Product Change Notification / CENO-23PKZQ392

Date:

14-Feb-2023

Product Category:

Ethernet PHYs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6062 Initial Notice: Qualification of EN4900G as a new die attach material for KSZ8041TL, SPNY801037, KSZ8041FTLI, KSZ8041TL-TR, SPNZ801037-TR, and KSZ8041FTLI-TR catalog part numbers (CPN) available in 48L TQFP (7x7x1.0mm) package.

Affected CPNs:

CENO-23PKZQ392_Affected_CPN_02142023.pdf
CENO-23PKZQ392_Affected_CPN_02142023.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 die attach material for KSZ8041TL, SPNY801037, KSZ8041FTLI, KSZ8041TL-TR, SPNZ801037-TR, and KSZ8041FTLI-TR catalog part numbers (CPN) available in 48L TQFP (7x7x1.0mm) package.

Pre and Post Change Summary:

		Pre Change		Post Change
Assembly Site		Orient Semiconductor Electronics, Ltd (OSE)		Orient 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	120x120 mils	160x160 mils	120x120 mils

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying EN4900G as a new 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 2022					**>**	**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										x	

Date											

Method to Identify Change: Traceability code

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

Revision History: January 27, 2023: Issued initial notification.

February 14, 2023: Re-issued initial notification. Update the Pre and Post Change Summary to include Lead Frame Paddle size and attached Pre and Post Change Summary.

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-23PKZQ392_Pre and Post Change_Summary.pdf
PCN_CENO-23PKZQ392_Qual Plan.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.

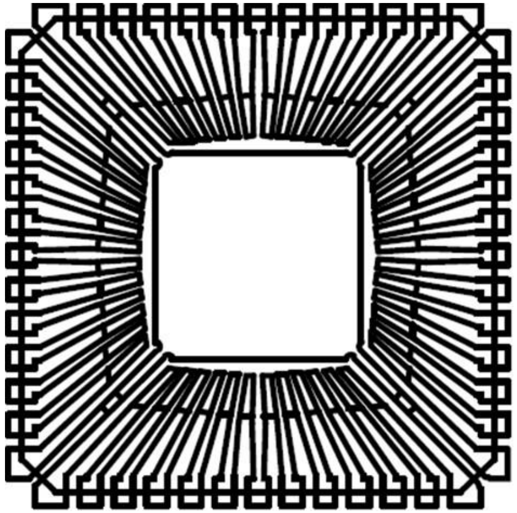
CCB 6062
Pre and Post Change Summary
PCN #: CENO-23PKZQ392

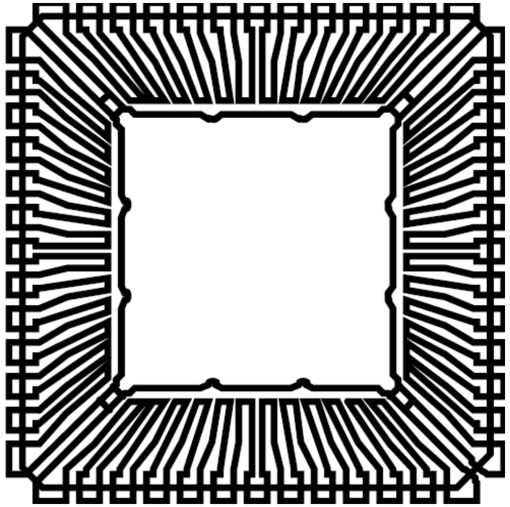
A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

SMART | CONNECTED | SECURE

LEAD FRAME COMPARISON

Pre Change



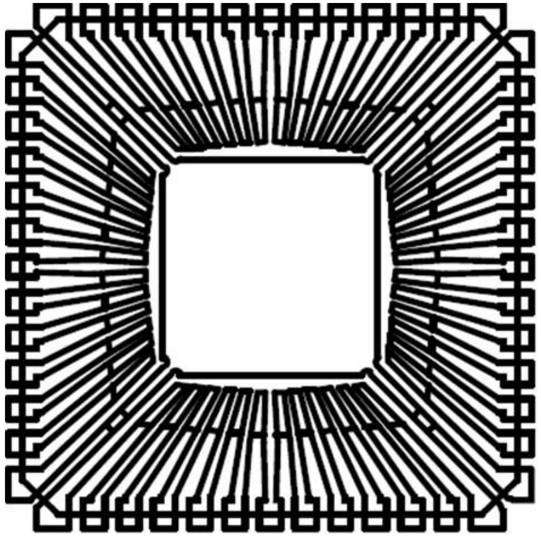


Note: Not to scale

Lead frame Material	**C7025**
Lead frame Paddle Size	**120x120 mils**

Lead frame Material	**C7025**
Lead frame Paddle Size	**160x160 mils**

Post Change



Note: Not to scale

Lead frame Material	**C7025**
Lead frame Paddle Size	**120x120 mils**

QUALIFICATION PLAN SUMMARY

PCN #: CENO-23PKZQ392

Date:
January 19, 2023

Qualification of EN4900G as a new die attach material for KSZ8041TL, SPNY801037, KSZ8041FTLI, KSZ8041TL-TR, SPNZ801037-TR, and KSZ8041FTLI-TR catalog part numbers (CPN) available in 48L TQFP (7x7x1.0mm) package.

Purpose: Qualification of EN4900G as a new die attach material for KSZ8041TL, SPNY801037, KSZ8041FTLI, KSZ8041TL-TR, SPNZ801037-TR, and KSZ8041FTLI-TR catalog part numbers (CPN) available in 48L TQFP (7x7x1.0mm) package.

CCB No.: 6062

Misc.	Assembly site	OSE
	BD Number	BD-001245 rev 01
	MP Code (MPC)	TKDA1TCQAA01
	Part Number (CPN)	KSZ8041FTLI-TR
	MSL information	MSL3/ 260
	Assembly Shipping Media (T/R, Tube/Tray)	T/R
	Base Quantity Multiple (BQM)	1000
	Reliability Site	SJ Rel Lab
Lead-Frame	Paddle size	120x120
	Material	C7025
	DAP Surface Prep	DR/P
	Treatment	Non- Rough
	Process	Stamped
	Lead-lock Design (with locking hole?)	No
	Part Number	02-A165-0005
	Lead Plating	Matte Tin
Bond Wire	Material	Au
Die Attach	Part Number	EN4900G
	Conductive	Yes
MC	Part Number	CEL-9200HF
PKG	PKG Type	TQFP
	Pin/Ball Count	48L
	PKG width/size	7x7x1.0mm

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	TQFP	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	TQFP	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5		5	OSE	OSE	TQFP	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30		5	OSE	OSE	TQFP	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	OSE	SJ	TQFP	
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	TQFP	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	TQFP	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	TQFP	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	TQFP	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Affected Catalog Part Numbers (CPN)

KSZ8041TL
SPNY801037
KSZ8041FTLI
KSZ8041TL-TR
SPNZ801037-TR
KSZ8041FTLI-TR