

Vishay General Semiconductor

Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.58 \text{ V}$ at $I_F = 2.5 \text{ A}$



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			

FEATURES

- Trench MOS Schottky technology
- · Low forward voltage drop, low power losses

• High efficiency operation

RoHS COMPLIANT HALOGEN

- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

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

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-way on rated load per diode	I _{FSM}	80	А	
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

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 - T _A = 125 °C	V _F ⁽¹⁾	0.81	-	V
	I _F = 5.0 A			1.10	1.60	
	I _F = 2.5 A			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	-	μΑ
		T _A = 125 °C		1.8	-	mA
	$V_D = 200 V -$	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



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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER		SYMBOL	VT10200C	UNIT
Typical thermal resistance	per diode	$R_{ hetaJC}$	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)

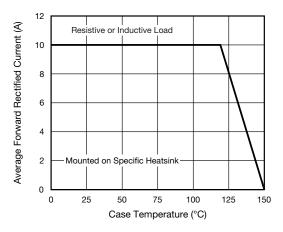


Fig. 1 - Maximum Forward Current Derating Curve

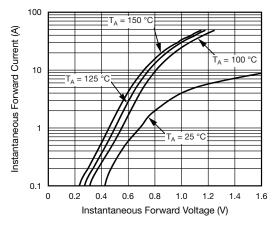


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

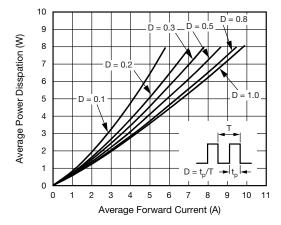


Fig. 2 - Forward Power Loss Characteristics Per Device

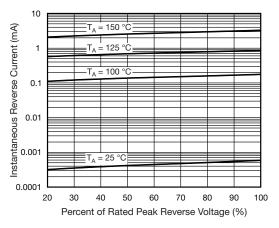


Fig. 4 - Typical Reverse Characteristics Per Diode



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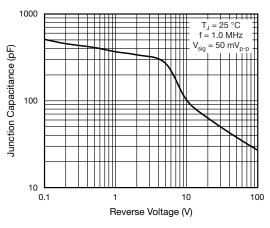


Fig. 5 - Typical Junction Capacitance Per Diode

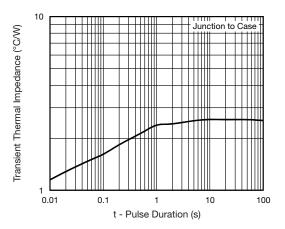
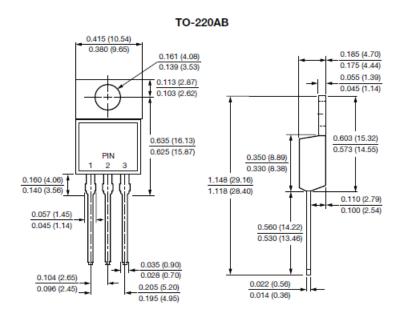


Fig. 6 - Typical Transient Thermal Impedance Per Device

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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