Product Change Notification / CAAN-22MOEJ783

Date:

15-May-2024

Product Category:

Power Management - PWM Controllers, Ultrasound MOSFET Drivers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6816 Final Notice: Qualification of NSEB as a new assembly site for HV9150K6-G, MD1820K6-G, MD1821K6-G and MD1822K6-G catalog part numbers (CPN) available in 16L VQFN (3x3x0.9mm) package.

Affected CPNs:

CAAN-22MOEJ783_Affected_CPN_05152024.pdf
CAAN-22MOEJ783_Affected_CPN_05152024.csv

Notification Text:

PCN Status: Final Notification

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the files found in the Affected CPNs section.
Note: For your convenience Microchip includes identical files in two formats (.pdf and .xls)

Description of Change: Qualification of NSEB as a new assembly site for HV9150K6-G, MD1820K6-G, MD1821K6-G and MD1822K6-G catalog part numbers (CPN) available in 16L VQFN (3x3x0.9mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Carsem (Suzhou) (CARC)	UTAC Thai Limited (UTL-1) LTD. (NSEB)
Wire Material	Au	Au
Die Attach Material	QMI519	558-2C31
Molding Compound Material	EME-G770HCD	G700LTD
Lead-Frame Material	A194	EFTEC-64T
Lead-Frame Design	See Pre and Post Change Comparison	
DAP Surface Prep	Ag spot	Ag on lead only

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve on-time delivery performance by qualifying NSEB as new assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: June 17, 2024 (date code: 2425)

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

Time Table Summary:

	January 2024					>	May 2024					June 2024				
Workweek	01	02	03	04	05		18	19	20	21	22	23	24	25	26	27
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: January 25, 2024: Issued initial notification.
May 15, 2024: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on June 17, 2024.

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

Attachments:

PCN_CAAN-22MOEJ783_Qual Report.pdf
PCN_CAAN-22MOEJ783_Pre and Post Change Summary.pdf

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

Terms and Conditions:

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If you wish to change your PCN profile, including opt out, please go to the PCN home page select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

HV9150K6-G
MD1820K6-G
MD1821K6-G
MD1822K6-G

CCB 6816
Pre and Post Change Summary
PCN #:CAAN-22MOEJ783

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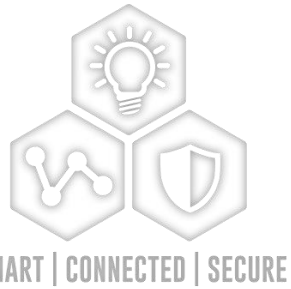
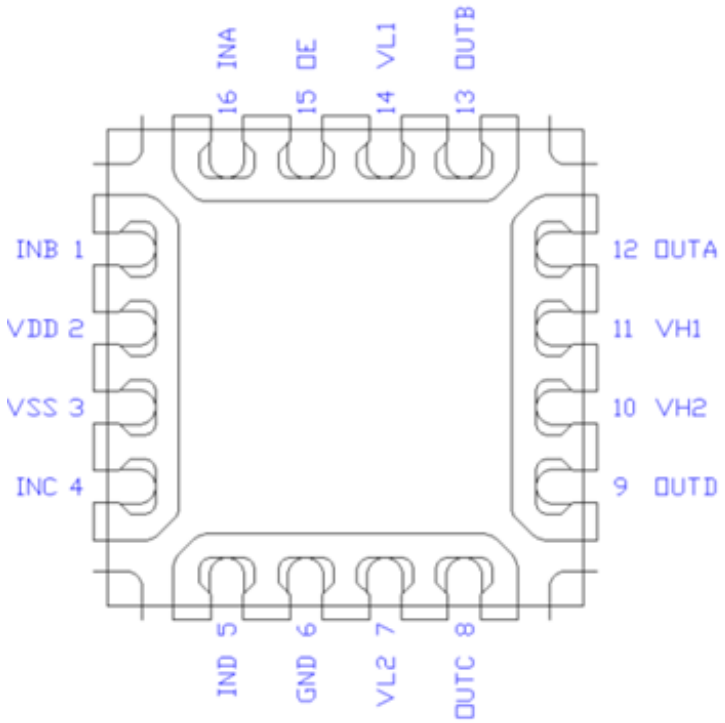


LEAD FRAME COMPARISON

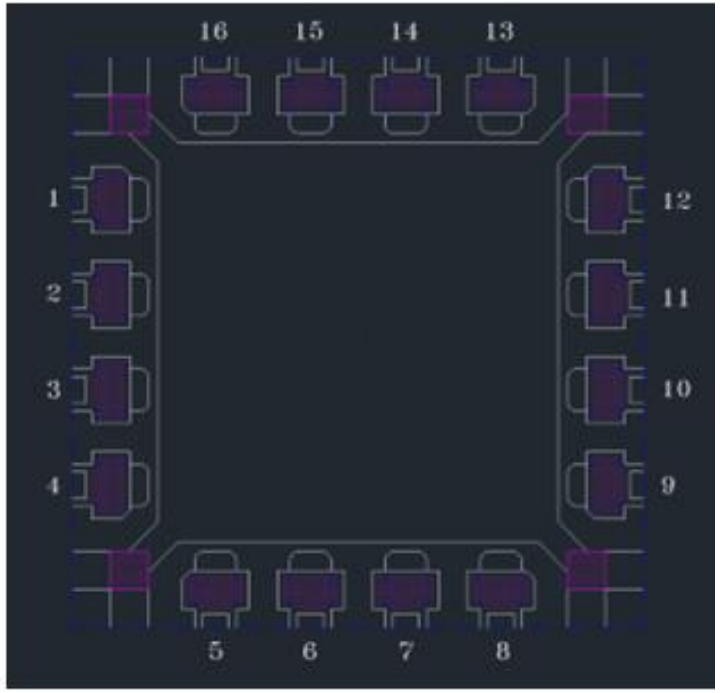
CARC



Note: Not to scale

Wire Material	Au
Lead Frame Material	A194
Lead-Frame Paddle Size	83x83 mils
DAP Surface Prep	Ag spot

NSEB



Note: Not to scale

Wire Material	Au
Lead Frame Material	EFTEC-64T
Lead-Frame Paddle Size	83x83 mils
DAP Surface Prep	Ag on lead only

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QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN#: CAAN-22MOEJ783

Date:
May 7, 2024

Qualification of NSEB as a new assembly site for HV9150K6-G, MD1820K6-G, MD1821K6-G and MD1822K6-G catalog part numbers (CPN) available in 16L VQFN (3x3x0.9mm) package.

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of NSEB as a new assembly site for HV9150K6-G, MD1820K6-G, MD1821K6-G and MD1822K6-G catalog part numbers (CPN) available in 16L VQFN (3x3x0.9mm) package.
CN	E000216005
QUAL ID	R2400327 Rev. A
MP CODE	VADD3QQVXA00
Part No.	MD1822K6-G
Bonding No.	BD-002132 Rev. 01
CCB No.	6816
Package	
Type	16L VQFN
Package size	3 x 3 x 0.9 mm
Lead Frame	
Paddle size	83 x 83 mils
Material	EFTEC-64T
Surface	Ag on lead only
Process	Etched
Lead Lock	Dimple
Part Number	FR0946
Material	
Epoxy	558-2C31
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB244400212.000	TC08924240905.120	2405Y80
NSEB244400213.000	TC08924240905.120	2405Y86
NSEB244400215.000	TC08924240905.120	2405Y8C

Result [X] Pass [ ] Fail [ ] _____

16L VQFN (3x3x0.9 mm) assembled by NSEB pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C System: ETS88	JESD22-A113	693(0)	0/693	Pass	Good Devices
	Bake 150°C, 24 hrs. System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C System: ETS88		693(0)	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: ETS88		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>6.00 grams)		15(0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: ETS88		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 10 Volts System: HAST 6000X	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: ETS88		231(0)	0/231	Pass	77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs. System: TPS Bake Oven **Electrical Test:** +25°C System: ETS88	JESD22-A103	 45(0)	0/45 0/45	 Pass	45 units
Solderability Temp 215°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63, Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22(0)	0/22 0/22 0/22	 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	J-STD-002	22(0)	0/22 0/22 0/22	 Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>6.00 grams) Bond Shear (>20.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30(0) Wires 30(0) bonds	0/30 0/30	Pass Pass	