

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	Micro-3 Pb free plating Qualification
Product/Part # *	Gen-5 and Gen-8 Micro3 devices
Qualification Level	Consumer
MSL	MSL1 @ 260°C
Silicon Technology	FET

REVISION HISTORY

#	Date	Author	Description of Changes
A	3/15/04	Rel Engr.	Initial Draft

INTRODUCTION

In compliance with worldwide Industry initiative of “Lead Free” material for semiconductor fabrication, IR is proposing the conversion of the existing 70-90Sn, Bal=Pb solder plating process to a more environment friendly 100% Sn plating process for the assembly of Micro-3 devices.

SUMMARY/CONCLUSION

Based on the results of reliability stress testing, the Micro-3 devices assembled with 100%Sn plating are qualified to Consumer Level.

The surface mount reflow temperature for these devices should not exceed 260°C.

Reliability Engineer

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 TEST RESULTS

Part Type	IRLML5103
Tests	Test: Temperature Cycling R#: 2804A3 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2804B3 Conditions: 85°C/85%RH/-24V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Reverse Bias R#: 2804C3 Conditions: 150°C/-24V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Gate Bias R#: 2804D3 Conditions: 150°C/-16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures

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

Part Type	IRLML2804
Tests	Test: Temperature Cycling R#: 2804A4 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2804B4 Conditions: 85°C/85%RH/24V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Reverse Bias R#: 2804C4 Conditions: 150°C/24V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Gate Bias R#: 2804D4 Conditions: 150°C/16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures

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

Part Type	IRLML2502
Tests	Test: Temperature Cycling R#: 2804A1 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2804B1 Conditions: 85°C/85%RH/16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Reverse Bias R#: 2804C1 Conditions: 150°C/16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Gate Bias R#: 2804D1 Conditions: 150°C/9.6V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures

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

Part Type	IRLML6401
Tests	Test: Temperature Cycling R#: 2804A2 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2804B2 Conditions: 85°C/85%RH/-9.6V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Reverse Bias R#: 2804C2 Conditions: 150°C/-9.6V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Gate Bias R#: 2804D2 Conditions: 150°C/-9.6V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures

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

Part Type	IRLML2402
Tests	Test: Temperature Cycling R#: 2804A5 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2804B5 Conditions: 85°C/85%RH/16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Reverse Bias R#: 2804C5 Conditions: 150°C/16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Gate Bias R#: 2804D5 Conditions: 150°C/16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures

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

Part Type	IRLML6402
Tests	Test: Temperature Cycling R#: 2804A6 Conditions: -55°C/150°C Duration: 1000 cycles Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Humidity, High Temperature Reverse Bias (H3TRB) R#: 2804B6 Conditions: 85°C/85%RH/-16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Reverse Bias R#: 2804C6 Conditions: 150°C/-16V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures
	Test: High Temperature Gate Bias R#: 2804D6 Conditions: 150°C/-9.6V Duration: 1000 hours Quantity: 1 lot x 55 devices Failures: 0 failures