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

Table 2: Important 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 Reliability Qualification Status	Products with replacement available now: Package reliability qualification testing has been successfully completed. 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 Materials	The 63/37 Sn-Pb leaded bumps and leaded solder balls will be replaced with leadfree SnAg1.8 bumps and leadfree Sn3Ag0.5Cu solder balls. The leadfree solder bumps necessitated changes to other materials within the BOM (Bill of Materials) to meet manufacturability and package reliability requirements.
Package Form and Fit	There will be modifications to the package form and fit for the following product families: Stratix III & Arria II GX (lidless package). Applicable Package Outline Drawings (POD) for "G" part numbers are now available at: https://www.intel.com/content/www/us/en/programmable/support/literature/lit-index/lit-pkg.html
Function and Electrical Specification	The change does not impact the function and electrical specifications of the affected products.
Reflow and Soldering Information	SMT conditions are different for leadfree solder balls vs leaded solder balls. Refer to Apps Notes AN-353 for SMT Board Assembly Process Recommendations: https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature/an/an353.pdf

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 • Arria II • Arria V • Arria V SoC	• Stratix II • Stratix II GX • Stratix III • Stratix IV	• Stratix V E • Stratix V GS • Stratix V GX

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 My Intel support page.

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.