



Revision 1.1.0
PCN Issue Date: 03/03/2017
Rev 1.1.0 Date: 04/13/2017

PROCESS CHANGE NOTIFICATION

PCN1701

Die Attach Film Material Change for Cyclone® V 484-Pin UBGA Package

This is not a new PCN issuance. This is an update to PCN1701; please see the [revision history](#) table for information specific to this update

Change Description:

Intel's Programmable Solutions Group ("Intel PSG", formerly Altera) is announcing a change in the Bill of Material (BOM) for Cyclone V products in 484-Pin UBGA Package (PUBGA) assembled at Amkor Korea (ATK) sites.

Table 1: Changes to BOM

Material	Change From	Change To
Die Attach Film (DAF)	EM760	ATB130

Note: The rest of the BOM remains the same

Products Affected:

Product Family: Cyclone V
Package: PUBGA – 484 pins

See [Appendix 1](#) for the complete list of affected Ordering Part Numbers (OPN).

Recommended Action

Customers are requested to:

1. Acknowledge receipt of this notification.
2. Review and provide approval of this change at the earliest convenience.

Please refer to the “Product Transition Dates” for the key milestones.

Upon implementation, Intel Programmable Solutions Group (PSG) may still continue to ship pre-change material until inventory is depleted.

Method to Identify Change Product:

Post-PCN material can be distinguished by the Date Code. Products with a Date Code of 1725 and later will contain the new ATB130 DAF material.

Product Transition Dates:

Customers are requested to take note of the key dates shown in the table below.

Table 2:

<i>Milestone</i>	<i>Date</i>
Last date to acknowledge receipt of this notification ¹	April 17, 2017
Estimated earliest shipment date of changed products ²	July 31, 2017

Note 1: JESD46D stipulates that a change is deemed acceptable if no response or acknowledgement is received within 30 days from the date of the notification.

Note 2: Effective the first ship date listed in Table 2, Intel PSG will begin the shipment of changed products.

Intel PSG reserves the right to continue the shipment of pre-change product after the change implementation date, and customers will receive shipments of either pre-conversion or changed product.

Reason for Change:

The DAF change is a part of continuous long-term reliability improvement. The ATB130 DAF material was tested and determined to demonstrate improved package performance.

Impact and Benefit of Change:

This change does not affect the form, fit, and function of the product. The change has been successfully evaluated to meet or exceed quality and reliability requirements (See Qualification Data, Table 3)

Products Affected:

Product Family: Cyclone V

Package: PUBGA 484

See [Appendix 1](#) for the complete list of affected Ordering Part Numbers (OPN).

Qualification Data:

Table 3

Test	Timepoint	Conditions	# of Lots	SS/lot	Results (Fail/ Total SS)
Preconditioning		MSL 3	3	68 – 140 units	0/311
High Temperature Storage Test (Bake)	500hrs	150°C	3	25 – 35 units	0/80
	1000hrs	150°C	3	25 – 35 units	0/80
Temperature Cycle Test (TCB)	700X	-55°C /125°C	3	25 – 35 units	0/88
	1000X	-55°C /125°C	3	25 – 35 units	0/88
High Temperature, High Humidity Biased Test (THB)	500hrs	85°C/85%RH	3	25 – 40 units	0/90
	1000hrs	85°C/85%RH	3	25 – 40 units	0/100
Unbiased Highly Accelerated Stress Test (Uhast)	96hrs	130°C / 85%RH	3	25 – 80 units	0/140

Vehicle Device: 5CEFA9U19A7NDV

Contact

For more information, please contact Sales or Customer Quality Engineering (CQE) in your region, or submit a Service Request at Intel PSG's [mySupport](#) website.

Customer Notifications Subscription

Customers that have subscribed to Intel PSG's customer notification mailing list will receive the PCN document automatically via email.

If you would like to receive customer notifications by email, please subscribe to our customer notification mailing list at:

<https://www.altera.com/subscriptions/email/signup/eml-index.jsp>

Intel PSG references JESD46 guidelines for PCN.

In accordance with JESD46D, this change is deemed acceptable to the customer if no acknowledgement is received within 30 days from this notification.

Revision History

Date	Rev	Description
03/03/2017	1.0.0	Initial Release
04/13/2017	1.1.0	Qualification Data Update

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Appendix 1. Affected Ordering Part Numbers

Affected Ordering Part Numbers (OPN)		
5CEBA9U19C7N	5CEFA9U19C7N	5CGTFD9A5U19A7N
5CEBA9U19C8N	5CEFA9U19C8N	5CGTFD9A5U19C7N
5CEFA9U19A7N	5CEFA9U19I7N	5CGTFD9A5U19I7N
5CEFA9U19A7NDV	5CEFA9U19I7NAA	5CGXBC9A6U19C7N
5CGXBC9A7U19C8N	5CGXFC9A6U19A7N	5CGXFC9A6U19C7N
5CGXFC9A6U19I7	5CGXFC9A6U19I7N	5CGXFC9A6U19I7NAA
5CGXFC9A6U19I7NSE	5CGXFC9A7U19C8N	