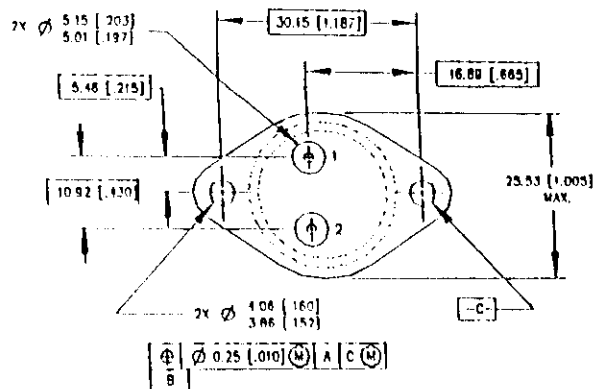
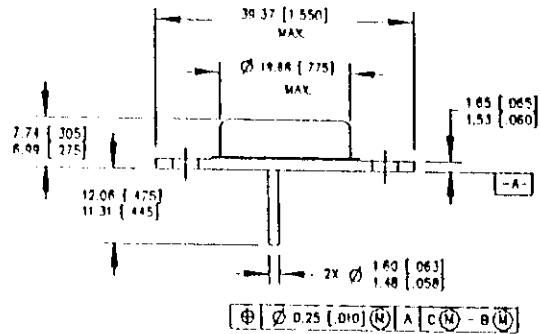
Facility: FX-75 Flash X-Ray (BREL) Energy: E-Beam Mode

AVG DOSE RATE [rad(Si)/sec]	1.54E+11	1.17E+12
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AVG PULSE WIDTH [Seconds]	3.64E-08	3.62E-08
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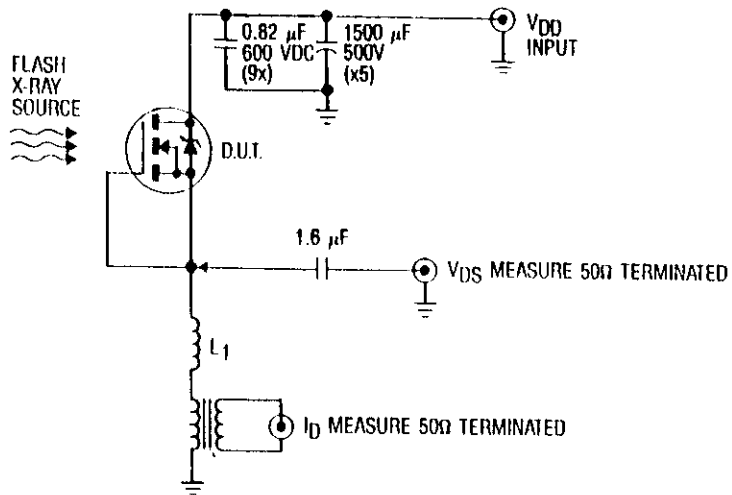
BIAS CONDITIONS DURING IRRADIATION:

- 1 SOURCE
- 2 GATE
- 3 DRAIN (Case)



RADIATION TEST PROCEDURE

Device Type: IRIINJ57130 100V, N-CHANNEL POWER MOSFET



High Dose Rate (Gamma Dot)  
Test Circuit

July 6, 2001

RADIATION TEST PROCEDURE

No. 389

**Device Type:**            **IRIHNJ57130 100V, N-CHANNEL POWER MOSFET**

<b>TEST NUMBER</b>	<b>TEST DESCRIPTION</b>	<b>DELTA LIMIT</b>	<b>TEST LIMITS</b>	
			<u>MIN</u>	<u>MAX</u>
<b>1</b>	<b>I<sub>pp</sub></b>			
<b>2</b>	<b>dI/dT</b>			

Measurements shall be made at room (ambient) temperature.

