



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20161207004
Qualification of Additional Assembly and Test sites for select Devices
Change Notification / Sample Request

Date: December 09, 2016
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.

We request you acknowledge 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 you require samples or additional data to support your evaluation, please request within 30 days.

The changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI's standard process.

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, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services

20161207004
Attachment: 1

Products Affected:

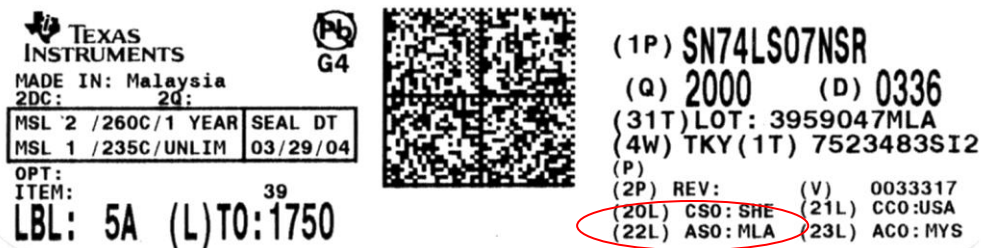
The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
ULN2803ADW	null
ULN2803ADWR	null

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

PCN Number:	20161207004			PCN Date:	Dec. 09 2016												
Title:	Qualification of additional Assembly and Test sites for select Devices																
Customer Contact:	PCN Manager	Dept:	Quality Services														
Proposed 1st Ship Date:	Mar 09 2017		Estimated Sample Availability:	Provided upon Request													
Change Type:																	
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Assembly Materials												
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification												
<input checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process												
<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												
	<input type="checkbox"/>	Part number change															
PCN Details																	
Description of Change:																	
<p>Texas Instruments is pleased to announce the qualification of additional Assembly and Test sites for the devices listed in the product affected section below. For the device in Group #2, there will be no construction differences between the current and additional site. For the devices in Group #1, Construction differences are as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>What</th> <th>UTAC</th> <th>Amkor</th> </tr> </thead> <tbody> <tr> <td>Mount Compound</td> <td>SID#PZ0031</td> <td>SID#101375281</td> </tr> <tr> <td>Mold Compound</td> <td>SID#CZ0164</td> <td>SID#101376660</td> </tr> <tr> <td>Bond Wire/Diameter</td> <td>Au, 1.0 mils</td> <td>Cu, 1.0 mils</td> </tr> </tbody> </table> <p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.</p>						What	UTAC	Amkor	Mount Compound	SID#PZ0031	SID#101375281	Mold Compound	SID#CZ0164	SID#101376660	Bond Wire/Diameter	Au, 1.0 mils	Cu, 1.0 mils
What	UTAC	Amkor															
Mount Compound	SID#PZ0031	SID#101375281															
Mold Compound	SID#CZ0164	SID#101376660															
Bond Wire/Diameter	Au, 1.0 mils	Cu, 1.0 mils															
Reason for Change:																	
Continuity of Supply																	
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):																	
None																	
Anticipated impact on Material Declaration																	
<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" type="checkbox"/>	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained from the TI ECO website .														
Changes to product identification resulting from this PCN:																	
Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (21L)	Assembly City														
UTAC	NS2	THA	Bangpakong														
Amkor, Philippines	AKR	PHL	Cupang, Muntinlupa City														
Hana Thailand	HNT	THA	Ayutthaya														

Sample product shipping label (not actual product label)



Topside Device marking (if included):

Assembly site code for NS2= B

Assembly site code for AKR = 4

Assembly site code for HNT = H

Product Affected

Group 1 Devices – Add Amkor Assembly/Test:

MAX222CDW	MAX222IDW	MAX222IDWRG4	ULN2803ADWG4
MAX222CDWG4	MAX222IDWG4	TRS222IDWR	ULN2803ADWR
MAX222CDWR	MAX222IDWR	ULN2803ADW	ULN2803ADWRG4
MAX222CDWRG4			

Group 2 Device – Add Hana Thailand Assembly/Test:

LM4040B20IDCKR



TI Information
Selective Disclosure

Qualification Report

New Package: Amkor SOIC - 18DW Wide SOIC Offload (Cu Wire, NiPdAu finish)

Approve Date 03-Nov-2016

Product Attributes

Attributes	Qual Device: MAX222IDWR	Qual Device: ULN2803ADWR
Assembly Site	AMKOR AP1	AMKOR AP1
Package Family	SOIC	SOIC
Wafer Fab Supplier	DFAB	SFAB
Wafer Process	LBC3S	J11
Flammability Rating	UL 94 V-0	UL 94 V-0

- QBS: Qual by Similarity

- Qual Devices qualified at LEVEL2-260C: MAX222IDWR, ULN2803ADWR

Qualification Results

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



Type	Test Name / Condition	Duration	Qual Device: MAX222IDWR.	Qual Device: ULN2803ADWR.
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0
AC	Autoclave 121C	144 Hours	3/231/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0
FLAM	Flammability (IEC 695-2-2)	--	-	3/15/0
FLAM	Flammability (UL 94V-0)	--	-	3/15/0
FLAM	Flammability (UL-1694)	--	-	3/15/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0
HAST	Biased HAST, 130C/85%RH	192 Hours	-	3/231/0
HTOL	Life Test, 150C	300 Hours	-	1/76/0 (Note 1)
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	3/231/0
LI	Lead Fatigue	Leads	-	3/66/0
LI	Lead Pull to Destruction	Leads	-	3/66/0
LFA	Lead Finish Adhesion	Leads	-	3/45/0
SD	Solderability	Pb	-	3/66/0
SD	Solderability	Pb Free	-	3/66/0
PD	Physical Dimensions	-	-	3/15/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0
TC	Temperature Cycle, -65/150C	750 Cycles	-	3/231/0
DS	Die Shear	Die	-	3/30/0
MQ	Manufacturability	(per mfg. Site specification)	-	Pass
WBP	Bond Pull	Wires	3/228/0	3/90/0
WBS	Ball Bond Shear	Wires	3/228/0	3/90/0
XR	X-ray	(top side only)	-	3/15/0
SA	Salt Atmosphere	-	-	3/66/0

- 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

Note (1): 1 unit lost during test, discounted.



TI Information
Selective Disclosure

Qualification Report

Qualify HNT as an alternate site for LM4040B20IDCKR
Approve Date 11-Nov-2016

Product Attributes

Attributes	Qual Device: LM4040B20IDCKR	QBS Product Reference: LM4040C201DBZR	QBS Process Reference: TL4242QKTTRQ1	QBS Package Reference: DG9411DCKR
Assembly Site	HNT	SHE	NFME	HNT
Package Family	SOT	SOT	TO-263	SOT
Wafer Fab Supplier	SFAB	SFAB	SFAB	FFAB
Wafer Process	J12	J12	J12	ASL3C
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V 0

- QBS: Qual By Similarity
- Qual Device LM4040B20IDCKR is qualified at LEVEL1-260CG

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM4040B20IDCKR	QBS Product Reference: LM4040C201DBZR	QBS Process Reference: TL4242QKTTRQ1	QBS Package Reference: DG9411DCKR
AC	Autoclave 121C	96 Hours	-	-	3/231/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	-	3/90/0	3/90/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	3/2400/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-
HBM	ESD - HBM	2500 V	-	1/3/0	-	-
HBM	ESD - HBM	1500 V	-	-	1/3/0	-
CDM	ESD - CDM	1500 V	1/3/0	-	-	-
CDM	ESD - CDM	1000 V	-	1/3/0	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	3/231/0	-
HTSL	High Temp. Storage Bake, 175C	500 Hours	-	-	1/45/0	-
HTSL	High Temp. Storage Bake, 150C	1000 cycles	-	-	-	3/231/0
LU	Latch-up	(per JESD78)	-	1/6/0	1/6/0	-
PD	Physical Dimensions	-	-	-	3/30/0	-
SD	Surface Mount Solderability	Pb	-	-	1/15/0	-
SD	Surface Mount Solderability	Pb Free	-	-	1/15/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	-
WBS	Ball Bond Shear, Cpk>1.67	Wires	-	-	1/30/0	-

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

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