



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20221213000.1
Qualification of TI Malaysia as a New
Assembly site for select devices
Change Notification / Sample Request**

Date: December 16, 2022
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments requires acknowledgement of receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If samples or additional data are required, requests must be received within **30 days** of this notification.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date on Page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice or to provide acknowledgement of this PCN, you may contact your local Field Sales Representative or the PCN Team ([PCN ww_admin_team@list.ti.com](mailto:PCN_admin_team@list.ti.com)). For sample requests or sample related questions, contact your local Field Sales Representative.

Sincerely,

PCN Team
SC Business Services

20221213000.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
LM384N/NOPB	null
LM380N/NOPB	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20221213000.1		PCN Date:	December 16, 2022
Title:	Qualification of TI Malaysia as a new Assembly site for select devices			
Customer Contact:	PCN Manager	Dept:	Quality Services	
Proposed 1st Ship Date:	Mar 16, 2023	Sample Requests accepted until:	Jan 16, 2023*	
*Sample requests received after Jan 16, 2023 will not be supported.				
Change Type:				
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>
		<input type="checkbox"/>	Wafer Bump Site	
		<input type="checkbox"/>	Wafer Bump Material	
		<input type="checkbox"/>	Wafer Bump Process	
		<input type="checkbox"/>	Wafer Fab Site	
		<input type="checkbox"/>	Wafer Fab Materials	
		<input type="checkbox"/>	Wafer Fab Process	
PCN Details				
Description of Change:				
Texas Instruments Incorporated is announcing the qualification TIM (TI Malaysia) as a new Assembly Site for select devices listed in the "Product Affected" Section. Current assembly sites and Material differences are as follows.				
	Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
	TI Melaka	CU6	MYS	Melaka
	TI Malaysia	MLA	MYS	Kuala Lumpur
Material Differences:				
	TI Melaka	TI Malaysia		
Mount compound	210003	4147858		
Mold compound	150044	4211880		
Lead Finish	Matte Sn	NiPdAu		
Package Marking Differences:				
	TI Melaka	TI Malaysia		
14/16 pin				
Reason for Change:				
Continuity of supply.				
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):				
None				
Impact on Environmental Ratings				

Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.

RoHS	REACH	Green Status	IEC 62474
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change

Changes to product identification resulting from this PCN:

Assembly Site		
TI Melaka	Assembly Site Origin (22L)	ASO: CU6
TI Malaysia	Assembly Site Origin (22L)	ASO: MLA

Sample product shipping label (not actual product label)



Product Affected:

LM380N/NOPB	LM384N/NOPB
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Qualification Report

Approve Date 09-Dec-2022

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Name	Condition	Duration	Qual Device: LM384N/NOPB	QBS Reference: LF444ACN/NOPB	QBS Reference: LM2594HVN- ADJ/NOPB
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0
UHA	A3	Autoclave	121C/15psig	96 Hours	3/231/0	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	3/231/0
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	3/228/0	3/228/0	3/228/0
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	3/228/0	3/228/0	3/228/0
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	3/66/0	3/66/0	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	3/15/0	3/15/0

CHAR	E5	Electrical Characterization	Side by Side, Test parm comparison of control vs. qual	-	1/30/0	1/30/0	1/30/0
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QBS: Qual By Similarity

Qual Device LM384N/NOPB is qualified at NOT CLASSIFIED NOT CLASSIFIED

Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours

The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours

The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500

Cycles Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

Green/Pb-free Status: Qualified Pb-Free(SMT) and Green

Qualification Report

Approve Date 05-Aug-2021

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: <u>LF444ACN/NOPB</u>	Qual Device: <u>LM231AN/NOPB</u>	Qual Device: <u>LM2594HVN-ADJ/NOPB</u>	Qual Device: <u>LMC6482IN/NOPB</u>	QBS Package Reference: <u>SN74HC595N</u>	QBS Package Reference: <u>SN74LS03N</u>
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0	3/231/0	3/231/0	3/225/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	Pass	Pass	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
LI	Lead Fatigue	Leads	3/27/0	3/54/0	3/36/0	3/54/0	3/45/0	3/45/0
LI	Lead Pull	Leads	3/72/0	3/72/0	3/72/0	3/72/0	3/72/0	3/72/0
PD	Physical Dimensions	(per mechanical drawing)	3/15/0	3/15/0	3/15/0	3/15/0	3/15/0	3/15/0
PKG	Lead Finish Adhesion	Leads	3/45/0	-	-	-	3/45/0	3/45/0
SD	Solderability	Pb Free	3/66/0	3/66/0	-	3/66/0	3/66/0	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
VM	Visual / Mechanical	(per mfg. Site specification)	3/984/0	3/984/0	3/984/0	3/984/0	3/984/0	3/984/0
WBP	Bond Pull	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0

- QBS: Qual By Similarity

- Qual Devices LF444ACN/NOPB, LM231AN/NOPB, LM2594HVN-ADJ/NOPB, LMC6482IN/NOPB is qualified at LEVEL 1 - NACG

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
 - The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
 - The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles
- Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

Green/Pb-free Status:

Qualified Pb-Free and Green

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

Location	E-Mail
WW Change Management Team	PCN_ww_admin_team@list.ti.com

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