

Revision 1.1.0

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CUSTOMER ADVISORY ADV2001

Pre-alert on End-of-Life (EOL) of Flip Chip Products with Leaded Solder Balls 2nd level interconnect

This is not a new ADV issuance. This is an update to ADV2001; please see the <u>revision history</u> table for information specific to this update

Description:

Intel® is pre-notifying customers of an upcoming End-of-Life involving Field Programmable Grid Array (FPGA) Flip Chip products with leaded solder balls as 2nd level interconnect. These products currently use eutectic Tin-Lead bumps for 1st level interconnect.

Intel received notification from the foundry supplier that eutectic leaded bumped die supply will be discontinued. There is foreseen shift in demand towards leadfree bumping with the EU Restriction of Hazardous Substances (RoHS) Directive Exemption 15 scope change in February 29, 2020 and subsequent expiry in July 21, 2021.

Table 1 below outlines the replacement availability and Table 2 notes important information about the replacement leadfree products. Replacement parts are with "G" suffix on the part number (OPN) indicating leadfree bumps and leadfree solder balls.

Table 1: Replacement Availability Status

	Available immediately	Availability to be advised
Product	Arria® II Stratix® III	Arria® GX
Family	 Arria® V Stratix® IV 	Stratix® II
	• Arria® V SoC • Stratix® V	• Stratix® II GX
Samples &	Part numbers with "G" suffix	Samples of parts with leadfree
Production	indicating leadfree bumps and	bumps and leadfree solder balls not
Timeline	leadfree solder balls.	yet available. Sample availability date
		to be advised.

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Table 2: Important Information About the Replacement Leadfree Products

•	ant information About the Replacement Leadfree Products		
Ordering code	New Ordering Part Numbers (OPNs) are assigned to the replacement		
	products. A "G" suffix is added to indicate the fully leadfree		
	replacement.		
	Existing OPNs with leaded solder bumps and leaded solder balls will		
	eventually be retired and a separate Product Discontinuation Notice		
	(PDN) will be issued to officially notify customers.		
Quality and	Products with replacement available now: Package reliability		
Reliability	qualification testing has been successfully completed.		
Qualification			
Status	Products with to-be-advised date of replacement availability: Package		
	reliability qualification is in progress. The completion date is to be		
	advised.		
Assembly Site	The assembly sites are the same: ASE Taiwan and Amkor Korea.		
Bill of	The 63/37 Sn-Pb leaded bumps and leaded solder balls will be		
Materials	replaced with leadfree SnAg1.8 bumps and leadfree Sn3Ag0.5Cu solder		
Materials	balls.		
	Datis.		
	The leadfree solder bumps necessitated changes to other materials		
	within the BOM (Bill of Materials) to meet manufacturability and		
	package reliability requirements.		
Package Form	There will be modifications to the package form and fit for the following		
and Fit	product families: Stratix III & Arria II GX (lidless package).		
and in	Applicable Package Outline Drawings (POD) for "G" part numbers are		
	now available at:		
	https://www.intel.com/content/www/us/en/programmable/support/literature/l		
	it-index/lit-pkg.html		
Function and	The change does not impact the function and electrical specifications of		
Electrical	the affected products.		
Specification			
Specification			
Reflow and	SMT conditions are different for leadfree solder balls vs leaded solder		
Soldering	balls. Refer to Apps Notes AN-353 for SMT Board Assembly Process		
Information	Recommendations:		
	https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature		
	/an/an353.pdf		

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Recommended Action:

It is recommended for customers to switch to the fully lead-free converted products (with the "G" suffix). Please see the link provided in the "Products Affected" section listing the new OPNs of the converted parts.

Products Affected:

Part numbers with leaded solder balls belonging to the following product families				
Arria GX	Stratix II	• Stratix V E		
Arria II	Stratix II GX	Stratix V GS		
Arria V	Stratix III	• Stratix V GX		
Arria V SoC	Stratix IV			

The link below contains the list of affected OPNs with the corresponding conversion status and new OPN (where applicable).

https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature/pcn/adv2001-opn-list.xlsx

Reason for Change:

Intel received notification from the foundry supplier that eutectic leaded bumped die supply will be discontinued. There is foreseen shift in demand towards leadfree bumping with the EU Restriction of Hazardous Substances (RoHS) Directive Exemption 15 scope change in February 29, 2020 and subsequent expiry in July 21, 2021.

Contact

For more information, please contact your Sales representative or submit a Service Request at the <u>My Intel</u> support page.

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Revision History

Date	Rev	Description
01/10/2020	1.0.0	Initial Release
04/03/2020	1.1.0	 Revised affected part list
		 Converted parts with "G" suffix can be ordered now except Stratix® II, Stratix® II GX & Arria® GX
		 Samples of part Stratix® II, Stratix® II GX & Arria® GX not yet available. Sample availability date to be advised.

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