

12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20170404000 Qualification of 4221437 Underfill Material for select devices Change Notification / Sample Request

Date: April 05, 2017

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 www admin team@list.ti.com).

Sincerely,

PCN Team SC Business Services

20170404000 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
TMS32C6414EGLZ5E0	null
TMS32C6414EZLZA5E0	null
TMS32C6414EZLZA6E3	null
TMS32C6414EGLZ6E3	null
TMS32C6414EZLZ7E3	null

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

PCN Number: 20170404000				000					PC	N Date:	:	Apr	05, 2	017	
Title: Qualification of 42				21437	Und	derfill N	1aterial s	et for sele	ct de	vic	es				
Cus	stome	r Contact:	PCN A	Manage	<u>er</u>	Dept		Quality :	Servi	ces	5				
Pro	posed	l 1 st Ship Dat	e: Ju	ıly 05	, 201	1 /	stimate vailabil	d Sample							
Cha	ange T	уре:													
	Asse	mbly Site				Desig				1	Wafer Bu	ımp	Site	9	
	Assembly Process					Sheet			_	Wafer Bu	_				
		mbly Materials					rt number change		\perp	_	Wafer Bump Process				
\mathbb{H}		nanical Specific		~	\vdash	Test Site				_	Wafer Fab Site Wafer Fab Materials		iala		
Ш	Раск	ing/Shipping/I	_abelir	ig		rest	Process		ᆛH	_	Wafer Fab Materials Wafer Fab Process				
						PCI	l Detai	ls			walei i ai	U F	TUCE	33	
Des	scripti	on of Change	:												
		truments Inco ices listed in t			Affe				2214	37	Underfill	II M	ateri	al for	
	Hn	derfill Materia		4202			4221	-							
	011	deriii Materia	!	7202	171		7221	137							
Dat	son f	or Change:													
Cor	ntinuity continu	of supply. uation of LOCT											rial		
Cor Dis- disc	itinuity continu	of supply.	raw n	nateria	al inv	ventor	y will sup	port until	end o	of A	April 201	.7.		ntive)	•
Cor Dis- disc	ntinuity continu continu ticipat	of supply. Jation of LOCT Jation. Current	raw n	nateria	al inv	ventor	y will sup	port until	end o	of A	April 201	.7.		ıtive)	:
Cor Disc disc Ant	ntinuity continu continu ticipat	of supply. Jation of LOCT Jation. Current	raw n	nateria n, Fit,	al inv Fun	ventor	y will sup Quality	port until	end o	of A	April 201	.7.		itive)	:
Cor Disc disc Ant	continuity continu ticipat ne ticipat	of supply. uation of LOCT ation. Current ed impact or	Form Mate	Material D Production of the control	Fun Pecla erial ducti ase. ainec	nction, aratio Decla ion dat Upon d at th	Quality rations of a and will production site link	or Relial Product (I be availa on release	conteable for the the	of /	reports a cowing the vised reports	are e p	driv rodu	ren fro ction n be	
Cor Dis- disc Ant Nor Ant	ntinuity continu continu ticipat ne ticipat No Im Mater	of supply. uation of LOCT uation. Current ed impact or pact impact or	Form Mate	material D Material D Material D rele obta http	Peclar erial duction ase.	aration Decla ion dat Upon d at th	Quality n rations of a and wide production in the site link com/qua	or Relial Product (I be availa on release below lity/docs/r	conteable for the the	of /	reports a cowing the vised reports	are e p	driv rodu	ren fro ction n be	
Cor Dis- disc Ant Nor Ant	continuity continu ticipat ne ticipat No Im Mater	of supply. Juation of LOCT Juation. Current Juation of LOCT Juation of	Form Mate	material D Material D Material D rele obta http	Peclar erial duction ase.	aration Decla ion dat Upon d at th	Quality n rations of a and wide production in the site link com/qua	or Relial Product (I be availa on release below lity/docs/r	conteable for the the	of /	reports a cowing the vised reports	are e p	driv rodu	ren fro ction n be	
Cor Disc disc Ant Nor Ant	continuity continuity continuiticipat ne continuiticipat No Im Mater	of supply. Juation of LOCT Juation. Current Juation of LOCT Juation of	Form Mate	material D Material D Material D rele obta http	Peclar erial duction ase.	aration Decla ion dat Upon d at th	Quality n rations of a and wide production in the site link com/qua	or Relial Product (I be availa on release below lity/docs/r	conteable for the the	of /	reports a cowing the vised reports	are e p	driv rodu	ren fro ction n be	
Character Charac	continuity	of supply. Juation of LOCT Juation. Current Juation. Current Juation of LOCT Juation of	Mate	material D Material D Material D rele obta http	Peclar erial duction ase. Decimo erial duction ase. Decimo erial e	nction, aratio Decla ion dat Upon d at the www.ti.	Quality n rations of a and wide production of the site link com/quality g from t	r Product (I be availated below his PCN:	Conteable for the the mater	of / (rent ollowers)	reports a contents owing the vised reports contents over the conte	are e poort	driv rodu s car	ren fro ction n be	om
Change Ch	continuity	of supply. Juation of LOCT Lation. Current Led impact or	Mate	material D Material D Material Proof rele obtate http cation 32C64.	Pecla erial ducti ase. aineco://w n res	nction, aratio Declation dat Upond at the www.ti. sultin	q will sup Quality n rations of a and wi production e site link com/qual g from t	r Product (I) be availad on release (a below lity/docs/r his PCN:	Conteable for the mater	of / (rent collection)	reports a contents owing the con	are e poort	driv rodu s car rch.ts	ren fro ction n be sp	om
Change Ch	continuity	of supply. Jation of LOCT Jation. Current Jed impact or Jed imp	raw n Form Mate	Mat proorele obta http	Pecla erial ducti ase. aineco://w n res	nction, aratio Decla ion dat Upon d at th www.ti. sultin	rations of a and with production site link com/qua g from t	Product (I be availated below his PCN:	Conteable for the mater	ent rev	reports a cowing the vised reports a contents of TMS32C TMS32C	are e poort	driv rodu s car rch.ts	ren fro ction n be Sp LZ6E3	om
Change Ch	continuity	of supply. Jation of LOCT Jation. Current Jed impact or Jed imp	TMS: TMS: TMS:	material D	Peclarical inverse period of the control of the con	nction, aratio Declation dat Upond at the www.ti. sultin	q will sup Quality n rations of a and wide production of a site link com/qua g from t TMS3: TMS3: TMS3: TMS3:	r Product (I) be availad on release (a below lity/docs/r his PCN:	Conteable for the mater	ent rev	reports a contents of TMS32C TMS32C TMS32C	are e poort Sear C641 C641	e driverodues can	ren fro ction n be Sp LZ6E3 LZ7E3 LZA5E	om 0
Change of the control	itinuity continu conti	of supply. Jation of LOCT Jation. Current Jed impact or Jed imp	TMS: TMS: TMS: TMS:	material D Material D Material D rele obta http cation 32C64: 32C64: 32C64: 32C64:	Peclar erial ductivase. Discription reserved in the contract of the contract o	nction, aratio Decla ion dat Upon d at the www.ti. sultin	rations of a and will product it is site link com/qua g from t	or Relial Product (I be availa on release below lity/docs/r his PCN: 2C6415EGL	Conteable for the the mater	ent rev	reports a cowing the vised reports a contents of TMS32C TMS32C	are e poort 6641 6641	driv rodu s cai cch.ts	ren fro ction n be Sp LZ6E3 LZ7E3 LZA5E LZA6E	om 0
Change Ch	continuity	of supply. Juation of LOCT Juation. Current Ju	TMS: TMS: TMS: TMS: TMS: TMS:	material D Material D Material D Material D Material D Cation 32C64: 32C64: 32C64: 32C64: 32C64: 32C64:	Pecla erial duction ase. Discovery (March 1988) 14EZ 14EZ 14EZ 14EZ 14EZ 14EZ 14EZ 14EZ	aration Declation dat the www.ti. sultin	rations of a and will product it is site link com/quare grow to TMS3. TMS3. TMS3. TMS3. TMS3. TMS3. TMS3. TMS3. TMS3.	r Product (I be availated below his PCN: 2C6415EGL 2C6415EGL 2C6415EGL 2C6415EGL	Conteable for the mater ZASEC ZASEC ZMSE ZSEC ZSEC ZSEC	ent rev	reports a contents of TMS32C TMS2C T	are e poort 6641 6641 6641	driv rodu s car cch.ts 16EG 16EG 16EG 16EG	ren fro ction n be Sp LZ6E3 LZ7E3 LZA5E LZA6E LZ5E0	om 0
Change Ch	continuity	of supply. Jation of LOCT lation. Current led impact or led impact or lation. The lation of LOCT led impact or lation of LOCT led impact to the lation of LOCT led impact to the lation of LOCT led impact led im	TMS: TMS: TMS: TMS: TMS: TMS: TMS: TMS:	material D Mat proorele obta http cation 32C64: 3	Pecla erial duction ase. aineco://wnresse.14EZ14EZ14EZ14EZ14EZ14EZ14EZ14EZ	ration Declation dat the www.ti. LZ6E3 LZ7E3 LZA5E6 LZA5E6	rations of a and with productive site link com/qua TMS3.	Product (I) be availated below his PCN: 2C6415EGL 2C6415EGL 2C6415EGL 2C6415EGL 2C6415EZL 2C6415EZL	Conteable for the mater ZA5E0 ZA6E3 Z7E3	of / (rent collered)	reports a cowing the vised reports a contents of the vised reports of th	are e poort 6641 6641 6641	driv rodu s car rch.ts 16EG 16EG 16EG 16EZ	LZ6E3 LZA5E LZA5E LZA6E LZA6E LZ5E0 LZ6E3	om 0 3

Qualification Report

Solder Bump FCBGA Underfill Conversion to Namics 4221437 for Kelvin (TMS320C6414/6415/6416E) products

Approve Date 22-Mar-2017

Product Attributes

1 Todace Attributes				
Attributes	Qual Device: KELVIN2			
Die Attributes	-			
Die Revision	2.0*			
Wafer Process	1233C035.A (120nm)			
Passivation	PBO			
Package Attributes	-			
Assembly Site	PHI (TIPI)			
Package Family	FCBGA			
Package Designator	ZLZ			
Package Size (mils)	23mmx23mm			
Pin Count	532			
Solder Ball Composition	SnAgCu**			
Green Status	RoHS			

^{*}Die Revision 1.0 is qualified by similarity.

Qualification Results

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

Туре	Test Name / Condition	Duration	Qual Device: KELVIN2
PC	PreCon Level 4	Moisture Soak/96hrs at 30C/60%RH	3/399/0
TC	Temperature Cycle, - 55/125C, 700cyc	-55/125C, JEDEC Soak Mode 1, 700cyc	3/165/0
UHAST	Unbiased HAST 110C/85%RH	264 Hr/110C/85%RH	3/165/0

⁻ Moisture Preconditioning was performed for Unbiased HAST and Temperature Cycle

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

^{**}Sn/Pb solder ball product part numbers are qualified by similarity as solder ball material has no expected effect on bump-interconnect underfill-influenced failure mechanisms.

⁻ THB, HTSL, and HTOL are not required tests for this qualification but were completed for product qualification with previous underfill material (current production).