



## New Material Set and Part Marking for Chip Scale BGA Packages

PCN2004-05 (v1.1) December 6, 2004

Product / Process Change Notice

### Overview

Xilinx is transitioning the Chip Scale BGA package to a new material set (mold compound and die-attach epoxy) and new top mark. The Chip Scale BGA packages affected by these two changes are CS48, CP56, and CP132. In addition, the part marking change affects the CSG48, CPG56 and CPG132.

### Description

Package	Material Set Change	Top Mark Change
CP56	√	√
CP132	√	√
CS48	√	√
CSG48		√
CPG56		√
CPG132		√

**Table 1: Type of Change for Each Package**

The marking change is being initiated for added traceability and increased consistency with standard Xilinx package markings. The package and pin count are being simplified (reference Table 5) and the circuit design code, fab code, and geometry code are being added.

The material set change is being initiated to consolidate Xilinx's material set, which improves product availability and increases our ability to satisfy customer demand. All Xilinx products offered in the CP56, CP132, and CS48 are converting to the new material set.

Current Material Set		New Material Set	
D/A Epoxy	Mold Compound	D/A Epoxy	Mold Compound
QMI 596	Plaskon SMTB-1	Ablestik 2300	Sumitomo EME 7730

**Table 2: Current and New Material Set**

The new material set has the following characteristics:

- Ablestik 2300 has improved adhesion, low stress and ultra low moisture-absorption
- Meets the existing moisture sensitivity level 3 per JEDEC standard J-STD-020B.
- Meets UL94 V-0 flammability requirements
- Meets 240°C maximum reflow temperature

## Qualification Data

Test	Condition	Device/Package	Sample Size	Results
Preconditioning	J-STD-020B Moisture Sensitivity	XC2C64/CP56	224	Passed per J-STD-020B criteria
Temperature Cycle	JESD22-A104-B Condition B, -55°C to 125°C	XC2C64/CP56	76	0 failure after 1120 cycles
Pressure Pot	121°C, 100% RH, 29.7 psi	XC2C64/CP56	74	0 failures after 96 hrs.
Temperature Humidity Test (Unbiased)	85°C / 85% RH	XC2C64/CP56	74	0 failure after 1,002 hrs

**Table 3: Xilinx Qualification Data for Material Set Change**

Test	Condition	Package (using Amkor test die)	Sample Size	Results
Preconditioning	J-STD-020B Moisture Sensitivity	FT256	282	Passed per J-STD-020B criteria
Temperature Cycle	JESD22-A104-B Condition B, -55°C to 125°C	FT256	77	0 failures after 1000 cycles
Unbiased HAST	130°C / 85% RH	FT256	51	0 failures after 96 hours
Temperature Humidity Test	85°C / 85% RH	FT256	77	0 failures after 1000 hrs
HTS	150°C	FT256	77	0 failures after 1000 hrs

**Table 4: Amkor Qualification Data for Material Set Change**

## Traceability

Product manufactured in the above listed packages on or after assembly date code 0441 (starting October 2, 2004) include the new part marking (per Table 1). Product manufactured in the above listed packages on or after assembly date code 0449 (starting November 27, 2004) include the new material set. The date code can be found on the package topmark, see example of topmark below. The first example shows current part marking, and the second example shows the new part marking.

Example of a typical current CP56 package topmark:



- Line 1: 2C64 = Device (XC2C64 in this example)
- Line 2: F1122460 = Lot Number  
0449 = Date Code
- Line 3: Philippines = Country of Origin
- Line 4: CP56 = Package and Pin Count  
6 = Speed  
C = Temperature Grade

Example of a typical new CP56 package topmark:



- Line 1: 2C32 = Device (XC2C32 in this example)
- Line 2: F1122460 = Lot Code  
0449 = Date Code
- Line 3: Philippines = Country of Origin
- Line 4: C3 = Package and Pin Count ID (see table)  
AMP = Circuit design rev/Fab code/Geometry code  
6 = Speed Grade  
C = Temperature Grade

C1	CS48
C2	CSG48
C3	CP56
C4	CPG56
C5	CPI132
C6	CPG132

**Table 5: New Package and Pin Count ID**

## Response

For additional information or questions, please contact [Xilinx Technical Support](#).

## Revision History

The following table shows the revision history for this document.

Date	Version	Revision
6/21/04	1.0	Initial release.
12/6/04	1.1	Modify to clarify the marking change will be identified by date code 0441 whereas the material set change will be identified by date code 0449.