Product Change Notification / GBNG-29PCCJ889

Date:

18-Oct-2022

Product Category:

Driver / Interface ICs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4980 Final Notice: Qualification of a tapeless lead frame for HV7224PG-G and HV7620PG-G catalog part numbers (CPN) available in 64L PQFP (20x14x3.4mm) package at CARS assembly site.

Affected CPNs:

GBNG-29PCCJ889_Affected_CPN_10182022.pdf
GBNG-29PCCJ889_Affected_CPN_10182022.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 a tapeless lead frame for HV7224PG-G and HV7620PG-G catalog part numbers (CPN) available in 64L PQFP (20x14x3.4mm) package at CARS assembly site.

Pre and Post Change Summary:

		Pre Change	Post Change
Assembly Site		Carsem Semiconductor SDN BHD (CARS)	Carsem Semiconductor SDN BHD (CARS)
Wire Material		Au	Au
Die Attach Material		84-1LMISR4	84-1LMISR4
Molding Compound Material		EME-G600C	EME-G600C
Lead Frame	Material	C7025	C7025
	Type	Kapton taped	No tape
	Design	See attached Pre and Post Change comparison.	

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying tapeless lead frame.

Change Implementation Status: In Progress

Estimated First Ship Date: November 30, 2022 (date code: 2249)

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

Time Table Summary:

	February 2022					>	October 2022					November 2022				
Workweek	06	07	08	09	10		40	41	42	43	44	45	46	47	48	49
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: February 2, 2022: Issued initial notification.
October 18, 2022: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on November 30, 2022.

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

Attachments:

PCN_GBNG-29PCCJ889_Pre and Post Change_Summary.pdf
PCN_GBNG-29PCCJ889_Qual report.pdf

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

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the PCN FAQ section.

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.

GBNG-29PCCJ889 - CCB 4980 Final Notice: Qualification of a tapeless lead frame for HV7224PG-G and HV7620PG-G catalog part numbers (CPN) available in 64L PQFP (20x14x3.4mm) package at CARS assembly site.

Affected Catalog Part Numbers(CPN)

HV7224PG-G
HV7620PG-G

CCB 4980

Pre and Post Change Summary

PCN #: GBNG-29PCCJ889

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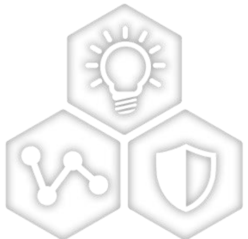
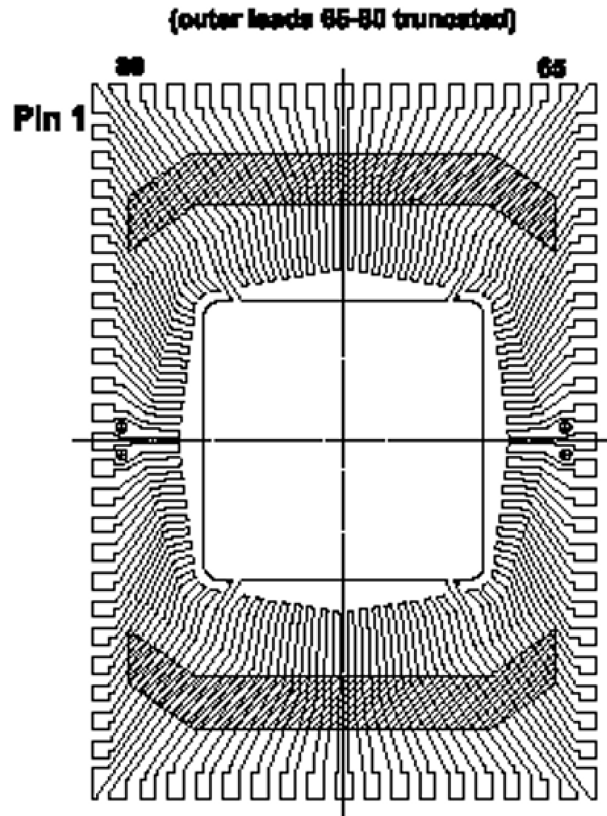


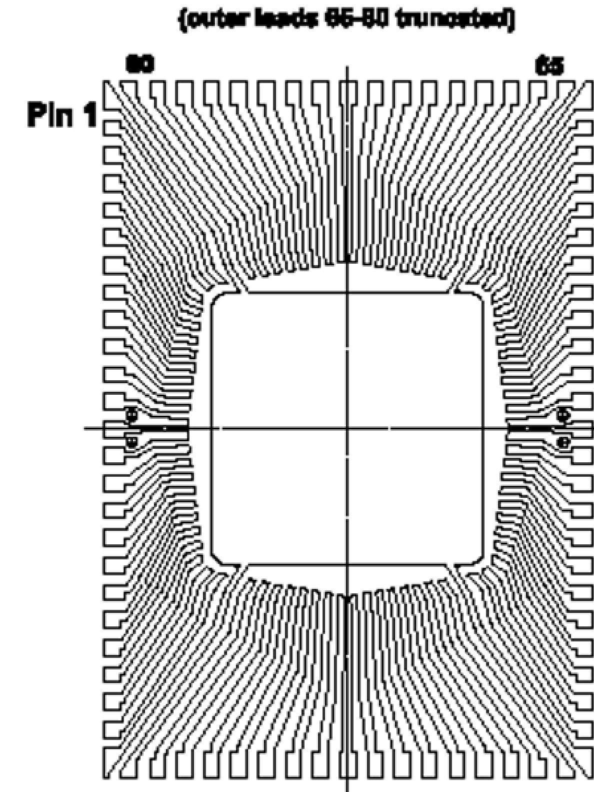
LEAD FRAME COMPARISON

Pre Change



Lead frame	Kapton taped lead frame

Post Change



Lead frame	No tape lead frame

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN ID#: GBNG-29PCCJ889

Date:
September 28, 2022

Qualification of a tapeless lead frame for HV7224PG-G and HV7620PG-G catalog part numbers (CPN) available in 64L PQFP (20x14x3.4mm) package at CARS assembly site.

PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of a tapeless lead frame for HV7224PG-G and HV7620PG-G catalog part numbers (CPN) available in 64L PQFP (20x14x3.4mm) package at CARS assembly site.**
CCB No.	**4980**
CN	E000108236
QUAL ID	R2200794 Rev. A
MP CODE	6L0017U6XA00
Part No.	HV7224PG-G
Bonding No.	A-055718 Rev. C
Package	
Type	64LD PQFP
Package size	20 x 14 x 3.4 mm
Lead Frame	
Paddle size	315 x 315 mils
Material	C7025
Surface	Spot Ag
Process	ETCH
Lead Lock	available for 4 leads
Part Number	443637
Treatment	No
Material	
Epoxy	84-1LMISR4
Wire	Au wire
Mold Compound	EME-G600C
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
CARS230800003.000	TMPE222306948.000	222123P
CARS230900009.000	TMPE222306948.000	222225E
CARS230900010.000	TMPE222306948.000	222225W

Result [x] Pass [ ] Fail [ ] ____________________

64LD PQFP (20x14x3.4 mm) assembled by CARS pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 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 3)	**Electrical Test:** +25°C System: TMT_HV_NT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C System: TMT_HV_NT			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		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>5.00 grams)		15 (0)	0/15	Pass	
	Bond Shear (>25.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** VDD 4.5 Volts, VPP 30 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT_HV_NT		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: SHEL LAB **Electrical Test:** +25°C System: TMT_HV_NT	JESD22-A103	45(0)	45 0/45	Pass	45 units
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)	22 22 0/22	Pass	
Bond Line Thickness	Bond Line Thickness	SPI-45528	15(0)	15(0)	Pass	5 units / lot
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>4.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>24.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	