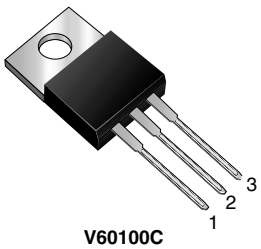
Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.36 V at I_F = 5 A

TMBS®

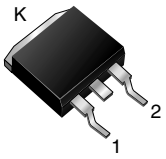
TO-220AB



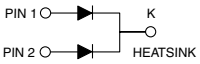
V60100C



TO-263AB



VB60100C



FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AB)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in high frequency inverters, switching power supplies, freewheeling diodes, OR-ing diode, dc-to-dc converters and reverse battery protection.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 30 A
V_{RRM}	100 V
I_{FSM}	320 A
V_F at I_F = 30 A	0.66 V
T_J max.	150 °C

MECHANICAL DATA

Case: TO-220AB and TO-263AB

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for commercial grade, meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs Maximum

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	V60100C	VB60100C	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	100		V
Maximum average forward rectified current (Fig. 1)	per device per diode	$I_{F(AV)}$	60 30		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	per diode	I_{FSM}	320		
Operating junction and storage temperature range		T_J, T_{STG}	- 40 to + 150		°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Breakdown voltage	I_R = 1.0 mA	T_A = 25 °C	V_{BR}	100 (minimum)	-	V
Instantaneous forward voltage per diode (1)	I_F = 5 A I_F = 10 A I_F = 15 A I_F = 20 A I_F = 30 A	T_A = 25 °C	V_F	0.45 0.52 0.58 0.63 0.73	- - 0.63 - 0.79	
	I_F = 5 A I_F = 10 A I_F = 15 A I_F = 20 A I_F = 30 A	T_A = 125 °C		0.36 0.45 0.53 0.58 0.66	- - 0.58 - 0.70	
Reverse current at rated V_{RM} per diode (2)	V_R = 80 V	T_A = 25 °C T_A = 125 °C	I_R	24 13	500 20	µA mA
	V_R = 100 V	T_A = 25 °C T_A = 125 °C		65 30	1000 -	µA mA

Notes:

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

(2) Pulse test: 10 ms pulse width

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**V60100C**	**VB60100C**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JC}$	2.5	2.5	°C/W

ORDERING INFORMATION					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	V60100C-E3/4W	1.89	4W	50/tube	Tube
TO-263AB	VB60100C-E3/4W	1.38	4W	50/tube	Tube
TO-263AB	VB60100C-E3/8W	1.38	8W	800/reel	Tape and reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

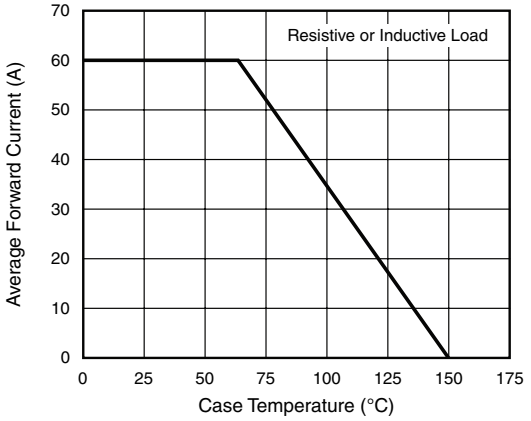


Figure 1. Forward Current Derating Curve

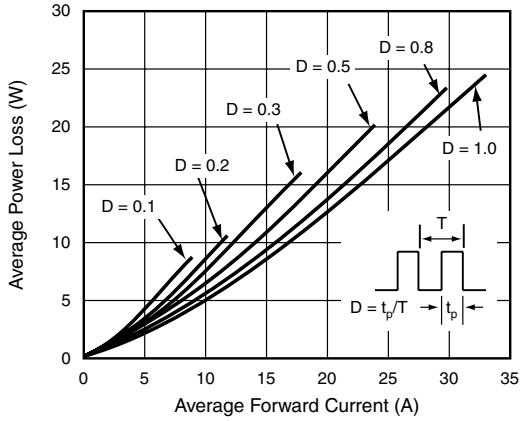


Figure 2. Forward Power Loss Characteristics Per Diode

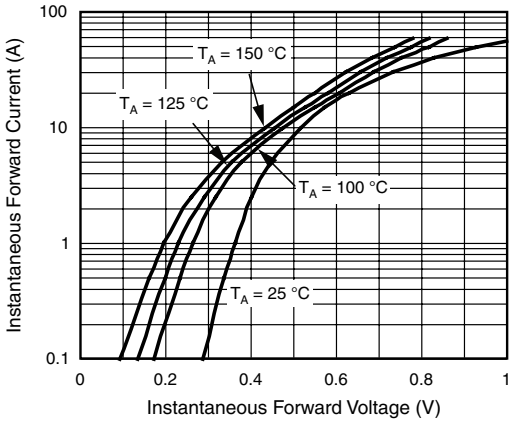


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

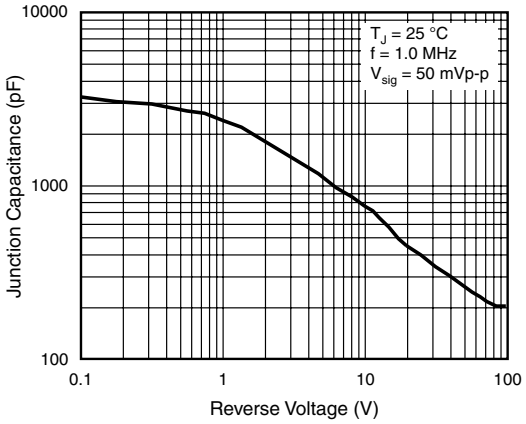


Figure 5. Typical Junction Capacitance Per Diode

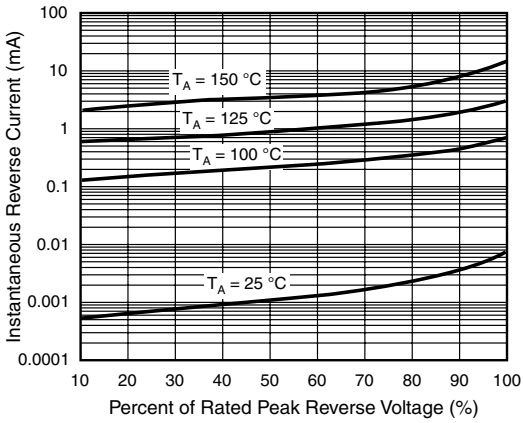


Figure 4. Typical Reverse Characteristics Per Diode

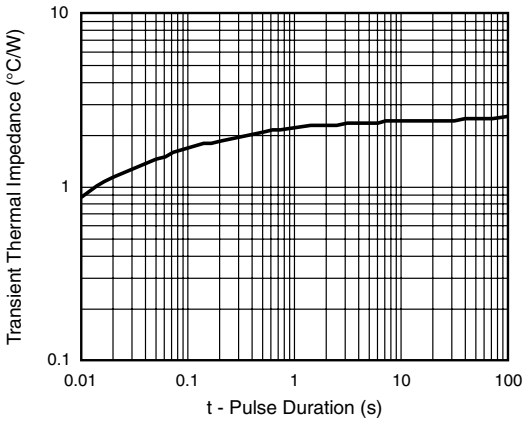
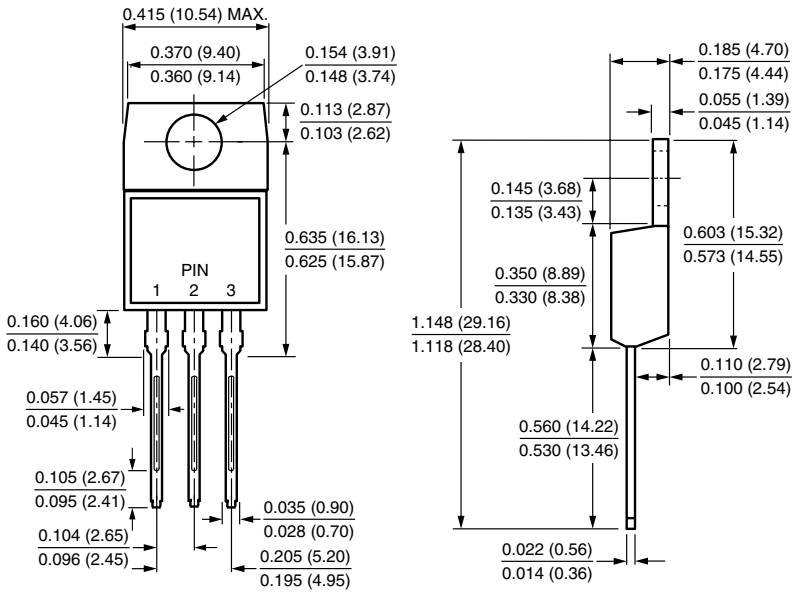


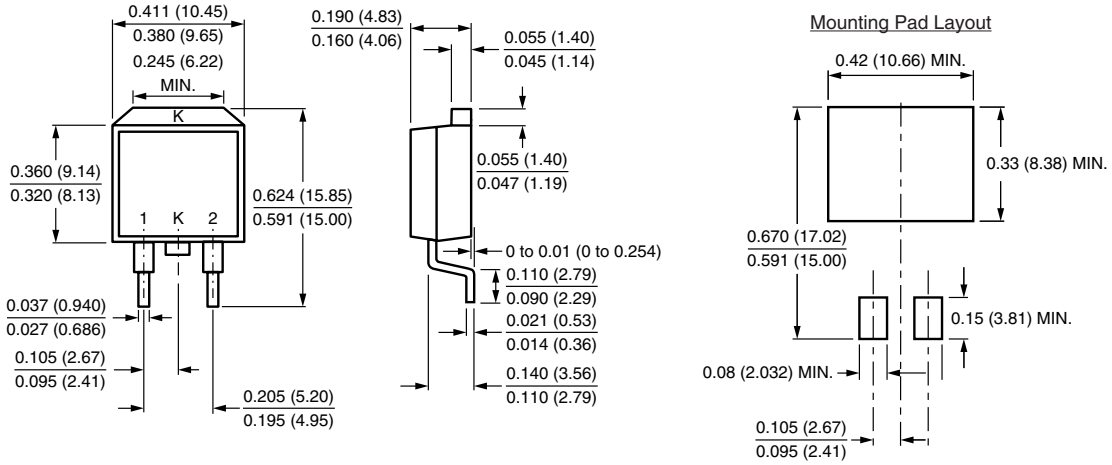
Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



TO-263AB



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