TEXAS INSTRUMENTS 12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20150116000A
Qualification of JCET as an Alternate Assembly Site for Select Devices in PDIP Package
Change Notification / Sample Request

Dear Customer:

Revision A is to update the description of change to provide clarification on the included BOM comparison table.

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

PCN# 20150116000A
Attachment: 1

Products Affected:

According to our records, there are the affected device(s) that you have purchased within the past twenty-four (24) months. Technical details of this Product Change follow on the next page(s).

PCN Number:	20150116000A	**PCN Date:**	01/30/2015
Title:	Qualification of JCET as an Alternate Assembly Site for Select Devices in PDIP Package		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	04/19/2015	**Estimated Sample Availability:**	Provided upon Request

Change Type:

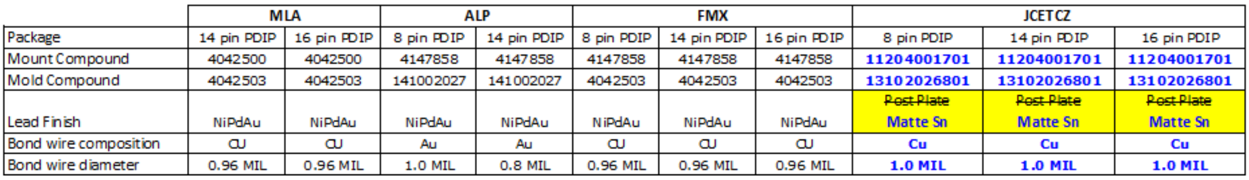
☒	Assembly Site	☐	Assembly Process	☒	Assembly Materials
☐	Design	☐	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☐	Wafer Fab Site	☐	Wafer Fab Materials	☐	Wafer Fab Process
		☐	Part number change		

PCN Details

Description of Change:

Revision A is to update the description of change to provide clarification on the included BOM comparison table seen below. These additions are highlighted and **bolded** below.

Texas Instruments is pleased to announce the qualification of JCET ChuZhou as an alternate Assembly site for the PDIP devices listed below. Material differences between the current sites and new site is shown below:



	MLA		ALP		FMX			JCETCZ		
Package	14 pin PDIP	16 pin PDIP	8 pin PDIP	14 pin PDIP	8 pin PDIP	14 pin PDIP	16 pin PDIP	8 pin PDIP	14 pin PDIP	16 pin PDIP
Mount Compound	4042500	4042500	4147858	4147858	4147858	4147858	4147858	**11204001701**	**11204001701**	**11204001701**
Mold Compound	4042503	4042503	141002027	141002027	4042503	4042503	4042503	**13102026801**	**13102026801**	**13102026801**
Lead Finish	NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu	~~Post Plate~~ Matte Sn	~~Post Plate~~ Matte Sn	~~Post Plate~~ Matte Sn
Bond wire composition	CU	CU	Au	Au	CU	CU	CU	**Cu**	**Cu**	**Cu**
Bond wire diameter	0.96 MIL	0.96 MIL	1.0 MIL	0.8 MIL	0.96 MIL	0.96 MIL	0.96 MIL	**1.0 MIL**	**1.0 MIL**	**1.0 MIL**

Upon expiry of this PCN TI will combine lead free solutions in a single *standard part number*, for example; *CD4052BE* – can ship with both Matte Sn and NiPdAu/Ag.

Example:

- **Customer order for 7500units of CD4052BE with 2500 units SPQ (Standard Pack Quantity per Reel).**
- **TI can satisfy the above order in one of the following ways.**
  - **I. 3 Reels of NiPdAu finish.**
  - **II. 3 Reels of Matte Sn finish**
  - **III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.**
  - **IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.**

Reason for Change:

Continuity of Supply

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

None

Changes to product identification resulting from this PCN:

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

Microchip Technology	Assembly Site Origin (22L)	ASO: ALP
TI Mexico	Assembly Site Origin (22L)	ASO: MEX
JCET Chuzhou	**Assembly Site Origin (22L)**	**ASO: GP6**

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
G4
MADE IN: Malaysia
2DC: 2Q:

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

Topside Device marking:
Assembly site code for MLA= K
Assembly site code for ALP= 8
Assembly site code for MEX= M
Assembly site code for GP6= F

Product Affected

CD4052BE	LM2902N	LM393AP	SN74HC04N
CD4066BE	LM2904P	NA555P	SN74HC138N
CD4541BE	LM293P	NE5532P	SN74HC14N
LM239N	LM324NE3	OP07CP	SN74HC165N
LM258AP	LM339AN	SN74HC00N	SN74HC595N
LM258P	LM358AP	SN74HC02N	ULN2003AIN

Qualification Report

JCET Chuzhou 8-pin PDIP (P) Cu Wire Package Qual
Approved on 03/11/2014

Product Attributes

Attributes	Qual Device: LM358P	Qual Device: LM393P	Qual Device: NE555P	QBS Package: CD4051BE	QBS Package: ULN2003AN
Assembly Site	JCET CHUZHOU	JCET CHUZHOU	JCET CHUZHOU	JCET CHUZHOU	JCET CHUZHOU
Package Family	PDIP	PDIP	PDIP	PDIP	PDIP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Site	SFAB	SFAB	SFAB	SFAB	SFAB
Wafer Fab Process	JI1	JI1	JI1	HC-C	JI1

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: LM358P, LM393P, NE555P

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

Type	Test Name / Condition	Duration	Qual Device: LM358P	Qual Device: LM393P	Qual Device: NE555P	QBS Package: CD4051BE	QBS Package: ULN2003AN
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-	-	3/231/0	3/231/0
AC	Autoclave, 121C	96 Hours	1/77/0	-	-	3/231/0	-
TC	Temperature Cycle, -65C/150C	500 Cycles	1/77/0	-	-	3/231/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	1/77/0	-	-	3/231/0	-
HTOL	Life Test, 150C	300 Hours	1/77/0	-	-	3/231/0	-
WBS	Ball Bond Shear	Wires	3/228/0	1/76/0	1/76/0	3/228/0	3/228/0
WBP	Bond Pull	Wires	3/228/0	1/76/0	1/76/0	3/228/0	3/228/0
SD	Solderability	8 Hours Steam Age-Pb Free	3/66/0	-	-	3/66/0	-
PD	Physical Dimensions	--	3/15/0	-	-	3/15/0	-
LI	Lead Fatigue	Leads	3/66/0	-	-	3/66/0	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	-	Pass	-
LI	Lead Pull to Destruction	Leads	3/66/0	-	-	3/66/0	-
FLAM	Flammability (IEC 695-2-2)	--	3/15/0	-	-	3/15/0	-
FLAM	Flammability (UL 94V-0)	--	3/15/0	-	-	3/15/0	-
FLAM	Flammability (UL-1694)	--	3/15/0	-	-	3/15/0	-

- 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

TI Qualification ID: 20130204-77481

Qualification Report

JCET Chuzhou 14-pin PDIP (N) Cu Wire Package Qual
Approved on 02/04/2014

Product Attributes

Attributes	Qual Device: LM324N	Qual Device: LM339N	Qual Device: SN74HC164N	QBS Package: CD4051BE	QBS Package: ULN2003AN
Assembly Site	JCET CHUZHOU	JCET CHUZHOU	JCET CHUZHOU	JCET CHUZHOU	JCET CHUZHOU
Package Family	PDIP	PDIP	PDIP	PDIP	PDIP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Site	SFAB	SFAB	SFAB	SFAB	SFAB
Wafer Fab Process	JI1	JI1	HCMOS	HC-C	JI1

- Qual Devices qualified at LEVEL1-260C: LM324N, LM339N
- Qual Device SN74HC164N is qualified at Not Classified
- QBS: Qual By Similarity

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

Type	Test Name / Condition	Duration	Qual Device: LM324N	Qual Device: LM339N	Qual Device: SN74HC164N	QBS Package: CD4051BE	QBS Package: ULN2003AN
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	1/77/0	3/231/0	3/231/0
AC	Autoclave 121C	96 Hours	-	-	1/77/0	3/231/0	-
TC	Temperature Cycle -65C/150C	500 Cycles	-	-	1/77/0	3/231/0	-
HTSL	High Temp. Storage Bake 170C	420 Hours	-	-	-	3/231/0	-
HTOL	Life Test, 150C	300 Hours	-	-	1/77/0	3/231/0	-
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0
WBP	Bond Pull	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0
SD	Solderability	Pb Free/Solder	-	-	3/66/0	3/66/0	-
PD	Physical Dimensions	--	-	-	3/15/0	3/15/0	-
LI	Lead Fatigue	--	3/66/0	3/66/0	3/66/0	3/66/0	-
LI	Lead Pull to Destruction	Leads	3/66/0	3/66/0	3/66/0	3/66/0	-
FLAM	Flammability (IEC 695-2-2)	--	-	-	-	3/15/0	-
FLAM	Flammability (UL 94V-0)	--	-	-	-	3/15/0	-
FLAM	Flammability (UL-1694)	--	-	-	-	3/15/0	-

- 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/1khrs, 140C/480hrs, 150C/300hrs, and 155C/240hrs
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1khrs, and 170C/420hrs
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700cyc and -65C/150C/500cyc

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

JCET Chuzhou 16-pin PDIP (N) Cu Wire Package Qual
Approved on 02/04/2014

Product Attributes

Attributes	Qual Device: CD4051BE	Qual Device: ULN2003AN
Assembly Site	JCET CHUZHOU	JCET CHUZHOU
Package Family	PDIP	PDIP
Flammability Rating	UL 94 V-0	UL 94 V-0
Wafer Fab Site	SFAB	SFAB
Wafer Fab Process	HC-C	JI1

- Qual Devices qualified at Not Classified: CD4051BE, ULN2003AN
- QBS: Qual By Similarity

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: CD4051BE	Qual Device: ULN2003AN
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	3/231/0
AC	Autoclave 121C	96 Hours	3/231/0	-
TC	Temperature Cycle -65C/150C	500 Cycles	3/231/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	3/231/0	-
HTOL	Life Test, 150C	300 Hours	3/231/0	-
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0
WBP	Bond Pull	Wires	3/228/0	3/228/0
SD	Solderability	8 Hours Steam Age	3/66/0	-
PD	Physical Dimensions	--	3/15/0	-
LI	Lead Fatigue	Leads	3/66/0	-
LI	Lead Pull to Destruction	Leads	3/66/0	-
ED	Electrical Characterization	Per Datasheet Parameters	1/77/0	-
FLAM	Flammability (IEC 695-2-2)	--	3/15/0	-
FLAM	Flammability (UL 94V-0)	--	3/15/0	-
FLAM	Flammability (UL-1694)	--	3/15/0	-

- 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/1khrs, 140C/480hrs, 150C/300hrs, and 155C/240hrs
- The following are equivalent HTSL options based on an activation energy of 0.7eV: 150C/1khrs, and 170C/420hrs
- The following are equivalent Temp Cycle options per JESD47: -55C/125C/700cyc and -65C/150C/500cyc

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

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