ON Semiconductor®

Final Product/Process Change Notification

Document # : FPCN22191XH
Issue Date: 18 June 2018

Title of Change:	SOIC-8 Insourcing to ON Semiconductor Philippines (OSPI) Factory from GEM (China)
Proposed first ship date:	25 September 2018
Contact information:	Contact your local ON Semiconductor Sales Office or <Rodrigo.Milana.Jr@onsemi.com>
Samples:	Contact your local ON Semiconductor Sales Office of <PCN.Samples@onsemi.com>
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 1822 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 Change/Addition	☒ Material Change	☐ Datasheet/Product Doc change
☐ Manufacturing Process Change	☐ Product specific 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:

Material to be changed	**Before Change Description**	**After Change Description**
Mold Compound	Sumitomo G600FL	Sumitomo G600F
Die Attach	Kyocera CT285 / Henkel ABP8062T	Henkel ABP8062T

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 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.

OPN	Line 1 Marking
FDS4410A	FDS4410A
FDS6612A	FDS6612A
FDS6670A	FDS6670A
FDS6670AS	FDS6670AS
FDS6676AS	FDS6676AS
FDS6676AS-G	FDS6676AS
FDS6680A	FDS6680A
FDS6680AS	FDS6680AS
FDS6682	FDS6682
FDS6690A	FDS6690A
FDS6690A-GNB23008	FDS6690AG
FDS6690A-NBNP006	FDS6690AN
FDS6690AS	FDS6690AS
FDS6690AS-G	FDS6690AS
FDS6690AS-NBNU001	FDS6690AS
FDS6692A	FDS6692A
FDS6699S	FDS6699S
FDS6900AS	FDS6900AS
FDS6900AS-G	FDS6900AS
FDS6910	FDS6910
FDS6911	FDS6911
FDS6912A	FDS6912A
FDS6930B	FDS6930B
FDS6982AS	FDS6982AS
FDS6984AS	FDS6984AS
FDS6990A	FDS6990A
FDS6990AS	FDS6990AS

Reliability Data Summary:

QV DEVICE NAME: FDS6676AS
RMS: P42847, O44753
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
H3TRB	JESD22 A101	85°C, 85% RH, bias	1008 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: 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:

The temperature characterization meet datasheet specification. Electrical characteristics are not impacted. Detail of Electrical characterization result is available upon request.

List of Affected Standard Parts

Product ID	Qualification Vehicle
FDS4410A	FDS6676AS
FDS6612A	
FDS6670A	
FDS6670AS	
FDS6676AS	
FDS6680A	
FDS6680AS	
FDS6682	
FDS6690A	
FDS6690A-NBNP006	
FDS6690AS	
FDS6692A	
FDS6699S	
FDS6900AS	
FDS6910	
FDS6911	
FDS6912A	
FDS6930B	
FDS6982AS	
FDS6984AS	
FDS6990A	
FDS6990AS	

NOTE:
Please be informed that there are Customer Specific parts impacted by this notice, thus MPN & CPN info will not be reflected in the parts list of this Generic document. Instead please click the link to the addendum copy provided in the email notification to see full list of affected products specific to your company.