



Spartan, Virtex and Coolrunner Series Wire Bond BGA Packaging Material Source Addition

XCN11018 (v1.0) June 13, 2011

Product Change Notice – For Information Only

Overview

The purpose of this notification is to communicate the addition of new supply sources for wire bond BGA package core and prepreg material for Spartan®/-XL/-II/-IIE/-3/-3E/-3A/-3AN/-3ADSP/-6, XC95XXX, XC95XXXL, Virtex®, Virtex®-E, Virtex®-II/-II Pro, and CoolRunner™ and CoolRunner™-II product.

Description of Change

Due to the recent earthquake in Japan, there is a worldwide shortage of Bismaleimide-Triazine (BT) resin material used in the package core and prepreg layers of wirebond packages. To enable supply continuity, additional sources of package core and prepreg are being qualified. The additional package core and prepreg sources are from Nanya, Hitachi and Doosan suppliers. There are no changes in the form, fit or function compared with the previous package material set.

Products Affected

The products affected by this change are included in [Table 1](#). For inquiries on whether specific devices are affected, see the Response section. The package change affects all production speed, package, and temperature variations of the XC commercial (C) and industrial (I) grade devices. XA Automotive, XQ and Q grade devices are not affected by this Product Change Notice and will not be released with the new substrate.

Table 1: Product Affected

Product Family	Device Name	Package Pin Count
COOLRUNNER2	XC2CXXXX/XC2CXXXXA	CP(G)56 ; CP(G)132; FT(G)256
COOLRUNNER	XCRXXXXX	CS(G)48;CP(G)56;FT(G)256
EASYPATH	XCEXXXX	FG256
SPARTAN2	XC2SXXX	FG(G)256;FG(G)456
SPARTAN2E	XC2SXXXE	FT(G)256;FG(G)456;FG(G)676
SPARTAN3	XC3SXXXX	FT(G)256;FG(G)320; FG(G)456;FG(G)676;FG(G)900;FG1156
SPARTAN3A	XC3SXXXXA	FT(G)256;FG(G)320;FG(G)400;FG(G)484;FG(G)676
SPARTAN3A-DSP	XC3SDXXXXA	CS(G)484;FG(G)676
SPARTAN3AN	XC3SXXXAN	FT(G)256;FG(G)400;FG(G)484;FG(G)676
SPARTAN3E	XC3SXXXE	FT(G)256; CP(G)132;FG(G)320;FG(G)400;FG(G)484
SPARTAN6	XC6SLXXXX	FT(G)256;CS(G)225;CS(G)324;CS(G)484;FG(G)484; FG(G)676;FG(G)900
SPARTANXL	XCSXXXL	BG(G)256
VIRTEX	XCVXXX	BG(G)256;FG(G)256
VIRTEX2	XC2VXXX	BG(G)575;BG(G)728;FG(G)256;FG(G)456;FG(G)676
VIRTEX2PRO	XC2VPXXX	FG(G)256;FG(G)456;FG(G)676
VIRTEXE	XCVXXXXE	FG(G)256;FG(G)456;FG(G)900;FG1156
XC40XXXLA	XC40XXXLA	BG(G)256;BG(G)352;BG(G)432
XC95XXXL	XC95XXXL	CS(G)48;FG(G)256
XC95XXX	XC95XXX	CS(G)48

Key Dates and Cross Shipping Information

In order to provide sufficient review time before new core implementation, Xilinx is issuing this notification 30 days prior to shipments of product using these additional sources of core and prepreg material.

Xilinx will begin to cross ship product with the additional sources of substrate core and prepreg layers upon release of this PCN FYI and qualification completion on or after July 15, 2011.

Qualification Data

Xilinx has completed an investigation and review of the reliability data for additional core material from Xilinx's assembly suppliers in [Table 2](#) & [Table 3](#). The Nanya, Hitachi and Doosan core materials are already qualified and in mass production at Xilinx's assembly suppliers.

Table 2: Generic Supplier Qualification Vehicles vs Xilinx's Wire-bonded BGA Packages

Supplier Generic Package	Equivalent Xilinx's Wire-bonded BGA packages
¹ PBGA, 676 Ball	FG676 and FGG676
² TFBGA, 360 Ball	CS324 and CGS324
PBGA, 452 Ball	FG456 and FGG456
TFBGA, 409 Ball	CS484 and CGS484
TFBGA, 144 Ball	CP132 and CPG132

¹ PBGA – Plastic Ball Grid Array

² TFBGA – Thin & Fine-pitch Ball Grid Array

Table 3: Supplier Reliability Stress Test Results

Core supplier	Package	Preconditioning (min of 192hrs at 30°C/60%RH and 3X reflow at 260°C Peak Temperature)	Temperature Cycle 'B' condition (T/C-B, min of 1000 cycles, -55°C to 125°C)	Unbiased Highly Accelerated Stress Test (UHASt, 168hrs, 130°C/85%RH, 230kPa)	Result
Nanya	PBGA, 676 Ball	Yes, before T/C-B and UHASt	0/44 *2 lots	0/22 *1 lot	Pass
Hitachi	PBGA, 676 Ball	Yes, before T/C-B and UHASt	0/44 *2 lots	0/22 *1 lot	Pass
Hitachi	TFBGA, 360 Ball	Yes, before T/C-B and UHASt	0/70 *1 lots	0/70 *1 lot	Pass
Doosan	PBGA, 452 Ball	Yes, before T/C-B and UHASt	0/77 *3 lots	0/77 *3 lots	Pass
Doosan	TFBGA, 409 Ball	Yes, before T/C-B and UHASt	0/45 *3 lots	0/45 *3 lots	Pass
Doosan	TFBGA, 144 Ball	Yes, before T/C-B and UHASt	0/77 *3 lots	0/77 *3 lots	Pass

Xilinx will perform the appropriate reliability evaluations with Xilinx device/package in order to ensure the products meet or exceed Xilinx's Quality and Reliability requirements. Xilinx qualification data is expected to be available per the qualification schedule in [Table 4](#). This PCN will be updated as the data becomes available.

Table 4. Estimated Qualification Reliability Stress Test Schedule

Package Type	Substrate Core Supplier	Estimated Conditional Qualification Schedule ^{Note 1}	Estimated Production Release Schedule ^{Note 2}
Wire Bond BGA Package FG(G) & TF(G)	Nanya Hitachi Doosan	Early July 2011	July 15, 2011

Note:

1. Estimated conditional qualification is based on MSL 3A + TCC 250 cycles & BHAST (130) 96 hours pass.
2. Estimated production qualification and release is based on MSL 3A + TCC 500 cycles or TCB 1200 cycles pass.

Response

No response is required. For additional information or questions, please contact [Xilinx Technical Support](#).

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Revision History

The following table shows the revision history for this document:

Date	Version	Description of Revisions
6/13/2011	1.0	Initial release.

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