

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"/>	Wafer Bump Site
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Site
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<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)


TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 20:
 MSL 2 /260C/1 YEAR SEAL DT
 MSL 1 /235C/UNLIM 03/29/04
 OPT:
 ITEM: 39
LBL: 5A (L)TO:1750



(1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: (V) 0033317
 (20L) CSO: SHE (21L) CCO:USA
 (22L) ASO: MLA (23L) ACO: MYS

Product Affected:

LM380N/NOPB	LM384N/NOPB
-------------	-------------

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: <u>LM384N/NOPB</u>	QBS Reference: <u>LF444ACN/NOPB</u>	QBS Reference: <u>LM2594HVN-ADJ/NOPB</u>
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0
UHAST	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
------	----	-----------------------------	--	---	--------	--------	--------

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

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disdaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI’s products are provided subject to TI’s Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI’s provision of these resources does not expand or otherwise alter TI’s applicable warranties or warranty disclaimers for TI products.