Product Change Notification - RMES-31VQKE033

Date:

10 Jun 2019

Product Category:

Linear Regulator ICs; Depletion Mode MOSFETs

Affected CPNs:

Notification subject:

CCB 3458 Final Notice: Qualification of GTBF as a new assembly site for selected products available in 3L TO-220 package using 277 x 221 mils paddle size.

Notification text:

PCN Status:

Final notification

PCN Type:

Manufacturing Change

Microchip Parts Affected:

Please open one of the icons found in the Affected CPNs section above.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls)

Description of Change:

Qualification of GTBF as a new assembly site for selected products available in 3L TO-220 package using 277 x 221 mils paddle size.

Pre Change:

Assembled at CARSEM using 2815A die attach, HCL-12S lead frame with 240 x 180 mils paddle size and CEL9240HF-10CM molding compound material

Post Change:

Assembled at GTBF using CRM-1800 die attach, LY80 lead frame with 277 x 221 mils paddle size and EME-G600 molding compound material

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Carsem (M) SDN BHD (CARM)	Great Team Backend Foundry (Dong Guan) Ltd. (GTBF)
Wire material	Au wire	Au wire
Die attach material	2815A	CRM-1800
Molding compound material	CEL9240HF-10CM	EME-G600
Lead frame material	HCL-12S	LY80
Lead frame paddle size	240 x 180 mils	277 x 221 mils

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve on-time delivery performance by qualifying GTBF as a new assembly site using 277 x 221 mils paddle size. CARM assembly site will no longer have manufacturing support for 3L TO-220 package.

Change Implementation Status:
In Progress
Estimated First Ship Date:
July 10, 2019 (date code: 1928)
Time Table Summary:

	August 2018					>	June 2019					July 2019				
Workweek	31	32	33	34	35		22	23	24	25	26	27	28	29	30	31
Initial PCN Issue Date		X														
Qual Report Availability									X							
Final PCN Issue Date									X							
Estimated Implementation Date													X			

Method to Identify Change:
Traceability code
Qualification Report:
Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.
Revision History:
August 09, 2018: Issued initial notification.
May 22, 2019: Re-issued initial notification. Added Lead frame paddle size information in notification subject, description of change and Pre and Post change summary table. Updated qualification plan to change the qual vehicle.
June 10, 2019: Issued final notification. Attached the qualification report and added estimated first ship date to July 10, 2019.
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_RMES-31VQKE033_Qual_Report.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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Affected Catalog Part Numbers (CPN)

CL6N5-G
DN2535N5-G
DN2540N5-G

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: RMES-31VQKE033

Date:
May 24, 2019

Qualification of GTBF as a new assembly site for selected products available in 3L TO-220 package using 277 x 221 mils paddle size.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of GTBF as a new assembly site for selected products available in 3L TO-220 package using 277 x 221 mils paddle size.
CN	ES289548
QUAL ID	Q19057 Rev. A
MP CODE	630039F8XB00
Part No.	DN2540N5-G
Bonding No.	BDM-002084 Rev. A
CCB No.	3458
Package	
Type	3L TO-220
Die thickness	11 mils
Die size	43.40 x 43.40 mils
Lead Frame	
Paddle size	277 x 221 mils
Material	LY80
Surface	Spot Ag
Process	Stamped
Lead Lock	Yes
Part Number	A1-TO220-3-3CFAGLC
Die attach material	
Epoxy	CRM-1800
Wire	Au wire
Mold Compound	EME-G600
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
GTBF194900032.000	TMPE218115653.600	19104MC
GTBF195000001.000	TMPE218115653.600	19114ME
GTBF195000002.000	TMPE218115653.600	19114PB

Result [X] Pass [ ] Fail [ ] ____________________

3L TO-220 assembled by GTBF pass reliability test per QCI-39000.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Electrical Test	**Electrical Test:**+25°C System: IMPACT	JESD22-A113	693(0)	693		Good Devices
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification	JESD22-A104		231		
	Electrical Test: + 25°C System: IMPACT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 4.0 grams)		15 (0)	0/15	Pass	
	Bond Shear (18.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		
	Electrical Test: +25°C System: IMPACT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 42.0 Volts System: HAST 6000X	JESD22-A110		231		
	Electrical Test: +25°C System: IMPACT		231(0)	0/231	Pass	77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test: +25°C System: IMPACT		45(0)	0/45	Pass	
Solderability Temp 245°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 **Solder Dipping**: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Bond Strength Data Assembly	Wire Pull (> 4.0 grams)	M2011 JESD22-B116	30 (0) Wires	0/30	Pass	
	Bond Shear (18.00 grams)		30 (0) bonds	0/30	Pass	