



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20220412000.1
Qualification of TI Malaysia as a New
Assembly site for select devices
Change Notification / Sample Request

Date: April 14, 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). For sample requests or sample related questions, contact your local Field Sales Representative.

Sincerely,

PCN Team
SC Business Services

20220412000.1
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
LM324N/NOPB	null
LM2902N/NOPB	null
LM339AN/NOPB	null
LM361N/NOPB	null

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

PCN Number:	20220412000.1			PCN Date:	April 14, 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:	Jul 14, 2022		Estimated Sample Availability:	Date Provided at Sample request																	
Change Type:																					
☒	Assembly Site	☐	Design	☐	Wafer Bump Site																
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material																
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process																
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Site																
☒	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials																
				☐	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.																					
<table border="1"> <thead> <tr> <th>Assembly Site</th> <th>Assembly Site Origin</th> <th>Assembly Country Code</th> <th>Assembly Site City</th> </tr> </thead> <tbody> <tr> <td>Amkor Phil</td> <td>AKR</td> <td>PHL</td> <td>Muntinlupa City</td> </tr> <tr> <td>TI Melaka</td> <td>CU6</td> <td>MYS</td> <td>Melaka</td> </tr> <tr> <td>TI Malaysia</td> <td>MLA</td> <td>MYS</td> <td>Kuala Lumpur</td> </tr> </tbody> </table>						Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City	Amkor Phil	AKR	PHL	Muntinlupa City	TI Melaka	CU6	MYS	Melaka	TI Malaysia	MLA	MYS	Kuala Lumpur
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City																		
Amkor Phil	AKR	PHL	Muntinlupa City																		
TI Melaka	CU6	MYS	Melaka																		
TI Malaysia	MLA	MYS	Kuala Lumpur																		
Group 1 Material Differences:																					
	Amkor Phil	TI Malaysia																			
Mount compound	101300929	4147858																			
Mold compound	101402556	4211880																			
Wire Type	Au	Cu																			
Lead Finish	Matte Sn	NiPdAu																			
Group 2 Material Differences:																					
	TI Melaka	TI Malaysia																			
Mount compound	210003	4147858																			
Mold compound	150044	4211880																			
Wire Type	Au	Cu																			
Lead Finish	Matte Sn	NiPdAu																			
Package Marking Differences:																					
<table border="1"> <thead> <tr> <th></th> <th>AMKOR / TI Melaka</th> <th>TI Malaysia</th> </tr> </thead> <tbody> <tr> <td rowspan="2">14/16 pin</td> <td> \NS/ = NATIONAL LOGO YM = YEAR MONTH DATE CODE LLLL = ASSY DATE CODE P = PRIMARY ASSY SITE CODE G3 = ECAT VALUE </td> <td> \NS/ = NATIONAL LOGO YM = YEAR MONTH DATE CODE LLLL = ASSY DATE COD S = ASSLY SITE CODE </td> </tr> </tbody> </table>							AMKOR / TI Melaka	TI Malaysia	14/16 pin	\NS/ = NATIONAL LOGO YM = YEAR MONTH DATE CODE LLLL = ASSY DATE CODE P = PRIMARY ASSY SITE CODE G3 = ECAT VALUE	\NS/ = NATIONAL LOGO YM = YEAR MONTH DATE CODE LLLL = ASSY DATE COD S = ASSLY SITE CODE										
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Reason for Change:															
Continuity of supply. PDIP assembly EOL from Amkor Phil															
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												
☒ No Change	☒ No Change	☒ No Change	☒ No Change												
Changes to product identification resulting from this PCN:															
<table border="1"> <tr> <td colspan="3">Assembly Site</td> </tr> <tr> <td>Amkor Phil</td> <td>Assembly Site Origin (22L)</td> <td>ASO: AKR</td> </tr> <tr> <td>TI Melaka</td> <td>Assembly Site Origin (22L)</td> <td>ASO: CU6</td> </tr> <tr> <td>TI Malaysia</td> <td>Assembly Site Origin (22L)</td> <td>ASO: MLA</td> </tr> </table>				Assembly Site			Amkor Phil	Assembly Site Origin (22L)	ASO: AKR	TI Melaka	Assembly Site Origin (22L)	ASO: CU6	TI Malaysia	Assembly Site Origin (22L)	ASO: MLA
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TI Melaka	Assembly Site Origin (22L)	ASO: CU6													
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Sample product shipping label (not actual product label)															
Group 1 Product Affected:															
<table border="1"> <tr> <td>LM2902N/NOPB</td> <td>LM324N/NOPB</td> </tr> </table>				LM2902N/NOPB	LM324N/NOPB										
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Group 2 Product Affected:															
<table border="1"> <tr> <td>LM2907N/NOPB</td> <td>LM361N/NOPB</td> <td>LP339N/NOPB</td> </tr> <tr> <td>LM2917N/NOPB</td> <td>LP2902N/NOPB</td> <td></td> </tr> <tr> <td>LM339AN/NOPB</td> <td>LP324N/NOPB</td> <td></td> </tr> </table>				LM2907N/NOPB	LM361N/NOPB	LP339N/NOPB	LM2917N/NOPB	LP2902N/NOPB		LM339AN/NOPB	LP324N/NOPB				
LM2907N/NOPB	LM361N/NOPB	LP339N/NOPB													
LM2917N/NOPB	LP2902N/NOPB														
LM339AN/NOPB	LP324N/NOPB														

Group 1 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>ADC0832CCN/NOPB</u> B	Qual Device: <u>LM6134BIN/NOPB</u> B	QBS Package Reference: <u>LM2594HVN</u> <u>-ADJ/NOPB</u>	QBS Package Reference: <u>SN74HC595</u> N	QBS Package Reference: : <u>SN74LS03N</u>
AC	Autoclave 121C	96 Hours	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	-
HAS	Biased HAST,	96 Hours	-	-	3/231/0	-	-

Type	Test Name / Condition	Duration	Qual Device: <u>ADC0832CCN/NOPB</u> <u>B</u>	Qual Device: <u>LM6134BIN/NOPB</u> <u>B</u>	QBS Package Reference: <u>LM2594HVN</u> <u>-ADJ/NOPB</u>	QBS Package Reference: <u>SN74HC595</u> <u>N</u>	QBS Package Reference: : <u>SN74LS03N</u>
T	130C/85%RH						
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
LI	Lead Fatigue	Leads	1/15/0	3/54/0	3/36/0	3/45/0	3/45/0
LI	Lead Pull	Leads	1/20/0	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	-	-
PKG	Lead Finish Adhesion	Leads	-	-	-	3/45/0	3/45/0
SD	Solderability	Pb free	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
VM	Visual / Mechanical	(per mfg. Site specification)	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
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0

- QBS: Qual By Similarity

- Qual Devices ADC0832CCN/NOPB and LM6134BIN/NOPB are qualified at LEVEL1-NACG

- Device LM6134BIN/NOPB contains multiple dies.

- 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

Group 2 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/NO</u> <u>PB</u>	Qual Device: <u>LM231AN/NO</u> <u>PB</u>	Qual Device: <u>LM2594HV</u> <u>N</u> <u>-ADJ/NOPB</u>	Qual Device: <u>LMC6482IN/NO</u> <u>PB</u>	QBS Package Reference: <u>SN74HC595</u> <u>5N</u>	QBS Package Reference: <u>SN74LS03</u> <u>N</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	-	-	-

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>
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 LEVEL1-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

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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
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Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com

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