



<b>Title of Change:</b>	Qualification of ON Semiconductor's Trench IGBT fab in Niigata (Japan) for 600V/650V and ON Semiconductor Vietnam (OSV) Assembly-Test operations of TO247 package IGBTs for Co-pack dual die.
<b>Proposed first ship date:</b>	4 March 2016
<b>Contact information:</b>	Contact your local ON Semiconductor Sales Office or <Gk.sua@onsemi.com>; <way-shan.yong@onsemi.com>
<b>Samples:</b>	Contact your local ON Semiconductor Sales Office
<b>Additional Reliability Data:</b>	Contact your local ON Semiconductor Sales Office or <cheanching.sim@onsemi.com>; <xiaohu.zhang@onsemi.com >
<b>Type of notification:</b>	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>.
<b>Change Part Identification:</b>	VN site code on the marking, effective NH08G product may be sourced from either fab.
<b>Change category:</b>	<input checked="" type="checkbox"/> Wafer Fab Change <input checked="" type="checkbox"/> Assembly Change <input checked="" type="checkbox"/> Test Change <input type="checkbox"/> Other _____
<b>Change Sub-Category(s):</b>	<input checked="" type="checkbox"/> Manufacturing Site Change/Addition <input type="checkbox"/> Material Change <input type="checkbox"/> Datasheet/Product Doc change <input type="checkbox"/> Manufacturing Process Change <input type="checkbox"/> Product specific change <input type="checkbox"/> Shipping/Packaging/Marking <input type="checkbox"/> Other: _____
<b>Sites Affected:</b>	<input type="checkbox"/> All site(s) <input type="checkbox"/> not applicable <input checked="" type="checkbox"/> ON Semiconductor site(s) : ON Dong Nai Province, Vietnam ON Niigata, Japan <input type="checkbox"/> External Foundry/Subcon site(s)
<b>Description and Purpose:</b>	<p>This FPCN announces the planned capacity expansion of ON Semiconductor's TIGBT fab and assembly/test operations of TO247 package IGBTs Co-pack dual die.</p> <p>Wafer fabrication of the 600V/650V devices are sourced from ON Semiconductor at Czech Republic (CZ4). ON Semiconductor Niigata, Japan is added as additional fabrication site. Upon the expiration of this FPCN, 600V and 650V TIGBT devices will be produced in either of the two locations, ON Semiconductor at Czech Republic (CZ4) or On Semiconductor Niigata (JPF) effective February 2016. These products have been qualified to industrial requirements.</p> <p>Currently, assembly and test of these devices is performed at Nantong Fujitsu Microelectronics (NMFE), China. ON Semiconductor Vietnam (OSV) is being added as an additional assembly and test site. Upon the expiration of this FPCN, TO247 packaged IGBTs Co-pack dual die for the affected devices will be produced in either of the two locations, Nantong Fujitsu Microelectronics (NMFE) or On Semiconductor Vietnam (OSV). These products have been qualified to industrial requirements. These products will be Pb-free, Halide free and RoHS compliant.</p>



## Reliability Data Summary for Assembly Expansion:

QV DEVICE NAME: NGTB75N65FL2WG  
PACKAGE: TO247

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 145°C, 80% max rated V	1008 hrs	0/240
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0/240
HTSL	JESD22-A103	Ta = 175°C	1008 hrs	0/240
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta = +25°C, delta Tj=100°C On/off = 5 min	6000 cyc	0/240
TC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/240
H3TRB	JESD22-A101	85°C, 85% RH, 18.8psig, bias	1008 hrs	0/240
uHAST	JESD22-A102	121°C, 100% RH, 15psig, unbiased	96 hrs	0/240
RSH	JESD22- B106	Ta = 265°C, 10 sec		0/90
SD	JSTD002	Ta = 245°C, 10 sec		0/45

QV DEVICE NAME: NGTB50N120FL2WG  
PACKAGE: TO247

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 145°C, 80% max rated V	1008 hrs	0/240
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0/240
HTSL	JESD22-A103	Ta = 175°C	1008 hrs	0/240
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta = +25°C, delta Tj=100°C On/off = 5 min	6000 cyc	0/240
TC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/240
H3TRB	JESD22-A101	85°C, 85% RH, 18.8psig, bias	1008 hrs	0/240
uHAST	JESD22-A102	121°C, 100% RH, 15psig, unbiased	96 hrs	0/240
RSH	JESD22- B106	Ta = 265°C, 10 sec		0/90
SD	JSTD002	Ta = 245°C, 10 sec		0/45


**Niigata Fab 600V/650V Trench IGBT Reliability Data Summary:**
**QV DEVICE NAME: NGTB75N60FL2WG**
**PACKAGE: TO247**

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 145°C, 80% max rated V	1008 hrs	0/240
HTGB	JESD22-A108	Ta = 175°C, 100% max rated Vgss	1008 hrs	0/240
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0/240
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta = +25°C, delta Tj=100°C On/off = 5 min	6000 cyc	0/240
TC	JESD22-A104	Ta = -55°C to +150°C	1000 cyc	0/240
H3TRB	JESD22-A101	85°C, 85% RH, 18.8psig, bias	1008 hrs	0/240
uHAST	JESD22-A102	121°C, 100% RH, 15psig, unbiased	96 hrs	0/240
RSH	JESD22- B106	Ta = 265°C, 10 sec		0/90
SD	JSTD002	Ta = 245°C, 10 sec		0/45

**Electrical Characteristic Summary:**

Electrical characteristics are not impacted.

**List of Affected Standard Parts: (Trench IGBT Copack 1200V)**

Part Number	Qualification Vehicle
NGTB15N120FL2WG	NGTB50N120FL2WG
NGTB25N120FL2WG	NGTB50N120FL2WG
NGTB25N120SWG	NGTB50N120FL2WG
NGTB30N120FL2WG	NGTB50N120FL2WG
NGTB30N120L2WG	NGTB50N120FL2WG
NGTB40N120FL2WG	NGTB50N120FL2WG
NGTB40N120SWG	NGTB50N120FL2WG
NGTB50N120FL2WG	NGTB50N120FL2WG



## List of Affected Standard Parts: (Trench IGBT Copack 600V/650V)

Part Number	Qualification Vehicle
NGTB30N60IHLWG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB30N65IHL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB35N60FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB35N65FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB40N60IHLWG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB40N60L2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB40N65IHL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB45N60S1WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB45N60S2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB45N60SWG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB50N60FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB50N60L2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB50N60S1WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB50N60SWG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB50N65FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB75N60FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB75N60SWG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB75N65FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB40N60FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG
NGTB40N65FL2WG	NGTB75N65FL2WG, NGTB75N60FL2WG