VT1045C, VIT1045C

Vishay General Semiconductor

Dual Low-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.34 V at I_F = 2.5 A



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

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: TO-220AB and TO-262AA Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

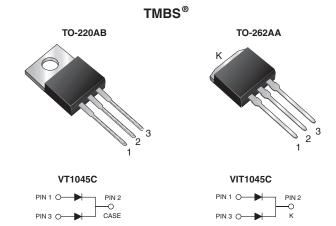
Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

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	VT1045C	VIT1045C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	45		V	
Maximum average forward rectified current (fig. 1)	per device	10		0	- A	
	per diode	I _{F(AV)}	5.0			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	100		А	
Operating junction and storage temperature range		T _J , T _{STG}	-40 to +150		°C	



2 x 5.0 A

45 V

100 A

0.41 V

150 °C

TO-220AB, TO-262AA

Common cathode

PRIMARY CHARACTERISTICS

I_{F(AV)}

V_{RRM}

IFSM

 V_F at $I_F = 5.0 \text{ A}$

T_J max.

Package **Diode variations**





RoHS COMPLIANT



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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT		
Instantaneous forward voltage per diode	I _F = 2.5 A	— T _A = 25 °C	- V _F ⁽¹⁾	0.44	-	v		
	I _F = 5.0 A			0.49	0.58			
	I _F = 2.5 A	– T _A = 125 °C		0.34	-			
	I _F = 5.0 A			0.41	0.50			
Reverse current per diode	V _B = 45 V	$T_A = 25 \text{°C}$	- I _R ⁽²⁾	-	500	μA		
	v _R = 45 V	T _A = 125 °C		5	15	mA		

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER		SYMBOL	VT1045C	VIT1045C	UNIT		
	per diode	Р	3.5		°C/W		
Typical thermal resistance	per device	$R_{ ext{ heta}JC}$	2.5				

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	VT1045C-M3/4W	1.87	4W	50/tube	Tube		
TO-262AA	VIT1045C-M3/4W	1.45	4W	50/tube	Tube		



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

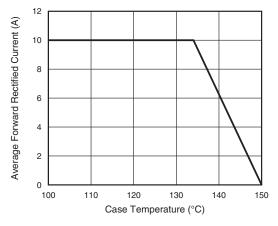


Fig. 1 - Maximum Forward Current Derating Curve

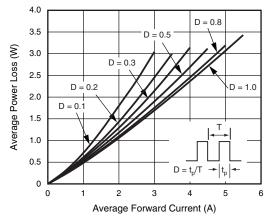


Fig. 2 - Forward Power Loss Characteristics Per Diode

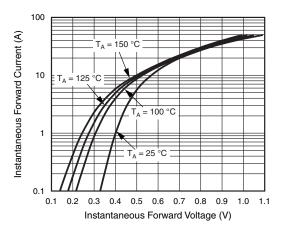


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

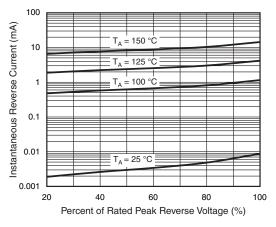


Fig. 4 - Typical Reverse Characteristics Per Diode

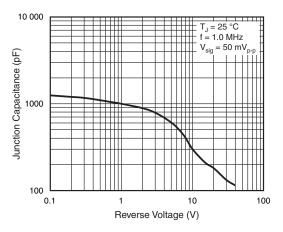


Fig. 5 - Typical Junction Capacitance Per Diode

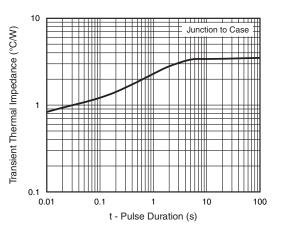


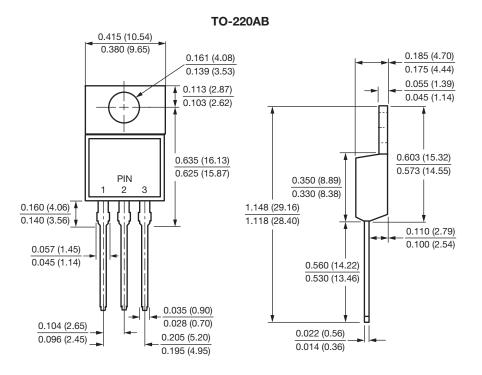
Fig. 6 - Typical Transient Thermal Impedance Per Diode

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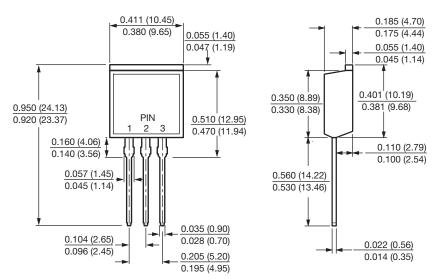




PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



TO-262AA





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