ON Semiconductor

Final Product/Process Change Notification

Document # : FPCN20656XB
Issue Date: 3 March 2016

Title of Change:	Transfer of Assembly and Test operations of Planar Schottky Rectifier products of TO220FP package to On Semiconductor Vietnam (OSV) with case outline change.
Proposed first ship date:	10 June 2016
Contact information:	Contact your local ON Semiconductor Sales Office or <Gk.Sua@onsemi.com>
Samples:	Contact your local ON Semiconductor Sales Office or <Phuong.Hoang@onsemi.com>
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or <cheanching.sim@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:	Products from ON Semiconductor Vietnam (OSV) will be marked with site code "VN" prior to date code.
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) :
ON Dong Nai Province, Vietnam
☒ External Foundry/Subcon site(s)
SP Semiconductor & Communication

Description and Purpose:

This FPCN announces the planned transfer of ON Semiconductor's assembly and test operations of TO-220FP packaged Planar Schottky Rectifier devices.

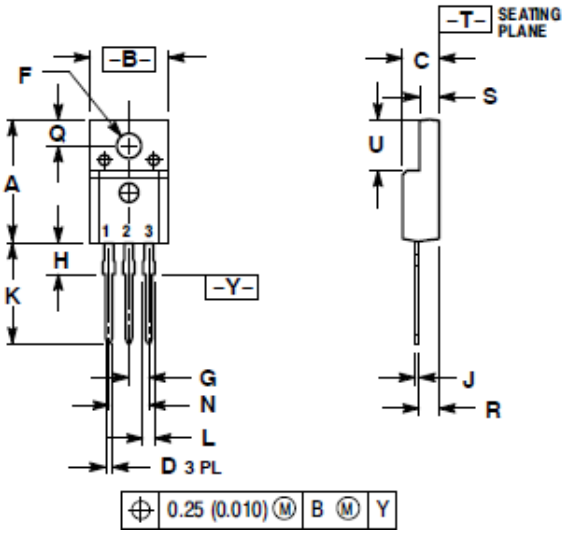
The Planar Schottky products are currently built at SP Semiconductor & Communication Co., Ltd (SP Semi). Upon the expiration of this FPCN, ON Semiconductor Vietnam will be the only assembly and test location for Planar Schottky devices in TO220FP under the same part numbers and with a new Bill of Materials.

The Planar Schottky products have been qualified to Consumer requirements. These products will continue to be Pb-free, and RoHS compliant. All products sourced from OSV will also be Halide free.

OSV products will be assembled using an improved design requiring a new case outline 221AH in comparison with case outline 221D-03 of SP Semi shown on the next page.

Comparison between case outline

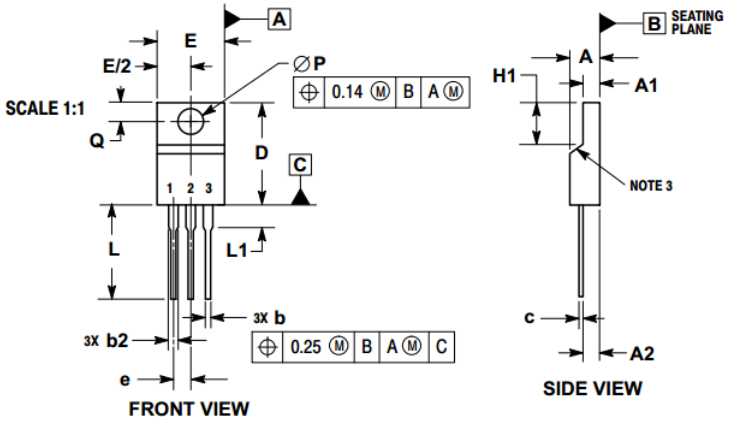
TO−220 FULLPAK
CASE 221D−03 (SP Semi)



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH
3. 221D−01 THRU 221D−02 OBSOLETE, NEW STANDARD 221D−03.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.617	0.635	15.67	16.12
B	0.392	0.419	9.96	10.63
C	0.177	0.193	4.50	4.90
D	0.024	0.039	0.60	1.00
F	0.116	0.129	2.95	3.28
G	0.100 BSC		2.54 BSC	
H	0.118	0.135	3.00	3.43
J	0.018	0.025	0.45	0.63
K	0.503	0.541	12.78	13.73
L	0.048	0.058	1.23	1.47
N	0.200 BSC		5.08 BSC	
Q	0.122	0.138	3.10	3.50
R	0.099	0.117	2.51	2.96
S	0.092	0.113	2.34	2.87
U	0.239	0.271	6.06	6.88

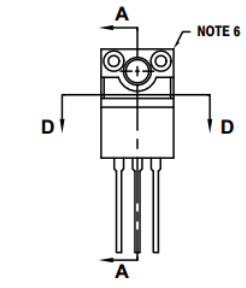
TO−220 FULLPAK
CASE 221AH (OSV)



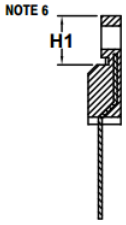
NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR UNCONTROLLED IN THIS AREA.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH AND GATE PROTRUSIONS. MOLD FLASH AND GATE PROTRUSIONS NOT TO EXCEED 0.13 PER SIDE. THESE DIMENSIONS ARE TO BE MEASURED AT OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DIMENSION b2 DOES NOT INCLUDE DAMBAR PROTRUSION. LEAD WIDTH INCLUDING PROTRUSION SHALL NOT EXCEED 2.00.
6. CONTOURS AND FEATURES OF THE MOLDED PACKAGE BODY MAY VARY WITHIN THE ENVELOP DEFINED BY DIMENSIONS A1 AND H1 FOR MANUFACTURING PURPOSES.

	MILLIMETERS	
DIM	MIN	MAX
A	4.30	4.70
A1	2.50	2.90
A2	2.50	2.90
b	0.54	0.84
b2	1.10	1.40
c	0.49	0.79
D	14.70	15.30
E	9.70	10.30
e	2.54 BSC	
H1	6.60	7.10
L	12.50	14.73
L1	---	2.80
P	3.00	3.40
Q	2.80	3.20


SECTION D−D



ALTERNATE CONSTRUCTION



SECTION A−A

Reliability Data Summary:

QV DEVICE NAME: MBRF20200CTG
PACKAGE: TO220FP

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta= 90°C, 80% max rated V	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= 3.5 min	15000 cyc	0/240
TC	JESD22-A104	Ta= -65°C to +150°C	1000 cyc	0/240
H3TRB	JESD22-A101	85°C, 85% RH, 18.8psig, bias	1008 hrs	0/240
AC	JESD22-A118	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:

Part Number	Qualification Vehicle
MBRF10H150CTG	MBRF20200CTG
MBRF10L60CTG	MBRF20200CTG
MBRF20100CTG	MBRF20200CTG
MBRF20200CTG	MBRF20200CTG
MBRF2045CTG	MBRF20200CTG
MBRF2060CTG	MBRF20200CTG
MBRF20H150CTG	MBRF20200CTG
MBRF20L45CTG	MBRF20200CTG
MBRF20L60CTG	MBRF20200CTG
MBRF2545CTG	MBRF20200CTG
MBRF30H100CTG	MBRF20200CTG
MBRF30H150CTG	MBRF20200CTG
MBRF30L45CTG	MBRF20200CTG
MBRF30L60CTG	MBRF20200CTG
MBRF40250TG	MBRF20200CTG