



Product Change Notification / NTDO-04TZHM142

Date:

08-Nov-2021

Product Category:

Depletion Mode MOSFETs, N-Channel Enhancement Mode MOSFETs, P-Channel Enhancement Mode MOSFETs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4883 Initial Notice: Qualification of CEL-8240 as a new mold compound for 2N700x, DNx5xxN3, LP0701N3, TxxxxxN3, VNxxxxxx and VPxxxxxx device families available in 3L TO-92 package assembled at CRTK assembly site.

Affected CPNs:

[NTDO-04TZHM142_Affected_CPN_11082021.pdf](#)
[NTDO-04TZHM142_Affected_CPN_11082021.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 CEL-8240 as a new mold compound for 2N700x, DNx5xxN3, LP0701N3, TxxxxxN3, VNxxxxxx and VPxxxxxx device families available in 3L TO-92 package assembled at CRTK assembly site.

Pre and Post Change Summary:

	Pre Change		Post Change
Assembly Site	Greatek Electronic Inc. (GTK)	Cirtek Electronics	Cirtek Electronics

			Corporation (CRTK)	Corporation (CRTK)
Wire material	Au		Au	Au
Die attach material	CRM1076DJ-G	8060T	84-1LMISR4	84-1LMISR4
Molding compound material	G600		G600	CEL-8240
Lead frame	Material	CDA194 / A194	A194	A194
	Lead-lock	No	No	No
	Design	See attached Pre and Post Change comparison.		
Package Lay-out	See attached Pre and Post Change comparison.			

Note: *C194, A194 or CDA194 Lead frame material are the same, it is just a MCHP internal labelling

Impacts to Data Sheet: None

Change Impact:None

Reason for Change:To improve productivity and on-time delivery performance by qualifying CEL-8240 as a new mold compound at CRTK assembly site.

Change Implementation Status:In Progress

Estimated Qualification Completion Date:February 2022

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:

Workweek	November 2021					-->	February 2022				
	45	46	47	48	49		06	07	08	09	10
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:November 8, 2021: 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_NTDO-04TZHM142_Pre and Post Change Summary.pdf](#)

[PCN_NTDO-04TZHM142_Qual Plan.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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MICROCHIP

QUALIFICATION PLAN SUMMARY

PCN #: NTDO-04TZHM142

Date:

October 14, 2021

Qualification of CEL-8240 as a new mold compound for 2N700x, DNx5xxN3, LP0701N3, TxxxxxN3, VNxxxxxx and VPxxxxxx device families available in 3L TO-92 package assembled at CRTK assembly site.

Purpose: Qualification of CEL-8240 as a new mold compound for 2N700x, DNx5xxN3, LP0701N3, TxxxxxN3, VNxxxxxx and VPxxxxxx device families available in 3L TO-92 package assembled at CRTK assembly site.

<u>Misc.</u>	Assembly site	CRTK
	BD Number	TBD
	MP Code (MPC)	630589A2XB00
	Part Number (CPN)	TN2640N3-G
	Assembly Shipping Media (T/R, Tube/Tray)	Bag
	Base Quantity Multiple (BQM)	1000
	CCB No.	4883
<u>Lead-Frame</u>	Paddle size	140x100
	Material	A194
	DAP Surface Prep	Ag
	Process	Stamping
	Lead-lock (with Locking holes)	No
	Part Number	TO03NH2101
	Lead Plating	Matte Sn
	Strip Size	254.05+/-0.15 mm
	Strip Density	50
<u>Bond Wire</u>	Material	Au
<u>Die Attach</u>	Part Number	84-1 LMIS R4
	Conductive	Yes
<u>MC</u>	Part Number	CEL-8240 GS
<u>PKG</u>	PKG Type	TO-92
	Pin/Ball Count	3

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	MTAI	MTAI	TO-92	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.
Standard SnPB Solderability	J-STD-002D ; Perform 8 hour steam aging prior to testing. Standard SnPB: SnPb finish, SnPb solder, wetting temp 215°C for SMD & 245°C for through hole packages.	22	5	1	27	> 95% lead coverage	5	MTAI	MTAI	TO-92	
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	MTAI	MTAI	TO-92	10 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5	MTAI	MTAI	TO-92	10 bonds from a min. 5 devices.
Wire Sweep								MTAI	MTAI	TO-92	Required for any reduction in wire bond thickness.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	MTAI	MTAI	TO-92	
Lead Integrity	JESD22 B105	5	0	1	5	0 (No lead breakage or cracks)	5	MTAI	MTAI	TO-92	3 leads from each of 5 parts. Not required for SMD, only required for through-hole.
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	MTAI	MTAI	TO-92	
HAST	+130°C/85% RH for 96 hours or 110°C/85%RH for 264 hours Electrical test pre and post stress at +25°	77	5	3	246	0	10	MTAI	MTAI	TO-92	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	+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	MTAI	MTAI	TO-92	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at +25°C; 3-gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	MTAI	MTAI	TO-92	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

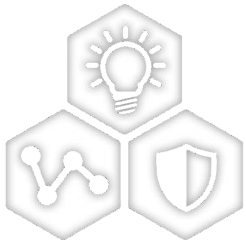
CCB 4883

Pre and Post Change Summary

PCN #: NTDO-04TZHM142



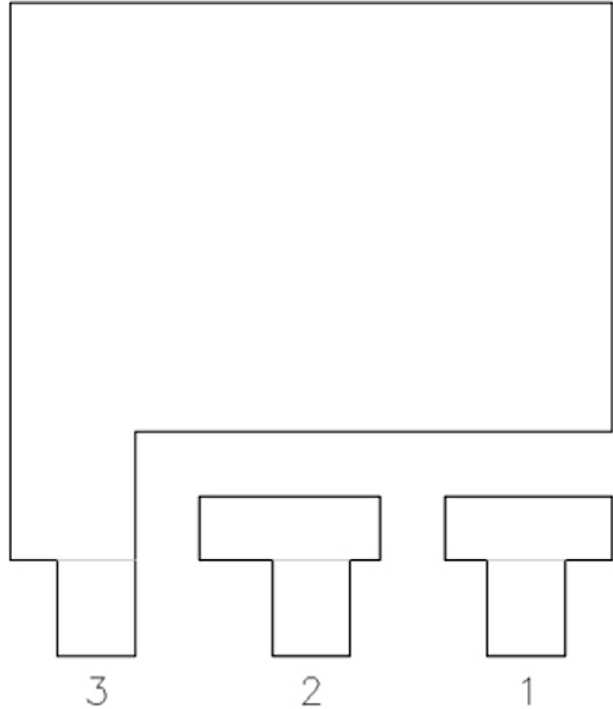
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SMART | CONNECTED | SECURE

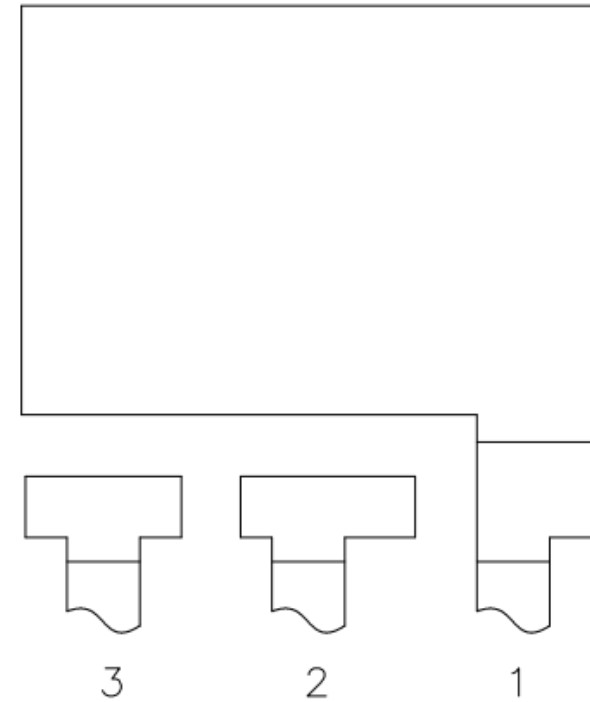
Lead Frame Comparison

GTK



Lead Frame Material	CDA194 / A194
Lead-lock (Locking Holes)	No

CRTK

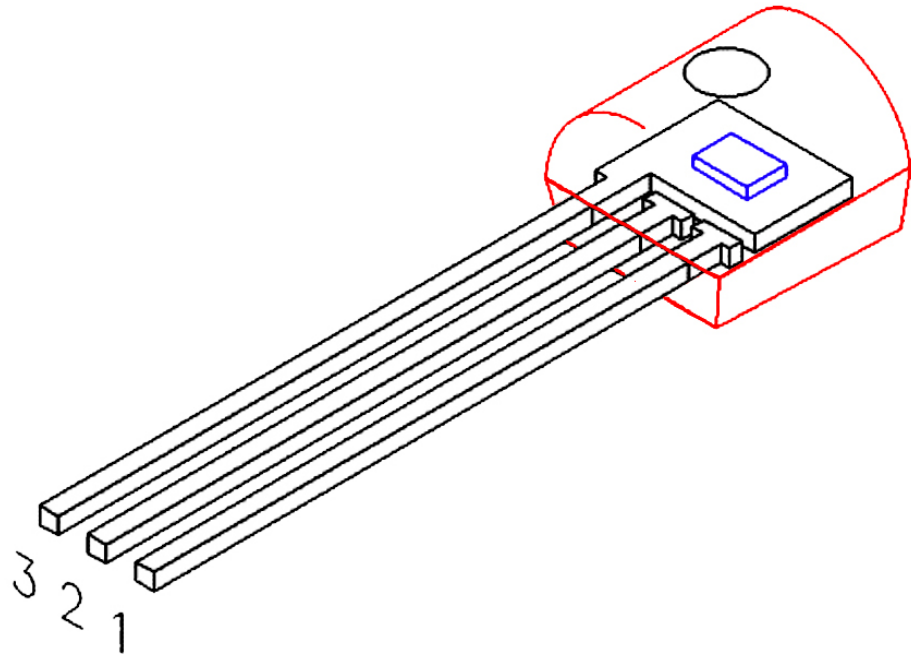


Lead Frame Material*	A194
Lead-lock (Locking Holes)	No

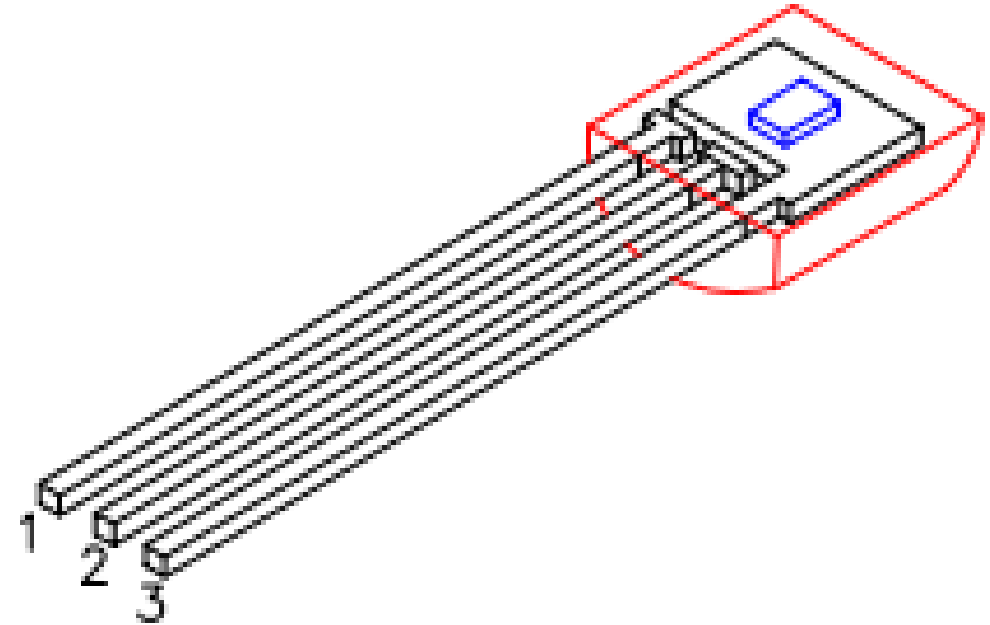
Note:*C194, A194 or CDA194 Lead frame material are the same, it is just a MCHP internal labelling difference.

Package Layout

GTK



CRTK



Die sit on flat side

Affected Catalog Part Numbers (CPN)

TN0106N3-G
TN0110N3-G
TN0104N3-G
VN0106N3-G
VN0109N3-G
VN0606L-G
VN0550N3-G
VP0104N3-G
VP0106N3-G
VP0109N3-G
VP0550N3-G
TN0106N3-G-P003
TN0106N3-G-P013
TN0110N3-G-P002
TN0104N3-G-P003
TN0104N3-G-P014
VN0106N3-G-P003
VN0606L-G-P003
VN0550N3-G-P013
VP0550N3-G-P013
DN2540N3-G
DN3545N3-G
DN2530N3-G
DN2535N3-G
TN0606N3-G
TN0610N3-G
TN0620N3-G
TN0620N3-G-D163
TN2540N3-G
TP0606N3-G
VP0808L-G
TP0620N3-G
TP2535N3-G
TP2540N3-G
VN0300L-G
VN1206L-G
VN2406L-G
VN2410L-G
VN4012L-G
DN2540N3-G-P003
DN2535N3-G-P003
DN2535N3-G-P013
TN0606N3-G-P003
TN0610N3-G-P003
TN0610N3-G-P013
TN0620N3-G-P002

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TN0620N3-G-P014
TN2540N3-G-P002
TP0606N3-G-P002
TP0606N3-G-P003
TP2540N3-G-P002
VN0300L-G-P002
VN1206L-G-P002
VN2410L-G-P013
VN2410L-G-P014
2N7000-G
2N7000-G-D596
2N7008-G
TN2106N3-G
TP2104N3-G
VN0104N3-G
VN0808L-G
VN10KN3-G
VN2106N3-G
VN2222LL-G
VP2106N3-G
TP2104N3-G-P003
VN0104N3-G-P013
VN10KN3-G-P002
VN10KN3-G-P003
VN10KN3-G-P013
VN10KN3-G-P014
VN2222LL-G-P003
VN2222LL-G-P013
VN2210N3-G
VN2224N3-G
VP2206N3-G
VP2206N3-G-P003
TN2640N3-G
TP2635N3-G
TP2640N3-G
TN0604N3-G
TN0702N3-G
TN0604N3-G-P005
TN0604N3-G-P013
VN3205N3-G
VP3203N3-G
VN3205N3-G-P002
LP0701N3-G
TP0604N3-G
VN2450N3-G
VN2460N3-G
VP2450N3-G
VN2460N3-G-P003
VN2460N3-G-P014

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TN5325N3-G

TN5325N3-G-P002