

Product Change Notification - CYER-18SMGE942

Date: 08 Aug 2013

Product Category: Analog (Thermal, Power Management & Safety)

Notification subject: CCB 1320.01 Initial Notice: Qualification of 3L SOT-223 with conductive die attach at ATP assembly site.

Notification text:

PCN Status:
Initial notification

Microchip Parts Affected:
See attachments of affected catalog part numbers (CPN) labeled as...
PCN_CYER-18SMGE942_Affected_CPN.xls
PCN_CYER-18SMGE942_Affected_CPN.pdf

Description of Change:
Qualification of 3L SOT-223 with conductive die attach at ATP assembly site.

Impacts to Data Sheet:
Yes – The package outside dimensions will be revised.

Reason for Change:
To improve on time delivery performance

Change Implementation Status:
In Progress

Estimated First Ship Date:
October 18, 2013 (date code: 1342)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Markings to Distinguish Revised from Unrevised Devices:
Traceability code

Revision History:
August 8, 2013: Issued initial notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachment(s):

PCN_CYER-18SMGE942_Affected_CPN.pdf
PCN_CYER-18SMGE942_Qual Plan.pdf
PCN_CYER-18SMGE942_Affected_CPN.xlsx



QUALIFICATION PLAN

PCN #: CYER-18SMGE942

**Date:
July 17, 2013**

**Qualification of 3L SOT-223 with conductive die attach
at ATP assembly site.**

Distribution

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Purpose: _____ Qualification of 3L SOT-223 with conductive die attach at ATP assembly site.

MP code: _____ VKAB1

Part No.: _____ MCP1790

BD No: _____ BDM-000364 rev.A (Engineering BD)

CCB No: _____ 1320.01

Package:

Type _____ 3L SOT-223

Width or Size _____ N/A

Die thickness: _____ 11 mils

Die size: _____ 62.5 x 63.4 mils

Lead frame:

Paddle size: _____ 133 x 102 mils (ASM Hongkong)

Material _____ C194

Surface _____ Ag ring

Process _____ Etched

Lead Lock _____ Yes

Part Number _____ 101377161

Wire:

Material _____ Au (Heesung South Korea)

Die Attach Epoxy:

Part Number _____ 8290 (Henkel South Korea)

Conductive _____ Yes

Mold Compound: _____ G700LS (Sumitomo Singapore)

Reliability Test plan: _____ See attached, STD Package Reliability Test plan on each package.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Standard Pb-free Solderability	JESD22B-102E; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability—SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Standard SnPb Solderability	JESD22B-102E; Perform 8 hour steam aging prior to testing. Standard SnPb: SnPb finish, SnPb solder, wetting temp 215°C for SMD & 245°C for through hole packages.	22	5	1	27	> 95% lead coverage	5	
Backward Solderability	JESD22B-102E; Perform 8 hours steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.	22	5	1	27	> 95% lead coverage	5	
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5	30 bonds from a minimum of 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	
HTSL (High Temp Storage Life)	+175 C for 504 hours or 150°C for 1008 hrs. Electrical test pre and post stress at +25C and hot temp. (Parts can be tested at Room temp only)	45	5	1	50	0	10	Must be in progress at time of package release to production, but completion is not required for release to production.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jecel-STD-020D for package type; Electrical test pre and post stress at +25°C. Perform SAM analysis using the standard sample size. MSL-1 @ 260°C	231	15	3	738	0	15	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.
HAST	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp. (Parts can be tested at Room temp only)	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Unbiased HAST	+130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs	77	5	3	246	0	10	
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress. (Parts can be tested at Room temp only)	77	5	3	246	0	15	