



Title of Change:	Qualify alternate assembly & test site SP Semiconductor for TO3PF3 UGBT package																																				
Proposed first ship date:	Oct. 22, 2017																																				
Contact information:	Contact your local ON Semiconductor Sales Office																																				
Samples:	Contact your local ON Semiconductor Sales Office																																				
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office																																				
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:	1743																																				
Change category:	☐ Wafer Fab Change ☒ Assembly Change ☐ Test Change ☐ Other																																				
Change Sub-Category(s): ☒ Manufacturing Site Change/Addition ☐ Manufacturing Process Change ☐ Material Change ☐ Product specific change ☐ Datasheet/Product Doc change ☐ Shipping/Packaging/Marking ☐ Other																																					
Sites Affected: ☐ All site(s) ☐ Not applicable ☐ ON Semiconductor site(s) ☒ External Foundry/Subcon site(s) Select site: SPS;FSSZ Select site: SPS;FSSZ																																					
Description and Purpose: <u>Description of Change (From):</u> TO3PF3 UGBT (FGAF40N60SMD, FGAF20N60SMD) assembly and test single source in Suzhou in-house <table border="1" style="margin: 10px auto;"> <tr> <td>Current</td> <td>FSSZ, China</td> </tr> <tr> <td>Package</td> <td>TO3PF3</td> </tr> <tr> <td>Lead Frame</td> <td>TO-3PF-3L Bare</td> </tr> <tr> <td>Adhesive</td> <td>93.5Pb5Sn1.5Ag</td> </tr> <tr> <td>Wire</td> <td>Al 99.99%</td> </tr> <tr> <td>EMC</td> <td>KTMC-3090FP</td> </tr> <tr> <td>Lead Finish</td> <td>Pure Tin</td> </tr> </table> <u>Description of Change (To):</u> SP Semi is being added as secondary assembly & test site to improve capacity and flexibility. <table border="1" style="margin: 10px auto;"> <tr> <td>Proposed</td> <td>FSSZ, China</td> <td>SPSemi, Korea</td> </tr> <tr> <td>Package</td> <td>TO3PF3</td> <td>TO3PF3</td> </tr> <tr> <td>Lead Frame</td> <td>TO-3PF-3L Bare</td> <td>TO-3PF-3L Pin Post Ni</td> </tr> <tr> <td>Adhesive</td> <td>93.5Pb5Sn1.5Ag</td> <td>93.5Pb5Sn1.5Ag</td> </tr> <tr> <td>Wire</td> <td>Al 99.99%</td> <td>Al 99.99%</td> </tr> <tr> <td>EMC</td> <td>KTMC-3090FP</td> <td>ST-7100HF</td> </tr> <tr> <td>Lead Finish</td> <td>Pure Tin</td> <td>Pure Tin</td> </tr> </table> <u>Reason of Change:</u> To improve capacity and flexibility.			Current	FSSZ, China	Package	TO3PF3	Lead Frame	TO-3PF-3L Bare	Adhesive	93.5Pb5Sn1.5Ag	Wire	Al 99.99%	EMC	KTMC-3090FP	Lead Finish	Pure Tin	Proposed	FSSZ, China	SPSemi, Korea	Package	TO3PF3	TO3PF3	Lead Frame	TO-3PF-3L Bare	TO-3PF-3L Pin Post Ni	Adhesive	93.5Pb5Sn1.5Ag	93.5Pb5Sn1.5Ag	Wire	Al 99.99%	Al 99.99%	EMC	KTMC-3090FP	ST-7100HF	Lead Finish	Pure Tin	Pure Tin
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Reliability Data Summary:																																					



Qualification Plan	Device	Package	Process	No. of Lots
Q20160832	FGAF40N60SMD	TO3PF	IGBT	3 (77pcs/Lot)

Test Description:	Condition:	Standard :	Duration:	Results:
Power cycle	Delta 100CC, 2 Min cycle	MIL-STD-750-1036	6000cycles	0/231
Temperature Humidity Bias Test	85C, 85%RH, 100V	JESD22-A101	1000 hrs	0/231
High Temperature Storage Life	175C	JESD22-A103	1000 hrs	0/231
High Temperature Reverse Bias	175C, 80% BV	JESD22-A108	1000 hrs	0/231
High Temperature Gate Bias	175C, 20V	JESD22-A108	1000 hrs	0/231
Temperature Cycle	-65C, 150C	JESD22-A104	500 cycles	0/231

Electrical Characteristic Summary:

Electrical characteristics are not impacted.

Qualification Plan:

F20160832-2: FGAF40N60SMD, Ass'y Site Transfer(From Suzhou to SP Semi) Qualification loaded on TO3PF 3Lots had passed with required reliability test without any failures.



List of Affected Part(s):

Part Number	Qualification Vehicle
FGAF20N60SMD	FGAF40N60SMD
FGAF40N60SMD	FGAF40N60SMD