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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 20461**Generic Copy

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**Issue Date:** 28-Apr-2014**TITLE:** Qualification of ON Semiconductor Vietnam (OSV) for the Assembly and Test of Trench IGBT and a transition to a new case outline of Rectifiers devices for package TO247.**PROPOSED FIRST SHIP DATE:** 28-Jul-2014**AFFECTED CHANGE CATEGORY(S):** ON Semiconductor Assembly & Test**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**Contact your local ON Semiconductor Sales Office or following contact Product Engineer:  
Raja Roziah Raja Rahmat <[Raja.Roziah.Rahmat@onsemi.com](mailto:Raja.Roziah.Rahmat@onsemi.com)>**SAMPLES:** Contact your local ON Semiconductor Sales Office**ADDITIONAL RELIABILITY DATA:** AvailableContact your local ON Semiconductor Sales Office or Reliability Engineer Chean Ching Sim  
<[cheanching.sim@onsemi.com](mailto:cheanching.sim@onsemi.com)>**NOTIFICATION TYPE:**

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <[quality@onsemi.com](mailto:quality@onsemi.com)>.**DESCRIPTION AND PURPOSE:**

This FPCN announces the planned capacity expansion of ON Semiconductor's assembly and test operations of TO247 packaged rectifiers and trench IGBTs. 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.

Legacy rectifier products will transition to a new case outline as a part of this capacity expansion. Case outline 340L-02 will transition to 340AL. This does not impact the IGBT devices listed in this FPCN.

Upon the expiration of this FPCN, TO247 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.



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### RELIABILITY DATA SUMMARY:

#### MBR7030WTG

<b>Test:</b>	<b>Conditions:</b>	<b>Interval:</b>	<b>Results</b>
Autoclave	Ta =121°C RH=100% 15 psig	96 hrs	0/80
TC	Ta = -65°C to 150°C	1000 cycles	0/80
H3TRB	Ta = 85°C RH=85%	1008 hrs	0/80
	Bias = 80% rated V or 100V Max		
IOL	Ta = 25°C, Delta TJ = 100°C, Ton/off = 5 min.	6000 cycles	0/80
HTRB	Ta = 90°C 80% Rated Voltage	1008 hrs	0/80
HTSL	Ta = 150°C	1008 hrs	0/80
RSH	Ta = 260°C, 10 sec dwell		0/30
Solderability	Steam Aging = 8hrs	8 hrs	0/15

#### MUR3060WTG

<b>Test:</b>	<b>Conditions:</b>	<b>Interval:</b>	<b>Results</b>
Autoclave	Ta =121°C RH=100% 15 psig	96 hrs	0/80
TC	Ta = -65°C to 150°C	1000 cycles	0/80
H3TRB	Ta = 85°C RH=85%	1008 hrs	0/80
	Bias = 80% rated V or 100V Max		
IOL	Ta = 25°C, Delta TJ = 100°C, Ton/off = 5 min.	6000 cycles	0/80
HTRB	Ta = 150°C 80% Rated Voltage	1008 hrs	0/80
HTSL	Ta = 150°C	1008 hrs	0/80
RSH	Ta = 260°C, 10 sec dwell		0/30
Solderability	Steam Aging = 8hrs	8 hrs	0/15

#### NGTB40N135IHRWG

<b>Test:</b>	<b>Conditions:</b>	<b>Interval:</b>	<b>Results</b>
Autoclave	Ta =121°C RH=100% 15 psig	96 hrs	0/80
TC	Ta = -65°C to 150°C	1000 cycles	0/80
H3TRB	Ta = 85°C RH=85%	1008 hrs	0/80
	Bias = 80% rated V or 100V Max		
IOL	Ta = 25°C, Delta TJ = 100°C, Ton/off = 5 min.	6000 cycles	0/80
HTRB	Ta = 145°C 80% Rated Voltage	1008 hrs	0/80
HTGB	Ta = 150°C 100% Rated Voltage	1008 hrs	0/80
HTSL	Ta = 150°C	1008 hrs	0/80
RSH	Ta = 260°C, 10 sec dwell		0/30
Solderability	Steam Aging = 8hrs	8 hrs	0/15

### ELECTRICAL CHARACTERISTIC SUMMARY:

There are no changes in electrical characteristics; product performance meets data sheet specifications. Characterization data is available upon request.



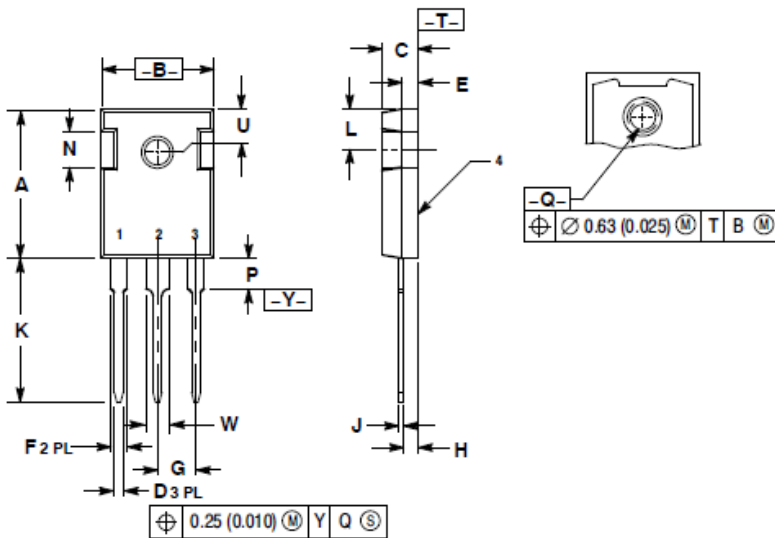
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**CHANGED PART IDENTIFICATION:**

Product from On Semiconductor Vietnam will be marked with site code VN prior to date code.

**Comparison between case outline**

TO-247  
CASE 340L-02

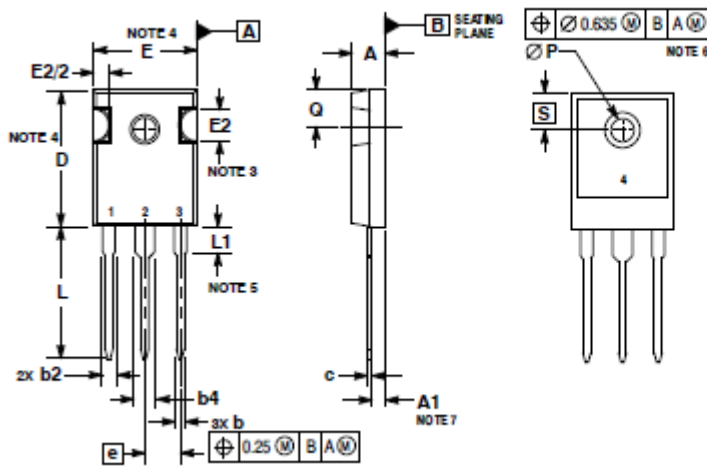


NOTES:  
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	20.32	21.08	0.800	0.830
B	15.75	16.26	0.620	0.640
C	4.70	5.30	0.185	0.209
D	1.00	1.40	0.040	0.055
E	1.90	2.60	0.075	0.102
F	1.65	2.13	0.065	0.084
G	5.45 BSC		0.215 BSC	
H	1.50	2.49	0.059	0.098
J	0.40	0.80	0.016	0.031
K	19.81	20.83	0.780	0.820
L	5.40	6.20	0.212	0.244
N	4.32	5.49	0.170	0.216
P	---	4.50	---	0.177
Q	3.55	3.65	0.140	0.144
U	6.15 BSC		0.242 BSC	
W	2.87	3.12	0.113	0.123

STYLE2:  
PIN1: ANODE  
2: CATHODE (S)  
3: ANODE 2  
4: CATHODES (S)

TO-247  
CASE 340AL



NOTES:  
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.  
2. CONTROLLING DIMENSION: MILLIMETERS.  
3. SLOT REQUIRED, NOTCH MAY BE ROUNDED.  
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.13 PER SIDE. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.  
5. LEAD FINISH IS UNCONTROLLED IN THE REGION DERIVED BY L1.  
6. CP SHALL HAVE A MAXIMUM DRAFT ANGLE OF 1.5° TO THE TOP OF THE PART WITH A MAXIMUM DIAMETER OF 3.91.  
7. DIMENSION A1 TO BE MEASURED IN THE REGION DERIVED BY L1.

DIM	MILLIMETERS	
	MIN	MAX
A	4.70	5.30
A1	2.20	2.60
b	1.00	1.40
b2	1.65	2.35
b4	2.60	3.40
c	0.40	0.80
D	20.20	21.40
E	15.50	16.25
E2	4.32	5.49
e	5.45 BSC	
L	19.80	20.80
L1	3.50	4.50
P	3.55	3.65
Q	5.40	6.20
S	6.15 BSC	



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**List of affected General Parts: Rectifier**

MBR3045WTG  
MBR4015LWTG  
MBR4045WTG  
MBR6045WTG  
MBR60L45WTG  
MBR7030WTG  
MUR3020WTG  
MUR3040WTG  
MUR3060WTG  
MBR40H100WTG

**List of affected General Parts: Trench IGBT**

NGTB15N120IHRWG  
NGTB15N135IHRWG  
NGTB20N120IHRWG  
NGTB20N135IHRWG  
NGTB30N120IHRWG  
NGTB30N135IHRWG  
NGTB40N120IHRWG  
NGTB40N135IHRWG