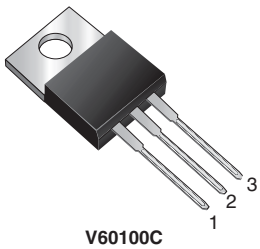
Dual High Voltage Trench MOS Barrier Schottky Rectifier

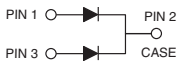
Ultra Low V_F = 0.36 V at I_F = 5 A

TMBS®

TO-220AB



V60100C



FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

HALOGEN FREE

TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/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
Package	TO-220AB
Diode variation	Common cathode

MECHANICAL DATA

Case: TO-220AB

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS compliant, and commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

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

PARAMETER		SYMBOL	V60100C	UNIT
Max. repetitive peak reverse voltage		V_{RRM}	100	V
Max. average forward rectified current (fig. 1)	per device	$I_{F(AV)}$	60	A
	per diode		30	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	320	A
Voltage rate of change (rated V_R)		dV/dt	10 000	V/µs
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 (min.)	-	V
Instantaneous forward voltage per diode	I_F = 5 A	T_A = 25 °C	V_F (1)	0.45	-	V
	I_F = 10 A			0.52	-	
	I_F = 15 A			0.58	0.63	
	I_F = 20 A			0.63	-	
	I_F = 30 A			0.73	0.79	
	I_F = 5 A	T_A = 125 °C		0.36	-	
	I_F = 10 A			0.45	-	
	I_F = 15 A			0.53	0.58	
	I_F = 20 A			0.58	-	
	I_F = 30 A			0.66	0.70	
Reverse current at rated V_R per diode	V_R = 80 V	T_A = 25 °C	I_R (2)	24	500	µA
		T_A = 125 °C		13	20	mA
	V_R = 100 V	T_A = 25 °C		65	1000	µA
		T_A = 125 °C		30	-	mA

Notes

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

(2) Pulse test: Pulse width ≤ 40 ms

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

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	V60100C-M3/4W	1.89	4W	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

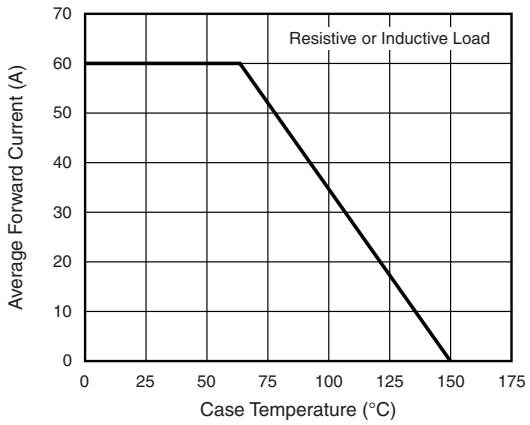


Fig. 1 - Forward Current Derating Curve

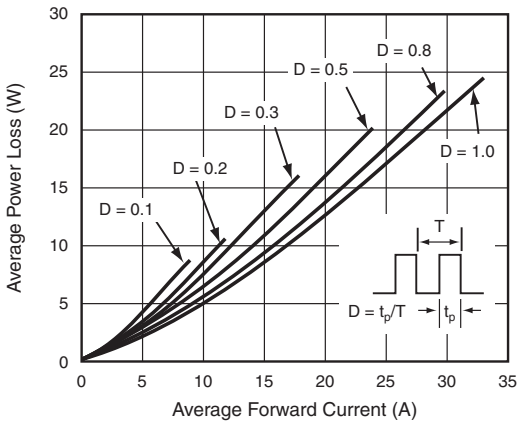


Fig. 2 - Forward Power Loss Characteristics Per Diode

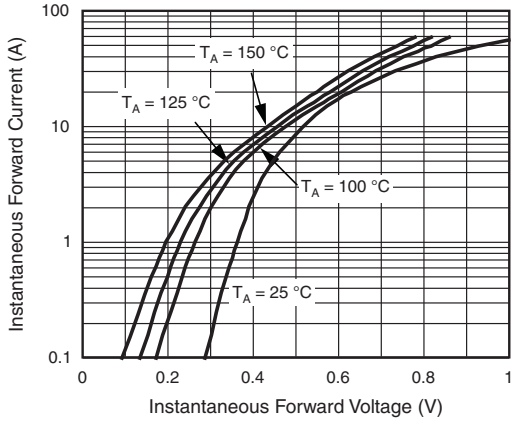


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

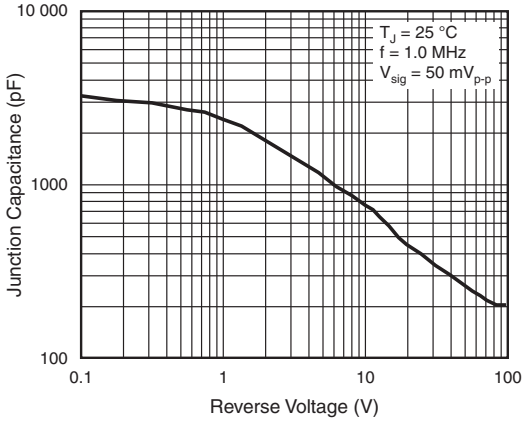


Fig. 5 - Typical Junction Capacitance Per Diode

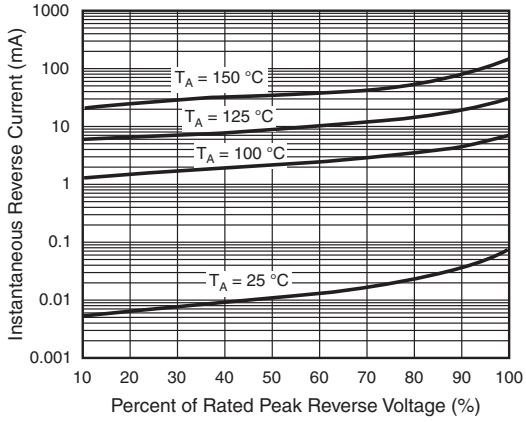


Fig. 4 - Typical Reverse Characteristics Per Diode

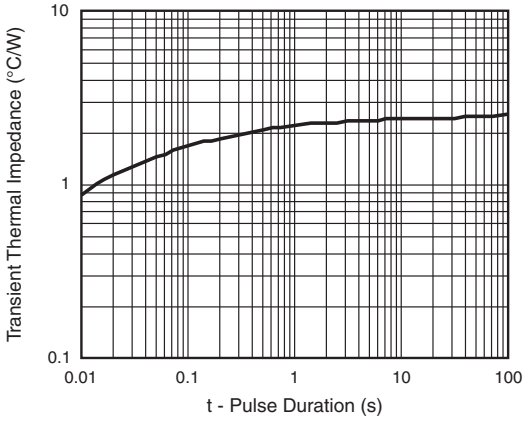
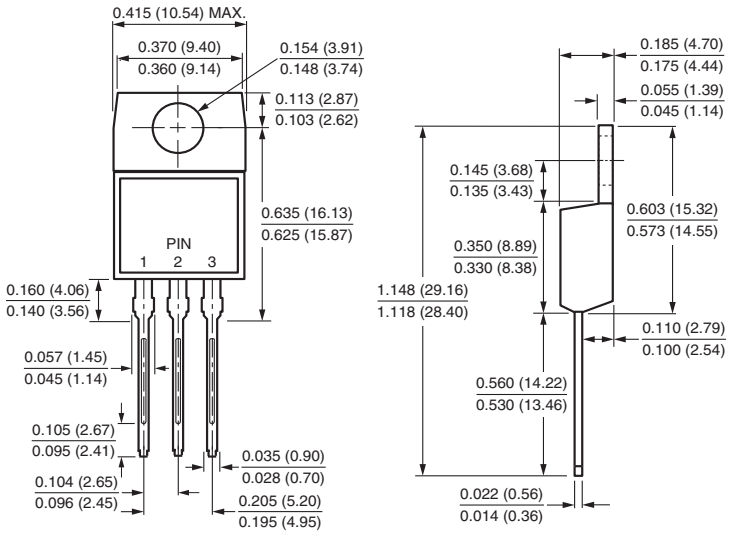


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



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