



## **Product Change Notices**

**PCN No.: 20150201**

**Date: Feb. 3, 2015**

**Subject: Add new LF SOP-8(12R) for SOP-8 package**

This is to inform you that AME add new LF(Lead Frame) SOP-8(12R) for SOP-8 package with below conditions:

1. AME ensure this new LF SOP-8(12R) is 100% in compliance with AME product specifications.
2. AME had qualified this new LF SOP-8(12R) with reliability test.
3. The Part Number of each product is unchanged, but identification via D/C is available.

This notification is for your information and concurrence.

If you require AME Qual/Rel data or samples to qualify this change, please contact AME, Inc. directly or through AME's authorized Sales Representative or Distributor.

Please note this PCN will be effective 30 days after the issuing date automatically if we do not receive any response, comment or questions from you.

If you have any questions concerning this change, please contact:

### **PCN Originator:**

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The expected 1st affected shipment date is March 15 2015

### **Reason of Change:**

Adding new SOP-8(12R ) LF is to expand throughput.



Qual/Rel Report:

Test Item	Method	Description	Result
MSL	IPC/JEDEC J-STD-020D	85/85 168 hours, IR-reflow 3 cycles Peak Temp.= 260°C	MSL1
HTS	JESD22-A103C	150°C, 1000 hrs	Pass
THT (85/85)	JESD22-A101C	85°C, 85% RH, 1000hrs, without bias	Pass
PCT	JESD22-A102C	121°C, 100% RH, 2atm, 168hrs	Pass
TCT	JESD22-A104D	-65°C ~ 150°C, 500 cycles, DWELL=15min	Pass
Solderability	J-STD-002C	Temp.=260°C, Duration=5sec	Pass
IR-reflow	JESD22-A113F	See IR reflow Profile, Perform 3 cycles test	Pass



# Reliability Report for SOP-8 (L/F: 12R) Series Product

**Approved by**

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Manager

**Prepared by**

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Supervisor



## **Conclusion:**

The SOP-8 L/F: 12R series product has successfully met AME's reliability standard that is required on all AME, Inc products.

Furthermore, QRA Dept. of AME, Inc monitors the reliability continuously to make sure that all SOT-223 series product will still meet AME's reliability standard in the future.

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## I 、 Package Reliability Test Result:

Test Item	Test Condition	Sample Size / Failures	Result
MSL	85/85 168 hours IR-reflow 3 cycles Peak Temp.= 260°C IPC/JEDEC J-STD-020D	22 pcs / 0 pcs	Level 1
HTS	Precondition <sup>NOTE 1</sup> Temp.=150°C Duration=1000 hours Unbiased, Read at 1000 hours	77 pcs / 0 pcs	Pass
THT	Precondition <sup>NOTE 1</sup> Temp.=85°C, R.H.=85% Duration=1000 hours Unbiased, Read at 1000 hours	77 pcs / 0 pcs	Pass
PCT	Precondition <sup>NOTE 1</sup> Temp.=121°C, R.H.=100% 15PSIG, Unbiased Duration=168 hours Read at 168 hours	77 pcs / 0 pcs	Pass
TCT	Precondition <sup>NOTE 1</sup> -65°C ~ 150°C 500 cycles Unbiased, Read at 500 cycles	77 pcs / 0 pcs	Pass
Solderability	Temp.=260°C (lead-free) Duration=5sec	5 pcs / 0 pcs	Pass

**NOTE 1:** 85/85 168 hours + IR-reflow 3 cycles with Peak Temp.= 260°C

## II 、IR-reflow Test Result:

Test Item	Test Condition	Sample Size / Failures	Result
IR-reflow	See IR reflow Profile Perform 3 cycles test	22 pcs / 0 pcs	Pass

IR reflow Profile:

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate ( $T_{s_{max}}$ to $T_p$ )	3°C/second max.
<b>Preheat</b> - Temperature Min ( $T_{s_{min}}$ ) - Temperature Max ( $T_{s_{max}}$ ) - Time ( $t_{s_{min}}$ to $t_{s_{max}}$ )	150°C 200°C 60~180 seconds
<b>Time maintained above</b> - Temperature ( $T_L$ ) - Time ( $t_L$ )	217°C 60~150 seconds
Peak/Classification Temperature ( $T_p$ )	260°C
Time within 5°C of actual Peak Temperature ( $t_p$ )	20~40 seconds
Ramp-Down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

