GOVERNMENT - INDUSTRY DATA EXCHANGE PROGRAM

ALERT

1. TITLE *(Class, Function, Type, etc.)*		2. DOCUMENT NUMBER
Hybrid, AMA Series, Cold Operation		**FV5-A-14-01**
		3. DATE *(DD-MMM-YY)*
		26-Aug-14
4. MANUFACTURER AND ADDRESS	5. PART NUMBER	6. NATIONAL STOCK NUMBER
International Rectifier, HiRel	**See attached**	**Not Applicable**
2520 Junction Ave	7. SPECIFICATION	8. TYPE DESIGNATOR
San Jose, CA 95134	**MIL-PRF-38534**	**QML**
	9. LOT DATE CODE START	10. LOT DATE CODE END
	01XX	**1433**
11. MANUFACTURER'S POINT OF CONTACT	12. CAGE	13. MANUFACTURER'S FAX
Granville C. Rains	**52467**	**( )**
14. MFR. POC PHONE	15. MANUFACTURER'S E-MAIL	
(408) 434-5086	**grains1@irf.com**	
16. CROSS REFERENCE VENDOR	17. CROSS REFERENCE CAGE	18. CROSS REFERENCE PART
No Applicable	**Not Applicable**	**Not Applicable**

19. PROBLEM DESCRIPTION / DISCUSSION / EFFECT

International Rectifier (IR) has received a field report indicating a performance issue at -55C with some AMA hybrids. Specifically, some units failed to meet the Turn-On Overshoot parameter at -55C which resulted in an OVER-Voltage event in the customer's application. The hybrids were soaked at an ambient temperature of -55C for 30 minutes before the test. Refer to figure 1 and 2 below for reference.

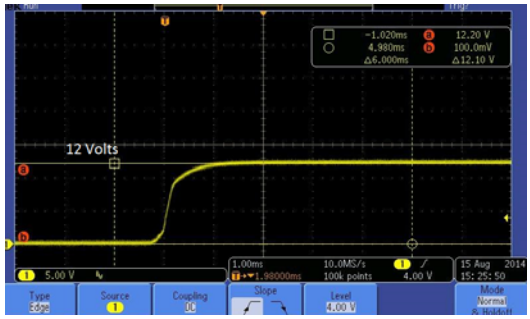

Fig 1 - Normal Turn-On Overshoot at -55C

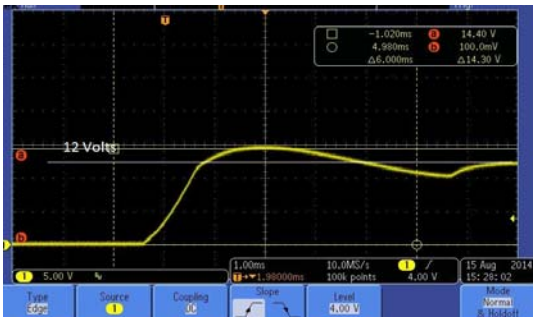

Fig 2 - Abnormal Turn-On Overshoot at -55C

20. ACTION TAKEN/PLANNED

1) An internal investigation was performed by IR which confirmed the issue. A total of 15 AMA series hybrids with date codes ranging from 2009 through 2013 were obtained for extended cold temperature testing. All 15 units failed the Turn-On Overshoot parameter at -55C. The soak temperature was then gradually increased to measure Turn-On Overshoot during cold operation - the following results were obtained: 5 units passed at -50C, 10 units passed at -45C, 12 units passed at -40C, 14 units passed at -35C and all 15 units passed at -30C.

2) The Turn-On Overshoot is related to the in-circuit magnetic core performance at cold. In order to ensure AMA performance at cold temperatures, IR will now test the inductance characteristics across the converter's operating frequency range during magnetic assembly and screen versus the previous single point.

3) The typical soak time at cold during production is less than 1 minute which is sufficient to bring all components internal to the device to the specified temperature as required by MIL-STD-883 paragraph 4.5.9.2, but is insufficient to detect the latency issue within the original magnetic core used in this model series. In addition to ensuring magnetic assemblies are adequately screened, IR will perform extended temperature soak tests on a sample basis at the hybrid level to ensure the AMA performance at cold, I.E. First and last Hybrid as a minimum of each assembly lot will be evaluated at an extended temperature soak to ensure the lots performance.

4) Customers in receipt of the AMA product listed herein are requested to evaluate their application to determine if their circuit is sensitive to the potential of a Turn-on Over shoot during normal operations at cold. For technical consultations customers may contact IR for additional details via the normal customer service channels.

5) This GIDEP Alert has been reviewed and coordinated with DLA-VQH prior to its release.

21. DATE MFR. NOTIFIED	22. MANUFACTURER'S RESPONSE	23. ORIGINATOR ADDRESS/POINT OF CONTACT
N/A	☐ REPLY ATTACHED ☐ NO REPLY	**Manager, Quality Assurance- Granville C. Rains** **International Rectifier** **2520 Junction Ave** **San Jose, CA 95134**

24. GIDEP REPRESENTATIVE	25. SIGNATURE	26. DATE
Granville C. Rains	G. C. Rains	**Sept 4th, 2014**

20. ACTION TAKEN/PLANNED

Affected Material:

SMD No.	IR PN	Part Description
5962-0424701	AMA2805S	DC/DC CONVERTER, SINGLE CHANNEL, 5 VOLT, HYBRID
5962-0424801	AMA2812S	DC/DC CONVERTER, SINGLE CHANNEL, 12 VOLT, HYBRID
5962-0424901	AMA2815S	DC/DC CONVERTER, SINGLE CHANNEL, 15 VOLT, HYBRID
5962-0425001	AMA2812D	DC/DC CONVERTER, DUAL CHANNEL, +/-12 VOLT, HYBRID
5962-0425101	AMA2815D	DC/DC CONVERTER, DUAL CHANNEL, +/-15 VOLT, HYBRID

Custom No.
8613
8616
8688
10314FM
10347FM
10349FM
10459FM
10460FM

Other IR PN
AMA2805D/EM
AMA2805D
AMA2812D/CH
AMA2812D/EM
AMA2815D/EM
AMA2805S/CH
AMA2805S/EM
AMA2805R5S/EM
AMA2806S
AMA2806S/EM
AMA2812S/EM
AMA2812S/CH
AMA2815D/CH
AMA2815S/CH
AMA2815S/EM