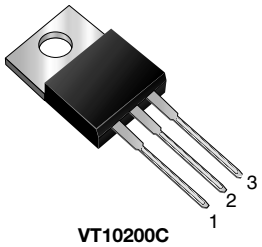
Trench MOS Barrier Schottky Rectifier

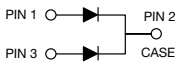
Ultra Low V_F = 0.58 V at I_F = 2.5 A

TMBS®

TO-220AB



VT10200C



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.

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 maximum

PRIMARY CHARACTERISTICS	
Package	TO-220AB
$I_{F(AV)}$	2 x 5.0 A
V_{RRM}	200 V
I_{FSM}	80 A
V_F at I_F = 5.0 A	0.65 V
T_J max.	150 °C
Diode variations	Common cathode

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

PARAMETER		SYMBOL	VT10200C	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	200	V
Maximum average forward rectified current (fig. 1)	per device	$I_{F(AV)}$	10.0	A
	per diode		5.0	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	80	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}	200 (minimum)	-	V
Instantaneous forward voltage per diode	I_F = 2.5 A	T_A = 25 °C	V_F (1)	0.81	-	V
	I_F = 5.0 A			1.10	1.60	
	I_F = 2.5 A	T_A = 125 °C		0.58	-	
	I_F = 5.0 A			0.65	0.73	
Reverse current per diode	V_R = 180 V	T_A = 25 °C	I_R (2)	1.7	-	µA
		T_A = 125 °C		1.8	-	mA
	V_R = 200 V	T_A = 25 °C		-	150	µA
		T_A = 125 °C		2.5	10	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	VT10200C	UNIT
Typical thermal resistance	per diode	$R_{\theta JC}$	3.5	°C/W
	per device		2.5	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	VT10200C-M3/4W	1.88	4W	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

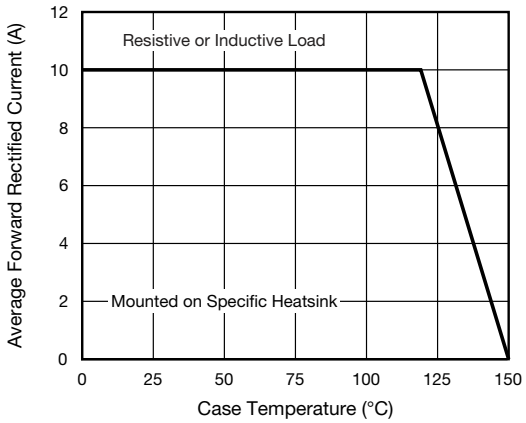


Fig. 1 - Maximum Forward Current Derating Curve

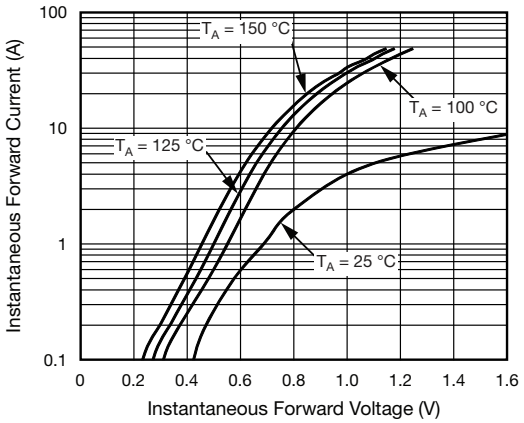


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

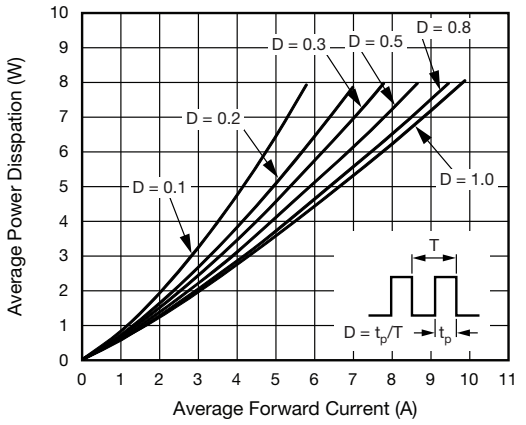


Fig. 2 - Forward Power Loss Characteristics Per Device

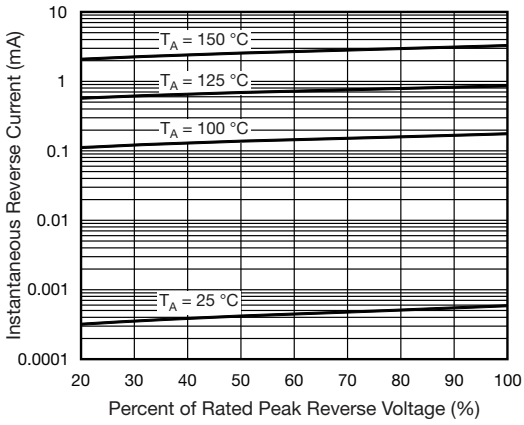


Fig. 4 - Typical Reverse Characteristics Per Diode

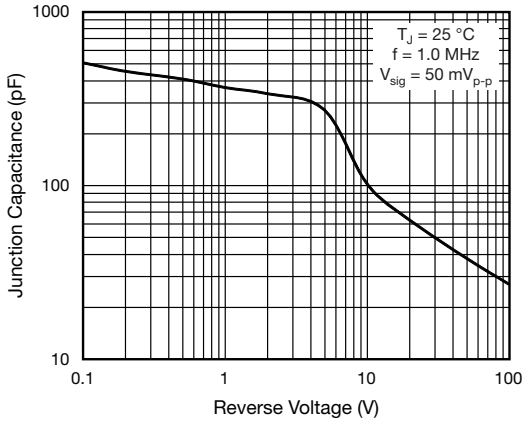


Fig. 5 - Typical Junction Capacitance Per Diode

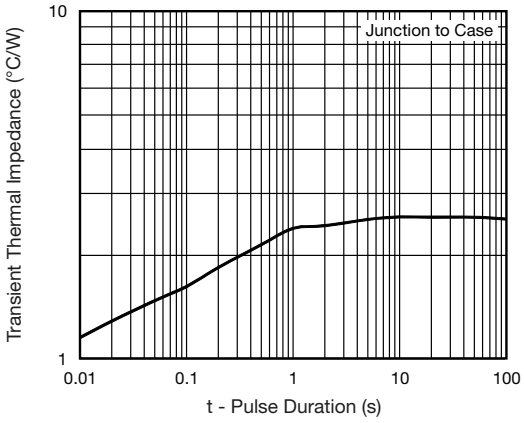
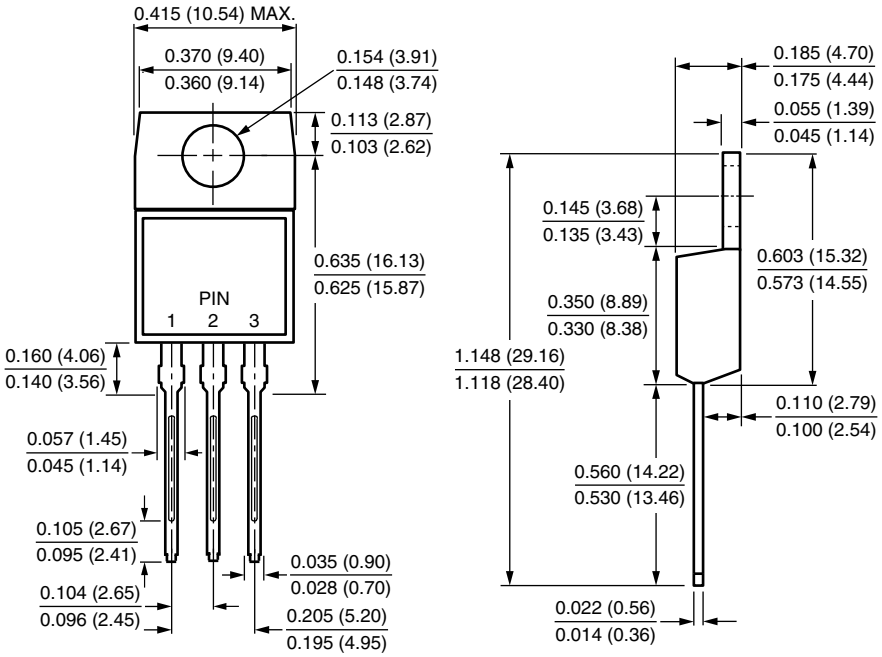


Fig. 6 - Typical Transient Thermal Impedance Per Device

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



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