ON Semiconductor

INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #16639

Generic Copy

Issue Date: 10-Jun-2011

TITLE: 2028NC Epoxy Discontinuance for PQFP-HS 208L ATP1

PROPOSED FIRST SHIP DATE: 01-Dec-2011

AFFECTED CHANGE CATEGORY(S):

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or <Alle.Ronquillo@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:

2028NC Epoxy will be discontinued in ATP1. Recommended replacement as follows:

	Existing		Recommended	
Device#	19063-003	19063-005	19063-003	19063-005
Leadframe	13 sq C7025 DR S	13 sq C7025 DR S	13 sq C7025 DR S	13 sq C7025 DR S
Epoxy	2028NC	2028NC	2025D	2025D
Wire	1.2 mil Au	1.2 mil Au	1.2 mil Au	1.2 mil Au
Mold Compound	MP8000CH4	G700M	MP8000CH4	G700M

QUALIFICATION PLAN:
Estimated Date for Qualification Completion: 31/08/2011
Samples should be available after completion of Qualification.

ON Semiconductor

INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #16639

Qual Plan:

Package Reliability Qualification Plan

ON Product Name :		Eval Plan Revision :	A (QP111402)
Customer Product Name :	**GDAS**	Date :	4/4/2011
Maskset :	**19063-003**	Prepared by :	Gelo Ramos
Package code & Type	**AQCC/128 PQFP-H**	Fab/Process	C5M
Package & Assembly House :	**ATP**	Total parts required :	890

ACCELERATED ENVIRONMENT STRESS TESTS

Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Qual Lots	Total Parts Required for Qual Lots	# of Cntrl Lots	Total Parts Required for Control Lots	Comments
A1	**Moisture Preconditioning (PC)**	J-STD-020 & JESD22-A113	Moisture Soak (MSL = 3) Solder Reflow (3x @ 260°C)	Test @ room	154	0	3	462	1	154	Surface Mount Dervices only. Preconditioning before tests A0 (SAT), A2 (HAST/THB), A3 (AC/UHST), A4 (TC), A5 (PTC). Test conditions are package dependent.
A0	**Delamination check (SAT)**	J-STD-020	Acoustic Microscopy	N.A.	154	0	3	462	1	154	Samples preconditioned per test A1 (PC)
A3 (alt)	**HAST Unbiased (UHST)**	JESD22-A110	130°C/ 85%RH for 96 hrs	Test @ room	77	0	3	231	1	77	Samples preconditioned per test A1 (PC) and Preconditioning TC. Stress upto 192 hrs for internal data.
A4	**Preconditioning Temperature Cycling (TC)**	JESD22-A104	-55°C to 125°C for 100 cycles	Test @ hot	77	0	3	231	1	77	Samples preconditioned per test A1 (PC). Test conditions are dependent on environment.
A4	**Temperature Cycling (TC)**	JESD22-A104	-65°C to 150°C for 500 cycles	Test @ hot	77	0	3	231	1	77	Samples preconditioned per test A1 (PC). Test conditions are dependent on environment.
	Wire Bond Pull Strength (WBP)	MIL- STD883 Method 2011	Cond. C or D. Minimum pull strength after temperature cycle = 3 grams	N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66 or 0 Fails after test A4 (TC)	3	15	1	5	DPA after TC.
A6	**High Temperature Storage (HTS)**	JESD22-A103	150°C for 1000 hrs	Test @ room Test @ hot	77	0	1	77	1	77	Samples preconditioned per test B3 (EDR) (if applicable). Test conditions are dependent on environment.

PACKAGE ASSEMBLY INTEGRITY TESTS

Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Qual Lots	Total Parts Required for Qual Lots	# of Cntrl Lots	Total Parts Required for Control Lots	Comments
	X-ray	Mil STD 883 D meth 2012 & Mil STD 883 D meth 2030.		N.A.	15		3	45	1	15	
	Internal Visual	Mil-Std-883D method 2010.		N.A.	10		1	10	1	5	
	External Visual	Mil-Std-883D method 2009.		N.A.	ALL		ALL	ALL	ALL	ALL	**Performed on all Parts**
C1	**Wire Bond Shear (WBS)**	AEC-Q100-001		N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66	3	15	1	5	
C2	**Wire Bond Pull Strength (WBP)**	MIL- STD883 Method 2011	Cond. C or D. Minimum pull strength after temperature cycle = 3 grams	N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66 or 0 Fails after test A4 (TC)	3	15	1	5	
C3	**Solderability (SD)**	JESD22-B102		N.A.	15	> 95% lead coverage	3	45	1	15	If burn-in screening is normally performed on the device before shipment, samples for SD must first undergo burn-in. Perform 8 hour steam aging prior to testing. (1 hou
C4	**Physical Dimensions (PD)**	JESD22-B102 JESD22-B108		N.A.	10	Cpk > 1.33 Ppk > 1.66	3	30	1	10	See applicable JEDEC standard outline and individual device spec for significant dimensions and tolerances.

ON Semiconductor

INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #16639

Package Reliability Qualification Plan

ON Product Name :		Eval Plan Revision :	A (QP111402)
Customer Product Name :	**GDAS**	Date :	4/4/2011
Maskset :	**19063-005**	Prepared by :	Gelo Ramos
Package code & Type	**AQCG/128 PQFP-H**	Fab/Process	C5M
Package & Assembly House :	**ATP**	Total parts required :	890

ACCELERATED ENVIRONMENT STRESS TESTS

Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Qual Lots	Total Parts Required for Qual Lots	# of Cntrl Lots	Total Parts Required for Control Lots	Comments
A1	**Moisture Preconditioning (PC)**	J-STD-020 & JESD22-A113	Moisture Soak (MSL = 3) Solder Reflow (3x @ 260°C)	Test @ room	154	0	3	462	1	154	Surface Mount Devices only. Preconditioning before tests A0 (SAT), A2 (HAST/THB), A3 (AC/UHST), A4 (TC), A5 (PTC). Test conditions are package dependent.
A0	**Delamination check (SAT)**	J-STD-020	Acoustic Microscopy	N.A.	154	0	3	462	1	154	Samples preconditioned per test A1 (PC)
A3 (alt)	**HAST Unbiased (UHST)**	JESD22-A110	130°C/ 85%RH for 96 hrs	Test @ room	77	0	3	231	1	77	Samples preconditioned per test A1 (PC) and Preconditioning TC. Stress upto 192 hrs for internal data.
A4	**Preconditioning Temperature Cycling (TC)**	JESD22-A104	-55°C to 125°C for 100 cycles	Test @ hot	77	0	3	231	1	77	Samples preconditioned per test A1 (PC). Test conditions are dependent on environment.
A4	**Temperature Cycling (TC)**	JESD22-A104	-65°C to 150°C for 500 cycles	Test @ hot	77	0	3	231	1	77	Samples preconditioned per test A1 (PC). Test conditions are dependent on environment.
	Wire Bond Pull Strength (WBP)	MIL- STD883 Method 2011	Cond. C or D. Minimum pull strength after temperature cycle = 3 grams	N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66 or 0 Fails after test A4 (TC)	3	15	1	5	DPA after TC.
A6	**High Temperature Storage (HTS)**	JESD22-A103	150°C for 1000 hrs	Test @ room Test @ hot	77	0	1	77	1	77	Samples preconditioned per test B3 (EDR) (if applicable). Test conditions are dependent on environment.

PACKAGE ASSEMBLY INTEGRITY TESTS

Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Qual Lots	Total Parts Required for Qual Lots	# of Cntrl Lots	Total Parts Required for Control Lots	Comments
	X-ray	Mil STD 883 D meth 2012 & Mil STD 883 D meth 2030.		N.A.	15		3	45	1	15	
	Internal Visual	Mil-Std-883D method 2010.		N.A.	10		1	10	1	5	
	External Visual	Mil-Std-883D method 2009.		N.A.	ALL		ALL	ALL	ALL	ALL	**Performed on all Parts**
C1	**Wire Bond Shear (WBS)**	AEC-Q100-001		N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66	3	15	1	5	
C2	**Wire Bond Pull Strength (WBP)**	MIL- STD883 Method 2011	Cond. C or D. Minimum pull strength after temperature cycle = 3 grams	N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66 or 0 Fails after test A4 (TC)	3	15	1	5	
C3	**Solderability (SD)**	JESD22-B102		N.A.	15	> 95% lead coverage	3	45	1	15	If burn-in screening is normally performed on the device before shipment, samples for SD must first undergo burn-in. Perform 8 hour steam aging prior to testing. (1 hou
C4	**Physical Dimensions (PD)**	JESD22-B102 JESD22-B108		N.A.	10	Cpk > 1.33 Ppk > 1.66	3	30	1	10	See applicable JEDEC standard outline and individual device spec for significant dimensions and tolerances.

ON Semiconductor

INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #16639

List of affected Customer Specific Parts:

0BCMA-002-XTP
0BCMA-003-XTP
0BCMA-979-EPT
0BCMA-980-EPT
0BCMA-982-EPT
0BCMA-983-EPT
19063-003-XTD
19063-005-XTD
20780-001-XTD
20780-901-EPT