Texas Instruments

FINAL PRODUCT CHANGE NOTIFICATION
PCN# 20010118000
Change: Flip-chip BGA (GLS) Metal Layer Substrate and Underfill Change

To: Trautwein Andreas
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Date: 13 Jul 2001

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Dear Customer,

Texas Instruments Incorporated (TI), is announcing a change in materials used to assemble the Ball Grid Array -Flip-chip (BGA-FC) GLS package code at our TI Philippines (TIPI) assembly site.

You will find in Attachment-1 the technical details of this Product Change Notification.
As Attachment-1 are Product(s) concerned and qualification results

Should you need any assistance on this letter or technical information, please feel free to contact your local TI Sales Representative or T.I contact name listed in the attachment.

- Customer concerns with this Notification should be raised within 15 days of the date of this correspondence. With no response from your side, this Procedure will be deemed accepted.

- Shipment to customers of Product with Change described in this Notification is planned starting September 2001.

Sincerely,

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France

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Should you need any updating of your contact, please fax back with below information:

Company:	***Post Code:***	***City:***
Contact Name:	***Country:***	
Function:	***Fax:***	
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PO Box:	***e-mail:***	

FINAL PRODUCT CHANGE NOTIFICATION

PCN# 20010118000

ATTACHMENT-1

Product concerned by Change:

DEVICE	CUSTOMER PART NUMBER
DC-6202GLS	
TMS320C6202GLS200	
TMS320C6202GLS250	
TMX320C6202GLS	
TMX320C6202GLS1225	
TNETD4200GLS240	
TNETD4200GLSA240	

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

Texas Instruments Incorporated

Flip-chip BGA (GLS) Metal Layer Substrate and Underfill Change
SAMPLE REQUEST / FINAL NOTIFICATION LETTER
PCN#20010118000

July 11, 2001

I. Introduction:

Texas Instruments Incorporated (TI), is announcing a change in materials used to assemble the Ball Grid Array -Flip-chip (BGA-FC) GLS package code at our TI Philippines (TIPI) assembly site. These packages are currently assembled with an **8 Metal Layer Substrate with Solder Injection and NAMICS 8437-2 as the Underfill materia1. The material will be changed to a 4 Metal Layer Substrate with a Copper lead with Organic Solderability Protection (Cu-OSP - without Solder Injection) and using Dexter Hysol FP4549 as the Under-Fill material**.

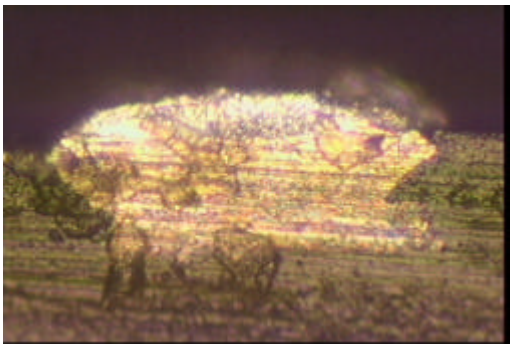
This change is planned for 3Q01 production and product shipped after September 11, 2001 may have this change in the assembly materials.

II. DESCRIPTION OF CHANGE

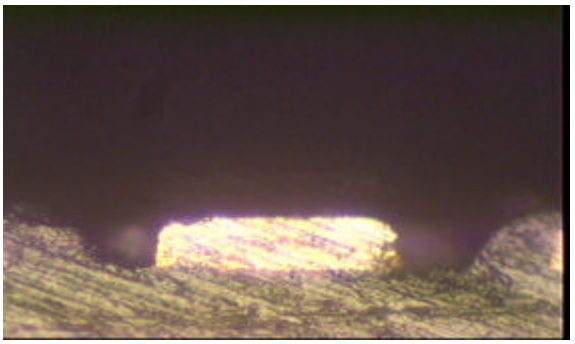
FROM: SUBSTRATE: 8 METAL LAYER with SOLDER INJECTION (substrate flip-chip mount pad)
UNDER-FILL: NAMICS 8437-2

TO: SUBSTRATE: 4 METAL LAYER WITHOUT SOLDER INJECTION (Cu OSP - substrate flip-chip mount pad).
UNDER-FILL: DEXTER HYSOL FP4549

The solder in the injection process is used to protect the base metal of the flip-chip substrate mount pad before the chip is mounted. The new substrate design uses an organic film to protect the base metal of the flip-chip mount pad.



Cross -section of a flip-chip substrate mount pad with solder injection



Cross-section of a flip-chip substrate mount pad without solder injection

This change is in addition to the LID change previously described in PCN20000927001 affecting the same package and products.

III. Benefits:

- Simpler, more consistent material manufacturing process
- Improved material availability.
- Supports the strategic plan for the standardization of this package design

IV. Product Reliability Qualification

The following data is the reliability qualification results for the BGA-FC material change. This change applies to all versions of the product affected.

Qual Vehicle

Device:	TMS320C6202GLS
Process	1833C07
Wafer Fab:	DMOS5 (Dallas, Texas)
Assembly Site:	TI Philippines (TIPI)
Pins:	384
Package Code/Type:	GLS/BGA-FC
Package Dimensions:	18x18mm
Moisture Level:	4

Qualification Test Results :

Test	Conditions	Sample Size (PASS/FAIL)
Thermal Shock	-55°C/125°C, 1000 cycles	78/0
Temperature Cycle	-55°C/125°C, 1000 cycles	78/0
HAST	110°C/85%RH, 288 hours	78/0
Storage	150°C 1000 hours	78/0
Board Level Reliability test (BLR)	-40°C/125°C, 1000 cycles	55/0
Temperature Humidity Board (THB) test	85 °C/85%RH, 288 hours	77/0
Post Preconditioning	Test	40/0
Post Preconditioning	Evaluation	20/0

Notes: All samples made up of 3 assembly lots. All samples were preconditioned to level 4 prior to testing.

V. Product Affected

Please see next page for a list of parts affected by this notice.

Please let us know if SAMPLES are required.

For questions regarding this notice, please contact your local Field Sales Representative or :

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Texas Instruments, Inc.
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T e x a s I n s t r u m e n t s I n c o r p o r a t e d
Flip chip BGA (GLS) Metal Layer Substrate and Under-fill Change
PCN#20010118000

July 11, 2001

Devices affected by this change notice

TMS320C6202GLS200
TMS320C6202GLS250
TMS320C6202GLS250X
TMX320C6202GLS
TMX320C6202GLS12
TMX320C6202GLS1225
TMX320C6202GLS225
TMX320C6202GLS250
TMX320C6204GLS
TNETD4200CGLS
TNETD4200GLS
TNETD4200GLS200
TNETD4200GLS240
TNETD4200GLSA240
TNETD4250GLS
WDC6202GLS200
WDC6202GLS250

This notice does not apply to product on end of life status. Should product affected be on a previously issued lifetime buy/withdrawal notice, this letter does not extend the life of that product or change the lifetime buy offering/discontinuance plan.