Product Change Notification / CENO-19OAOR645

Date:

25-Jan-2023

Product Category:

Ethernet PHYs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6059 Initial Notice: Qualification of EN4900G as a new Bottom Die attach material for selected KSZ8001 and KSZ8721 device families available in 48L TQFP (7x7x1.4mm) package.

Affected CPNs:

CENO-19OAOR645_Affected_CPN_01252023.pdf
CENO-19OAOR645_Affected_CPN_01252023.csv

Notification Text:

PCN Status: Initial 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 EN4900G as a new Bottom Die attach material for selected KSZ8001 and KSZ8721 device families available in 48L TQFP (7x7x1.4mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Orient	Orient

		Semiconductor Electronics, Ltd (OSE)	Semiconductor Electronics, Ltd (OSE)
Wire Material		Au	Au
Die Attach Material		8340	EN4900G
Molding Compound Material		CEL-9200HF	CEL-9200HF
Lead-Frame	Material	C7025	C7025
	Paddle Size	160 x160 mils	160 x160 mils
	See Pre and Post Change Comparison.		

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying EN4900G as a new Bottom Die attach material.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: May 2023

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	January 2023					>	**May 2023**				
Workweek	1	2	3	4	5		18	19	20	21	22
Initial PCN Issue Date				x							
Qual Report Availability										x	
Final PCN Issue Date										x	

Method to Identify Change: Traceability code

Qualification Plan: Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History: January 25, 2022: 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.

Attachments:

PCN_CENO-19OAOR645_Qual Plan.pdf
PCN_CENO-19OAOR645_Pre and Post Change_Summary.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.

QUALIFICATION PLAN SUMMARY

PCN #: CENO-19OAOR645

Date:
January 19, 2023

Qualification of EN4900G as a new Bottom Die attach material for selected KSZ8001 and KSZ8721 device families available in 48L TQFP (7x7x1.4mm) package.

Purpose: Qualification of EN4900G as a new Bottom Die attach material for selected KSZ8001 and KSZ8721 device families available in 48L TQFP (7x7x1.4mm) package.

CCB No. : 6059

Misc.	Assembly site	OSE
	BD Number	BD-001244 rev 01
	MP Code (MPC)	36063TCAAA01
	Part Number (CPN)	KSZ8721BLI-TR
	MSL information	MSL3/ 260
	Assembly Shipping Media (T/R, Tube/Tray)	T/R
	Base Quantity Multiple (BQM)	250
	Reliability Site	SJ Rel Lab
Lead-Frame	Paddle size	160x160 mil
	Material	C7025
	DAP Surface Prep	DR/P
	Treatment	Non- Rough
	Process	Stamped
	Lead-lock Design (with locking hole?)	No
	Part Number	02-A164-300R
	Lead Plating	Matte Tin
Bond Wire	Material	Au
Die Attach Bot	Part Number	EN4900G
	Conductive	Yes
Die Attach Top	Part Number	QMI-550
	Conductive	No
MC	Part Number	CEL-9200HF
PKG	PKG Type	LQFP
	Pin/Ball Count	48L
	PKG width/size	7x7x1.4mm

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	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; 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	OSE	SJ	LQFP	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.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	OSE	OSE	LQFP	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5		5	OSE	OSE	LQFP	30 bonds from a min. 5 devices.
Physical Dimmensions	Measure per JESD22 B100 and B108	10	0	3	30		5	OSE	OSE	LQFP	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	OSE	SJ	LQFP	
Preconditioning - Required for surface mount devices	JESD22-A113. +150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at **+25°C and 85°C**.	231	15	3	738	0	15	OSE	SJ	LQFP	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.

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	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
HAST	JESD22-A110. +130°C/85% RH for 96 hours or 110°C/85%RH for 264 hours. Electrical test pre and post stress at **+25°C and 85°C hot temp.**	77	5	3	246	0	10	OSE	SJ	LQFP	Spares should be properly identified. Use the parts which have gone through Pre-conditioning. Post-stress Electrical Test Window Time: Within 48 hours. Note: For intermediate readouts, devices shall be returned to stress within 96 hours of the end of ramp down. (can be extended to 144 hours, and the time to return to stress to as much as 288 hours by placing the devices in sealed moisture barrier bags without desiccant). Refer to JESD22-A110 for details.
UHAST	JESD22-A118. +130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs. Electrical test pre and post stress at **+25°C**	77	5	3	246	0	10	OSE	SJ	LQFP	Spares should be properly identified. Use the parts which have gone through Pre-conditioning. Post-stress Electrical Test Window Time: Within 48 hours. Note: for intermediate readouts, devices shall be returned to stress within 96 hours of the end of ramp down. (can be extended to 144 hours, and the time to return to stress to as much as 288 hours by placing the devices in sealed moisture barrier bags, the bags should be non-vacuum sealed without a N2 purge and without desiccant). Refer to JESD22-A118 for details.
Temp Cycle	JESD22-A104. -65°C to +150°C for 500 cycles. Electrical test pre and post stress at **85°C hot temp**; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	OSE	SJ	LQFP	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Affected Catalog Part Numbers (CPN)

KSZ8001L
KSZ8001LI
KSZ8001L-TR
KSZ8001LI-TR
KSZ8721BL
KSZ8721CL
KSZ8721BLI
KSZ8721BL-TR
KSZ8721CL-TR
KSZ8721BLI-TR

CCB 6059
Pre and Post Change Summary
PCN #: CENO-19OAOR645

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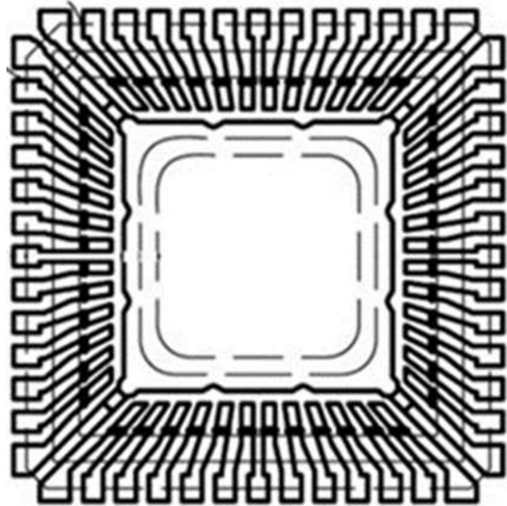
LEAD FRAME COMPARISON

Pre Change	Post Change

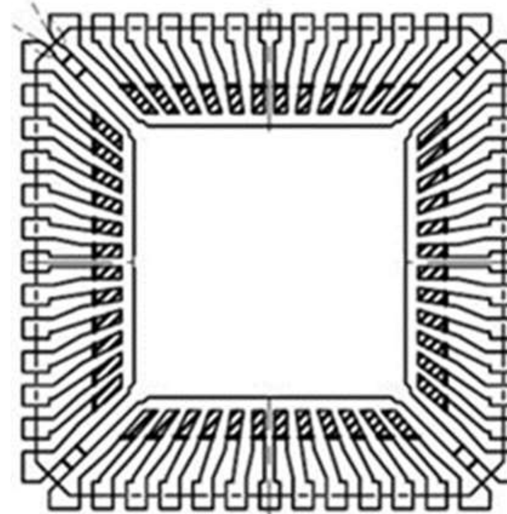
Pre Change



Note: Not to scale

Lead Frame Material	C7025
Paddle size	160 x160 mils
Wire Material	Au

Post Change



Note: Not to scale

Lead Frame Material	C7025
Paddle size	160 x160 mils
Wire Material	Au