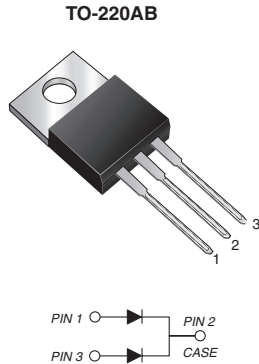


Dual High-Voltage Trench MOS Barrier Schottky Rectifier

 Ultra Low $V_F = 0.402$ V at $I_F = 5$ A

FEATURES

- Trench MOS Schottky Technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in high frequency inverters, switching power supplies, free-wheeling diodes, oring diode, dc-to-dc converters and reverse battery protection.

MECHANICAL DATA
Case: TO-220AB

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	2 x 30 A
V_{RRM}	120 V
I_{FSM}	300 A
V_F at $I_F = 30$ A	0.698 V
T_j max.	150 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER		SYMBOL	V60120C	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	120	V
Maximum average forward rectified current (see Fig. 1)	per device per diode	$I_{F(AV)}$	60 30	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	300	
Peak repetitive reverse current per diode at $t_p = 2$ μ s, 1 kHz		I_{RRM}	1.0	
Voltage rate of change (rated V_R)		dv/dt	10000	V/ μ s
Operating junction and storage temperature range		T_J, T_{STG}	- 20 to + 150	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Breakdown voltage	at $I_R = 1.0\text{ mA}$	$T_j = 25\text{ }^\circ\text{C}$	$V_{(BR)}$	120 (minimum)	-	V
Instantaneous forward voltage ⁽¹⁾ per diode	at $I_F = 5\text{ A}$ $I_F = 15\text{ A}$ $I_F = 30\text{ A}$	$T_j = 25\text{ }^\circ\text{C}$	V_F	0.478 0.648 0.854	- - 0.95	
	at $I_F = 5\text{ A}$ $I_F = 15\text{ A}$ $I_F = 30\text{ A}$	$T_j = 125\text{ }^\circ\text{C}$		0.402 0.582 0.698	- - 0.75	
Reverse current at rated V_R ⁽¹⁾ per diode	at $V_R = 90\text{ V}$	$T_j = 25\text{ }^\circ\text{C}$ $T_j = 125\text{ }^\circ\text{C}$	I_R	14.2 11.3	- -	μA mA
	at $V_R = 120\text{ V}$	$T_j = 25\text{ }^\circ\text{C}$ $T_j = 125\text{ }^\circ\text{C}$		47.3 23.5	500 45	μA mA

Note:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	V60120C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.2	$^\circ\text{C/W}$

ORDERING INFORMATION					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V60120C-E3/45	1.876	45	50/Tube	Tube

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

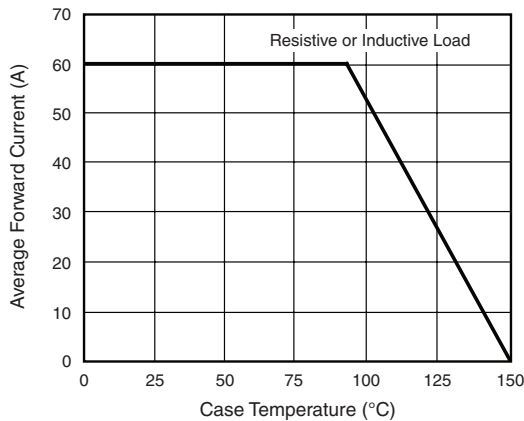


Figure 1. Forward Current Derating Curve

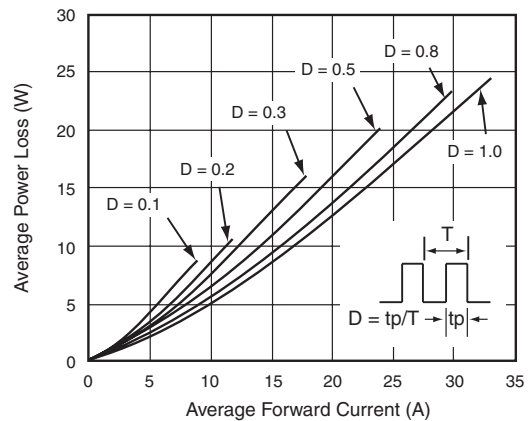


Figure 2. Forward Power Loss Characteristics Per Diode

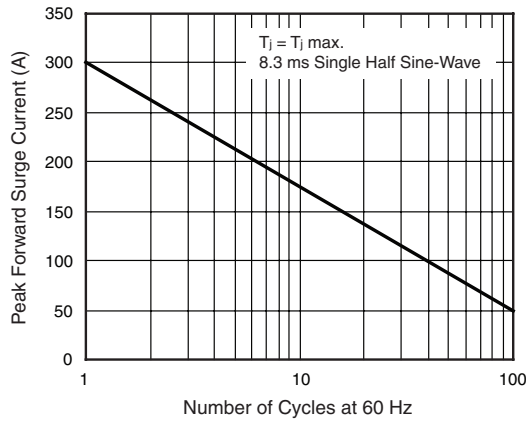


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

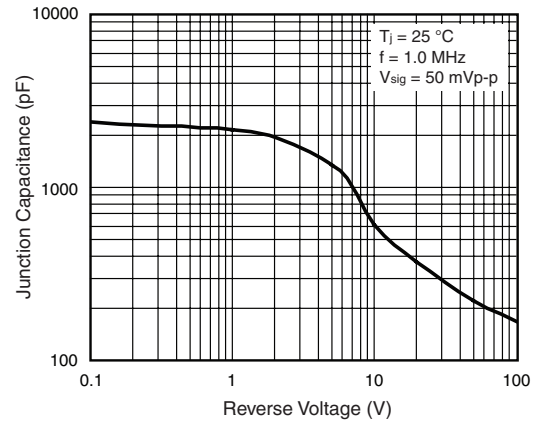


Figure 6. Typical Junction Capacitance Per Diode

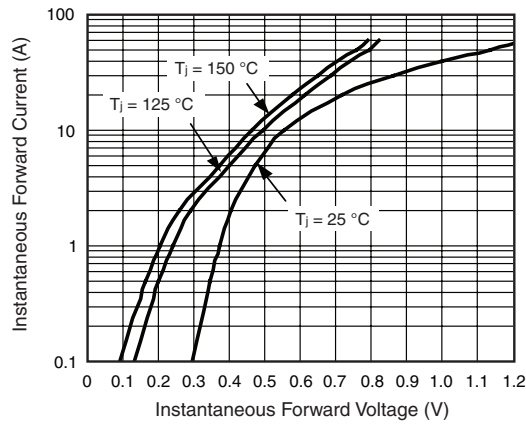


Figure 4. Typical Instantaneous Forward Characteristics Per Diode

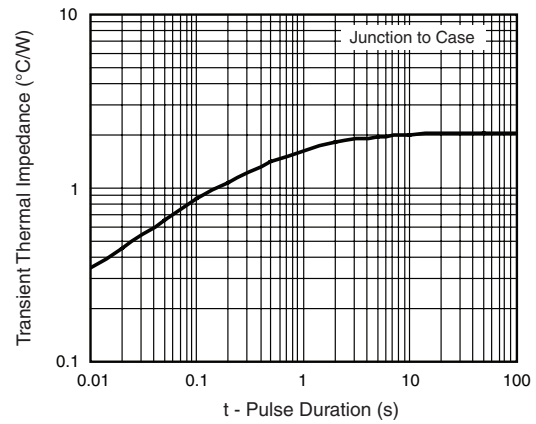


Figure 7. Typical Transient Thermal Impedance Per Diode

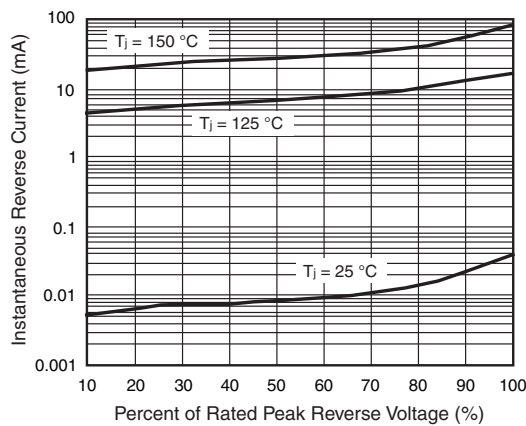
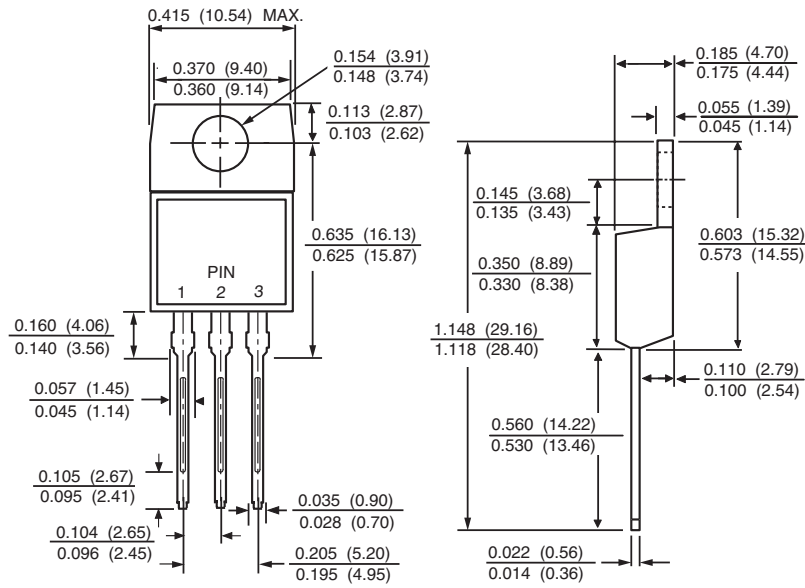


Figure 5. Typical Reverse Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB





Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.