ON Semiconductor

INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #16664

Generic Copy

Issue Date: 10-Jun-2011

TITLE: Conversion to NiPdAu due to SnPb Plating EOL in ATK

PROPOSED FIRST SHIP DATE: 01-Dec-2011

AFFECTED CHANGE CATEGORY(S): Assembly – Plating Material

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or Sarah Sanico<ffxxxh@onsemi.com >

NOTIFICATION TYPE:

Initial Product/Process Change Notification (IPCN)

First change notification sent to customers. IPCNs are issued at least 120 days prior to implementation of the change. An IPCN is advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan.

The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN).

This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 90 days prior to implementation of the change.

DESCRIPTION AND PURPOSE:

The purpose of this notification is to announce that the external leadframe plating finish on identified leaded products in AMKOR Korea will convert from SnPb to NiPdAu lead finish using a pre-plated lead frame. The demand for tin-lead (SnPb) plating from customers is decreasing and has resulted in low utility and inefficiency of the SnPb plating line.

The product's external leads are currently electroplated with 63/ 37% SnPb. Assembly supplier will convert 100% of their lead frame based packages to Pb-free plating material on Dec. 31, 2011. To ensure supply continuity for customers, On Semiconductor is converting LQFP and TQFP products to the NiPdAu lead finish. In addition, the die attach and mold compound material has been changed per below Table 1.

Table 1: Bill of Material

Package	BOM	Current	Proposed
LQFP/ TQFP	Epoxy	Ablestik 84-1 LMIS-4	Ablestik 8200
	Mold Compound	EME7320CR	Nitto GE747LQ
	Lead Finish	SnPb	NiPdAu

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QUALIFICATION PLAN:

Estimated Date for Qualification Completion: 12/01/2011
Samples should be available after completion of Qualification.

Test #	Test	Reference	Test Conditions
A1	**Moisture Preconditioning (PC)**	J-STD-020 & JESD22-A113	Moisture Soak (MSL = 3) Solder Reflow (3x @ 260°C)
A0	**Delamination check (SAT)**	J-STD-020	Acoustic Microscopy
A3 (alt)	**HAST Unbiased (UHST)**	JESD22-A110	130°C/ 85%RH for 96 hrs
A4	**Preconditioning Temperature Cycling (TC)**	JESD22-A104	-55°C to 125°C for 100 cycles
A4	**Temperature Cycling (TC)**	JESD22-A104	
	Wire Bond Pull Strength (WBP)	MIL- STD883 Method 2011	
A6	**High Temperature Storage (HTS)**	JESD22-A103	150°C for 1000 hrs
	X-ray	Mil STD 883 D meth 2012 & Mil STD 883 D meth 2030.	
	Internal Visual	Mil-Std-883D method 2010.	
	External Visual	Mil-Std-883D method 2009.	
C1	**Wire Bond Shear (WBS)**	AEC-Q100-001	
C2	**Wire Bond Pull Strength (WBP)**	MIL- STD883 Method 2011	Cond. C or D. Minimum pull strength after temperature cycle = 3 grams
C3	**Solderability (SD)**	JESD22-B102	
C4	**Physical Dimensions (PD)**	JESD22-B102 JESD22-B108	

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List of affected Customer Specific Parts:

PART
06817-807-XTD
06817-808-XTD
20583-001-XTD
05354-014-XTD