



## Product Change Notification / NTDO-04TZHM142

---

**Date:**

16-May-2022

**Product Category:**

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

**PCN Type:**

Manufacturing Change

**Notification Subject:**

CCB 4883 Final 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\\_05162022.pdf](#)  
[NTDO-04TZHM142\\_Affected\\_CPN\\_05162022.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 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:**



**Method to Identify Change:**Traceability code

**Qualification Report:**Please open the attachments included with this PCN labeled as PCN\_#\_Qual\_Report.

**Revision History:**

**November 8, 2021:** Issued initial notification.

**May 16, 2022:** Issued final notification. Attached is the qualification report. Provided estimated first ship date on June 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\\_NTDO-04TZHM142\\_Pre and Post Change Summary.pdf](#)  
[PCN\\_NTDO-04TZHM142\\_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.

**CCB 4883**  
**Pre and Post Change Summary**  
**PCN #: NTDO-04TZHM142**



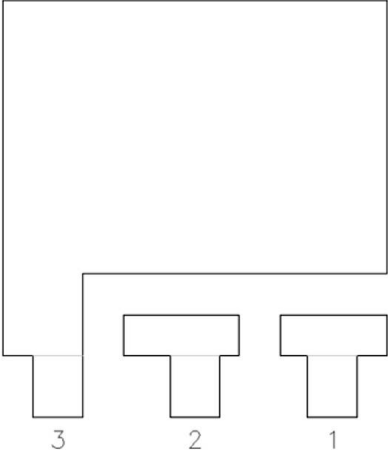
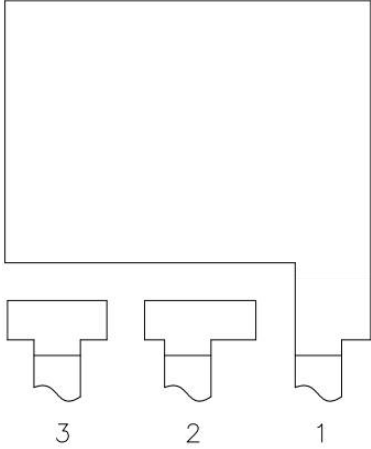
---

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



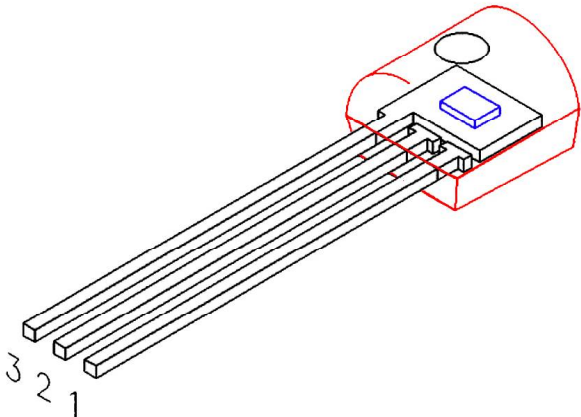
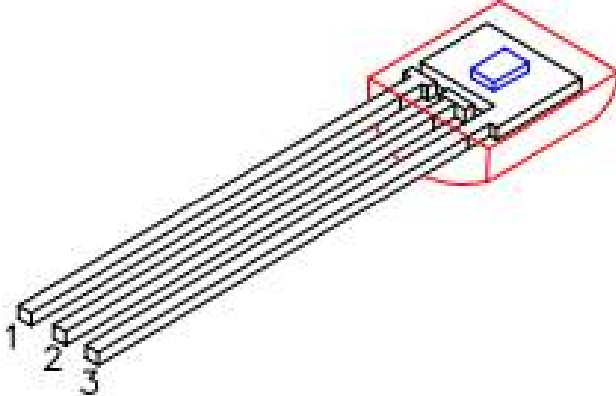
SMART | CONNECTED | SECURE

# Lead Frame Comparison

GTK		CRTK	
			
Lead Frame Material	CDA194 / A194	Lead Frame Material*	A194
Lead-lock (Locking Holes)	No	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
 <p>The diagram shows a GTK package layout. A blue die is mounted on a substrate. Three leads are shown extending from the package, labeled 3, 2, and 1 from left to right. A red wireframe indicates the package's shape.</p>	 <p>The diagram shows a CRTK package layout. A blue die is mounted on a substrate. Three leads are shown extending from the package, labeled 1, 2, and 3 from left to right. A red wireframe indicates the package's shape. Below the diagram, the text "Die sit on flat side" is present.</p>



**MICROCHIP**

## **QUALIFICATION REPORT SUMMARY**

**PCN #: NTDO-04TZHM142**

**Date**

**April 29, 2022**

**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.**



## MICROCHIP PACKAGE QUALIFICATION REPORT

<b>Purpose</b>	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.
<b>CCB</b>	4883
<b>CN</b>	E000093139
<b>QUAL ID</b>	R2200274
<b>MP CODE</b>	630589A2XB00
<b>Part No.</b>	TN2640N3-G
<b>Bonding No.</b>	BD-000287 Rev. 02
<b><u>Package</u></b>	
<b>Type</b>	3L TO-92
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	140 x 100 mils
<b>Material</b>	A194
<b>Surface</b>	Ag
<b>Process</b>	Stamping
<b>Lead Lock</b>	No
<b>Part Number</b>	TO03NH2105
<b><u>Die attach material</u></b>	
<b>Epoxy</b>	84-1 LMIS R4
<b>Wire</b>	Au wire
<b>Mold Compound</b>	CEL-8240 GS
<b>Plating Composition</b>	Matte Sn





# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information:

Assembly Lot No.	Wafer Lot No.	Date Code
CRTK224600001.000	TMPE222286635.200	2206VC0
CRTK224600002.000	TMPE222286635.200	2206VC8
CRTK224600003.000	TMPE222286635.200	2206VCB

## Result

Pass

Fail

\_\_\_\_\_

3L TO-92 assembled by CRTK pass reliability test per QCI-39000.

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Electrical Test</b>	<b>Electrical Test:</b> +25°C System: ETS300	JESD22- A113	693(0)	693		Good Devices
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification	JESD22- A104		231		
	<b>Electrical Test:</b> +25°C System: ETS300		231(0)	0/231	Pass	77 units / lot
	<b>Bond Strength:</b> Wire Pull (> 4.0 grams) Bond Shear (18.00 grams)		15 (0) 15 (0)	0/15 0/15	Pass Pass	
<b>UNBIASED- HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		231		
	<b>Electrical Test:</b> +25°C System: ETS300		231(0)	0/231	Pass	77 units / lot
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs.  <b>Bias Volt:</b> 42 Volts System: HAST 6000X	JESD22- A110		231		
	<b>Electrical Test:</b> +25°C System: ETS300		231(0)	0/231	Pass	77 units / lot

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB	JESD22- A103		45		45 units
	<b>Electrical Test:</b> +25°C System: ETS300		45(0)	0/45	Pass	
<b>Solderability Temp 245°C</b>	<b>Steam Aging:</b> Temp 93°C,8Hrs System: SAS-3000 <b>Solder Dipping:</b> Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B- 102E	22(0)	22  22 0/22	Pass	
<b>Wire sweep</b>	Wire sweep Inspection 15 Wires / lot	-	45(0)  Wires	0/45	Pass	
<b>Physical Dimensions</b>	Physical Dimension, 10 units per 1 lot	JESD22- B100/B108	30(0) Units	0/30	Pass	
<b>Lead Integrity</b>	15 Leads from a minimum of 5 units, 1 lot. System: Strain	JESD22 B105	15(0)  Leads	0/15	Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 4.00 grams)	Mil. Std.	30 (0) Wires	0/30	Pass	
	Bond Shear (> 13.00 grams)	883-2011	30 (0) bonds	0/30	Pass	

NTDO-04TZHM142 - CCB 4883 Fina DNx5xxN3 LP0701N3 TxxxxxN3 VNxxxxxx and VPxxxxxx device far

Affected Catalog Part Numbers(CPN)

- 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
- 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  
VN2450N3-G  
VN2460N3-G  
VP2450N3-G  
VN2460N3-G-P003  
VN2460N3-G-P014  
TN5325N3-G  
TN5325N3-G-P002  
TN0106N3-G  
TN0110N3-G  
TN0104N3-G  
VN0106N3-G  
VN0109N3-G  
VN0606L-G  
VN0550N3-G  
VP0104N3-G  
VP0106N3-G  
VP0109N3-G  
VP0550N3-G  
VP0550N3-G-D559  
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