

**PROCESS CHANGE NOTICE**  
 **PRODUCT CHANGE NOTICE**

**MAXIM INTEGRATED** HEREBY ISSUES NOTIFICATION OF CHANGE  
 THAT MAY AFFECT THE FOLLOWING CATEGORIES:

<input type="checkbox"/> DESIGN	<input type="checkbox"/> WAFER FAB	<input checked="" type="checkbox"/> ASSEMBLY	<input type="checkbox"/> TEST	<input type="checkbox"/> ELEC/MECH SPECS
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**AFFECTED PRODUCT:**

Ordering P/N: (See PN listing XLS in PCN ZIP file)
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CHANGE FROM: Single-sourced Tin-Lead (SnPb) terminal finish plating in UTAC Thai Limited (UTL) for 6 and 8 lead flip chip SOT23	CHANGE TO: Moving to Tin-Lead (SnPb) terminal finish plating in Carsem. Optionally, the equivalent lead-free terminal finish devices are available at UTL or can be made available. Please contact your Maxim Integrated Salesperson for the correct part number.
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**JUSTIFICATION:** UTL will no longer offer SnPb terminal finish to address environmental concerns regarding hazardous materials effective end of 2014. UTL will continue to supply Pb-free terminal finish versions of these devices.

Maxim has qualified Carsem for SnPb terminal finish plating assembly site. However, as the countries around the world continue to implement sticker ban on the content of hazardous materials, it is uncertain on how long Carsem will continue to run SnPb terminal plating. Maxim encourages our customers to convert to the equivalent Pb-free terminal finish device.

**TRACEABILITY:** Maxim Integrated maintains full traceability by device marking, packaging labels and shipment documents.

Maxim Integrated's Change Notification System is designed to keep our customer base apprised of major product, manufacturing, or facility improvements.



Deborah Meeker / PCN Coordinator

For further information, please contact either of the people listed below.

**Contact your local Maxim Integrated Company Representative** or Deborah Meeker, PCN Coordinator  
 408-601-5618 / [pcn.coordinator@maximintegrated.com](mailto:pcn.coordinator@maximintegrated.com)

Qualification  
 Evaluation

Report#: R25402FQR  
Date: 11/1/11

## MAXIM RELIABILITY QUALIFICATION REPORT

### SUBJECT

Carsem-M Malaysia 6L Flip Chip SOT Quasi Lead-Free Package Qualification with internal High-Lead Solder Bump.

### PURPOSE

To qualify 6L flip chip SOT package assembled at Carsem-M using Chipbond high-lead (95%Pb/ 5%Sn) solder bump (6 mil HT X 8 mil D) over 75%Pb/ 25%In high temperature solder paste by Indium Corporation, 100% matte tin lead finish material, copper alloy leadframe and Hitachi CEL9220HF13 molding compound. MAX1832EUT#TG16 was used as a test vehicle.

### SUMMARY

All qualification lots have shown good reliability performance. Therefore, Carsem-M Malaysia 6L flip chip SOT quasi lead-free package is qualified for production using Chipbond high-lead bump.

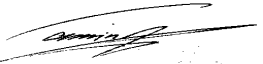


Lead-Tin (PbSn) lead finish 6/8L flip chip SOT packages at Carsem-M are also qualified by extension from this qualification result.

### TEST RESULTS/ LOT INFORMATION:

TEST	REL#: 25402A	REL#: 25402B	REL#: 25402C
	DEVICE: MAX1832EUT#TG16	DEVICE: MAX1832EUT#TG16	DEVICE: MAX1832EUT#TG16
	DIE: PY51Z	DIE: PY51Z	DIE: PY51Z
	LOT#: J0LAE3012Q1	LOT#: J0LAE3012Q2	LOT#: J0LAE3012Q3
	D/C: 1101	D/C: 1101	D/C: 1101
LIFE TEST	1000 HRS – 0/45	1000 HRS – 0/45	1000 HRS – 0/45
CONVECTION REFLOW *1	0/250	0/250	0/250
TEMP CYCLE *2	1000X - 0/77	1000X - 0/77	1000X - 0/77
HIGH TEMP STORAGE *2	1000 HRS – 0/77	1000 HRS – 0/77	1000 HRS – 0/77
HAST *2	100 HRS - 0/45	100 HRS - 0/45	100 HRS - 0/45
SOLDER SHOCK	0/15	0/15	0/15
RESISTANCE TO SOLDERING HEAT	0/15	0/15	0/15
PHYSICAL DIMENSIONS	0/15	0/15	0/15

Note: \*1 – Level 1 soak (85°C/85%R.H. for 168hrs) is used as preconditioning.

\*2 – Convection solder reflow at 260°C Tp. is used as preconditioning.

 Faisal Amin AMTS, Reliability Engineer	 Alex Arreola PMTS, Reliability Engineer	 Ping Lin Director, Reliability
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**SOT 23 Flipchip BOM Comparison (SnPb External Lead finish and Pb-free Lead finish)**

<b>Assembly Supplier</b>	<b>UTL SnPb Lead Finish</b>	<b>UTL Pb-free Lead Finish</b>	<b>Change</b>
<b>Package Type</b>	SOT23 Flipchip Leaded External lead finish	SOT23 Flipchip Lead-free External lead finish	YES
<b>Leadframe type</b>	Copper	Copper	NONE
<b>Die Attach type (conductive/non-conductive)</b>	Conductive	Conductive	NONE
<b>Die Attach Brand</b>	75%Pb/25%Indium	75%Pb/25%Indium	NONE
<b>Mold Compound</b>	Sumitomo G600	Sumitomo G600	NONE
<b>Lead finish</b>	85%Sn/15%Pb	100% Sn (Pb-free)	YES
<b>Marking type</b>	Laser	Laser	NONE
<b>Die thickness</b>	12 mils	12 mils	NONE

**SOT 23 Flipchip BOM Comparison (SnPb External Lead finish)**

<b>Assembly Supplier</b>	<b>UTL SnPb Lead Finish</b>	<b>Carsem SnPb Lead Finish</b>	<b>Change</b>
<b>Package Type</b>	SOT23 Flipchip Leaded External lead finish	SOT23 Flipchip Leaded External lead finish	NONE
<b>Leadframe type</b>	Copper	Copper	NONE
<b>Die Attach type (conductive/non-conductive)</b>	Conductive	Conductive	NONE
<b>Die Attach Brand</b>	75%Pb/25%Indium	75%Pb/25%Indium	NONE
<b>Mold Compound</b>	Sumitomo G600	Hitachi CEL9220HF13	YES
<b>Lead finish</b>	85%Sn/15%Pb	85%Sn/15%Pb	NONE
<b>Marking type</b>	Laser	Laser	NONE
<b>Die thickness</b>	12 mils	12 mils	NONE