ON Semiconductor®

Final Product/Process Change Notification

Document # : FPCN22191XN
Issue Date: 19 September 2018

Title of Change:	SOIC-8 Insourcing to ON Semiconductor Philippines (OSPI) Factory from GEM (China).
Proposed first ship date:	28 December 2018
Contact information:	Contact your local ON Semiconductor Sales Office or <Rodrigo.Milana.Jr@onsemi.com>
Samples:	Contact your local ON Semiconductor Sales Office or <PCN.samples@onsemi.com> Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change.
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or <Lalan.Ortega@onsemi.com>.
Type of notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact <PCN.Support@onsemi.com>
Change Part Identification:	Product marked with date code 1851 or later may be built from current factory or from OSPI Factory. The trace code marking on Line 2 is of the form ALYW where A = Assembly Location, L = Wafer Lot ID and YW is a 2-digit date code. Product marked with "P" as the assembly location will be from OSPI. Additionally on the label of the box and reel, the ASSY LOC: PO will also indicate product assembled in OSPI. Please see sample label on Page 2 at the following URL http://www.onsemi.com/pub/Collateral/LABELRM-D.PDF to see the location of the ASSY LOC.
Change Category:	☐ Wafer Fab Change ☑ Assembly Change ☑ Test Change ☐ Other ________

Change Sub-Category(s):

- ☑ Manufacturing Site Addition
- ☐ Manufacturing Site Transfer
- ☐ Manufacturing Process Change
- ☑ Material Change
- ☐ Product specific change
- ☐ Datasheet/Product Doc change
- ☑ Shipping/Packaging/Marking
- ☐ Other: ____________________

Sites Affected:	ON Semiconductor Sites: ON Carmona, Philippines	External Foundry/Subcon Sites: GEM Electronics, China

Description and Purpose:

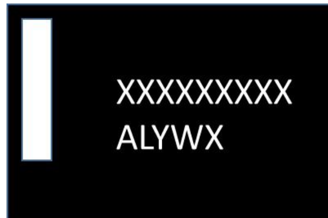
This Final Notification announces to customers ON Semiconductor's plans to expand Assembly and Test operations of former Fairchild SO8 packaged products to an existing internal manufacturing site in OSPI, Philippines. This is a capacity expansion, and at the end of the FPCN approval cycle, these products may be dual sourced from either GEM, China or from OSPI, Philippines.

MOSFETs will be qualified and released with Copper wire as part of this expansion in OSPI, Philippines (as per table in List of affected parts). OSPI is certified with ISO9001:2015 and IATF 16949 and is currently running production for SO8 package and Copper Wire. These products are currently using Copper wire at GEM. These products will continue being Pb-free, Halide free and RoHS compliant. Qualification tests are designed to show that the reliability of the transferred devices will continue to meet or exceed ON Semiconductor standards.

BOM changes associated with this FPCN are shown here:

	Before Change Description	After Change Description
Die Attach	Kyocera CT285	Kyocera CT285 (GEM) and Henkel ABP8062T (OSPI)
Mold Compound	Sumitomo G600FL	Sumitomo G600FL (GEM) and Sumitomo G600 (OSPI)
Assembly/Test Site	GEM	GEM and OSPI

Additionally, this FPCN serves to notify customers of a change in the marking for all products listed for BOTH sites, GEM and OSPI. The new marking will be of the form:



Line 1 is the Product Identification (see table for new Product IDs)
Line 2 is the Trace code with the following nomenclature: A = Assy Location (P for OSPI and M for GEM), L = Wafer Lot ID, YW = 2 digit date code. The X at the end of the line is a wrap character if additional identification is needed from Line 1.

	From	To
Product marking change	Line1: $Y&Z&2&K (Trace Code) Line2: FDFS Line3: 6N548	Line1: FDFS6N548 Line2: ALYW

Reliability Data Summary:

DISCRETE PCN TEMPLATE FORMAT

QV DEVICE NAME: FDFS6N548
RMS: S40043, O44710
PACKAGE: SOIC 8

Test	Specification	Condition	Interval	Results
HTSL	JESD22-A103	Ta = 150°C	2016 hrs	0/80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2.0 min	15000 cyc	0/80
TC	JESD22-A104	Ta= -55°C to +150°C	2000 cyc	0/80
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	192 hrs	0/80
PC	J-STD-020 JESD-A113	MSL 1 @260°C	-	0/320
SAT	JEDEC STD 035	Pre and Post MSL 1	-	0/25
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/15
PD	JESD22-B100	Per POD, case 751EB	-	0/30
CDPA	MILSTD750 Method 2037	Wire Pull after TC1000 cycles	-	0/5
CDPA	MILSTD750 Method 2037	Wire Pull after HTSL 1008hrs	-	0/5
CDPA	AEC -006	Custom Destructive Physical Analysis after TC1000 cycles	-	0/2
ED	Tri Temperature Characterization, Per 48A	Temp at 25°C, -55°C, 150°C with Thermal Resistance (Rth)	-	Passed

QV DEVICE NAME: FDS8978
RMS: O40037, O44191
PACKAGE: SOIC 8

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 150°C, 80% max rated V	1008 hrs	0/80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0/80
HTSL	JESD22-A103	Ta = 150°C	2016 hrs	0/80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2.0 min	30000 cyc	0/80
TC	JESD22-A104	Ta= -55°C to +150°C	2000 cyc	0/80
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs	0/80
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	192 hrs	0/80
PC	J-STD-020 JESD-A113	MSL 1 @260°C	-	0/320
SAT	JEDEC STD 035	Pre and Post MSL 1	-	0/25
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/15
PD	JESD22-B100	Per POD, case 751EB	-	0/30
CDPA	MILSTD750 Method 2037	Wire Pull after TC1000 cycles	-	0/5
CDPA	MILSTD750 Method 2037	Wire Pull after HTSL 1008hrs	-	0/5
DPA	AEC Q101-004 Section 4	Destructive Physical Analysis after TC1000 cycles	-	0/2
ED	Tri Temperature Characterization, Per 48A	Temp at 25°C, -55°C, 150°C with Thermal Resistance (Rth)	-	Passed

QV DEVICE NAME: FDS6681Z
RMS: S42844, O44558, S40038
PACKAGE: SOIC 8

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 150°C, 80% max rated V	1008 hrs	0/84
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0/84
HTSL	JESD22-A103	Ta = 150°C	2016 hrs	0/84
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2.0 min	30000 cyc	0/84
TC	JESD22-A104	Ta= -55°C to +150°C	2000 cyc	0/84
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs	0/83
uHAST	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/84
PC	J-STD-020 JESD-A113	MSL 1 @260°C	-	0/335
SAT	JEDEC STD 035	Pre and Post MSL 1	-	0/22
RSH	JESD22- B106	Ta = 265C, 10 sec	-	0/30
SD	JSTD002	Ta = 245C, 10 sec	-	0/15
PD	JESD22-B100	Per POD, case 751EB	-	0/30
CDPA	MILSTD750 Method 2037	Wire Pull after TC1000 cycles	-	0/5
CDPA	MILSTD750 Method 2037	Wire Pull after HTSL 1008hrs	-	0/5
DPA	AEC Q101-004 Section 4	Destructive Physical Analysis after TC1000 cycles	-	0/3
ED	Tri Temperature Characterization, Per 48A	Temp at 25°C, -55°C, 150°C with Thermal Resistance (Rth)	-	Passed

Electrical Characteristic Summary:

Electrical characteristics are not impacted. Detail of Electrical characterization result is available upon request.

List of Affected Parts:

Part Number	Qualification Vehicle
FDFS6N548	FDFS6N548

Appendix A: Changed Products

Product	Customer Part Number	Qualification Vehicle
FDFS6N548		FDFS6N548