

International Rectifier – Temecula Reliability Laboratory

QS-9000 and ISO-9000 Certified Facility; SQ-1000 Certified Laboratory

HEXFET America Facility: 41915 Business Park Drive Temecula, CA 92590 Phone 909-676-7500 Fax 909-676-9154

QUALIFICATION REPORT

Title	IRMX D-Pak/I-Pak Pb Free Plating Qualification (Hex 2.5)
Product/Part # *	Gen 3, 4, 5, 7 and 8 D-Pak/I-Pak devices
Qualification Level	Q101-Industrial (current qualification level)
Silicon Technology	FET/IGBT
Moisture Sensitivity	MSL1@260°C

REVISION HISTORY

#	Date	Author	Description of Changes
A	1/9/04	Rel Engr.	Initial Release

INTRODUCTION

In compliance with worldwide Industry initiative of “Lead Free” material for semiconductor fabrication, IR is proposing the conversion of the existing 85%Pb/15%Sn solder plating process to a more environment friendly 100% Sn plating process.

SUMMARY/CONCLUSION

Based on the results of reliability stress testing, D-Pak/I-Pak devices assembled with 100% Sn plating are qualified to the Industrial/Q101 level (current qualification level of standard device). The reflow temperature during surface mount of these devices should not exceed 260°C.

Reliability Engineer

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QUALIFICATION TEST RESULTS

Part Type	IRFU310
Tests	Test: Temperature Cycling R#: 2513A4, 6 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 2 lots x 77 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2513B4, 6 Conditions: 85°C/85%RH/100V Duration: 1000 hours Quantity: 2 lots x 77 devices Failures: 0 failures
	Test: Autoclave R#: 2513F4, 6 Conditions: 121°C/100%RH/15psig Duration: 96 hours Quantity: 2 lots x 77 devices Failures: 0 failures

Part Type	IRLR014
Tests	Test: Temperature Cycling R#: 2513A7 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 1 lot x 77 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2513B7 Conditions: 85°C/85%RH/48V Duration: 1000 hours Quantity: 1 lot x 77 devices Failures: 0 failures
	Test: Autoclave R#: 2513F7 Conditions: 121°C/100%RH/15psig Duration: 96 hours Quantity: 1 lot x 77 devices Failures: 0 failures

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Part Type	IRFR3711
Tests	Test: Temperature Cycling
	R#: 2513A3, 5
	Conditions: -55°C/150°C
	Duration: 1000 cycles
	Quantity: 2 lots x 77 devices
	Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB)
	R#: 2513B3, 5
	Conditions: 85°C/85%RH/16V
Duration: 1000 hours	
Quantity: 2 lots x 77 devices	
Failures: 0 failures	
Test: Autoclave	
R#: 2513F3, 5	
Conditions: 121°C/100%RH/15psig	
Duration: 96 hours	
Quantity: 2 lots x 77 devices	
Failures: 0 failures	