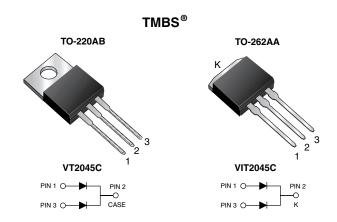
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Dual Low-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.33 V at I_F = 5.0 A



PRIMARY CHARACTERISTICS						
I _{F(AV)} 2 x 10 A						
V _{RRM}	45 V					
I _{FSM}	160 A					
V_F at $I_F = 10 A$	0.41 V					
T _J max.	150 °C					
Package	TO-220AB, TO-262AA					
Diode variations	Dual common cathode					

FEATURES

- 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
- AEC-Q101 qualified
- 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

Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

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

M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	VT2045C	VIT2045C	UNIT	
Maximum repetitive peak reverse voltage		V _{RRM}	45		V	
Maximum average forward rectified current (fig. 1)	per device		20		A	
	per diode	IF(AV)	10			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	160		А	
Operating junction and storage temperature range		T _J , T _{STG}	-40 to +150		°C	



RoHS COMPLIANT

FREE

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	$I_F = 5 A$	T _A = 25 °C	- V _F ⁽¹⁾	0.44	-	v	
	I _F = 10 A			0.49	0.58		
	I _F = 5 A	T _A = 125 °C		0.33	-		
	I _F = 10 A			0.41	0.52		
Reverse current per diode	$V_{-} = 45 V$	T _A = 25 °C	I _R ⁽²⁾	-	2000	μA	
		T _A = 125 °C		10	30	mA	

Notes

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⁽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	VT2045C	VIT2045C	UNIT	
Typical thermal resistance	per diode	$R_{ ext{ heta}JC}$	3.0		°C/W	
	per device		2.0			

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	VT2045C-M3/4W	1.88	4W	50/tube	Tube		
TO-262AA	VIT2045C-M3/4W	1.45	4W	50/tube	Tube		
TO-220AB	VT2045CHM3/4W (1)	1.88	4W	50/tube	Tube		
TO-262AA	VIT2045CHM3/4W (1)	1.45	4W	50/tube	Tube		

Note

(1) AEC-Q101 qualified

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

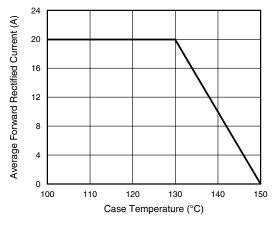
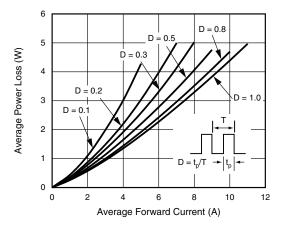


Fig. 1 - Maximum Forward Current Derating Curve



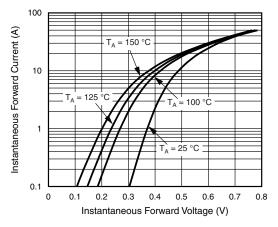
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Document Number: 89349

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Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

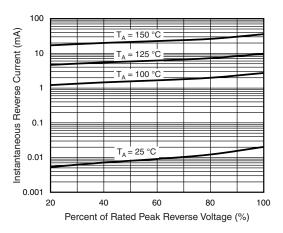


Fig. 4 - Typical Reverse Characteristics Per Diode

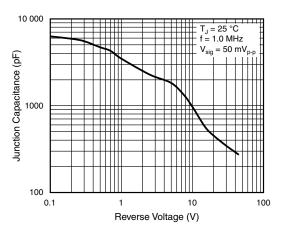


Fig. 5 - Typical Junction Capacitance Per Diode

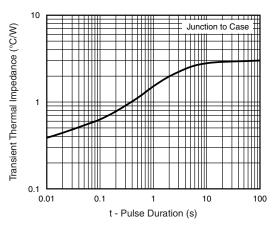


Fig. 6 - Typical Transient Thermal Impedance Per Diode



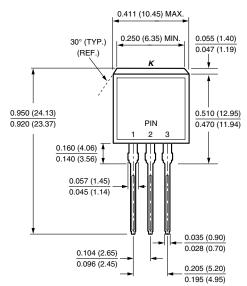
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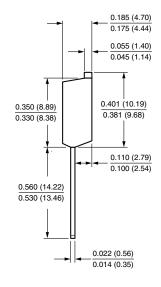
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

0.415 (10.54) MAX 0.370 (9.40) 0.185 (4.70) 0.154 (3.91) 0.360 (9.14) 0.148 (3.74) 0.175 (4.44) 0.055 (1.39) 4 0.113 (2.87) 0.045 (1.14) 0.103 (2.62) 0.145 (3.68) 0.135 (3.43) 0.603 (15.32) 0.635 (16.13) 0.573 (14.55) 0.625 (15.87) PIN 0.350 (8.89) 2 3 0.330 (8.38) 1.148 (29.16) 0.160 (4.06) Π 0.140 (3.56) 1.118 (28.40) 0.110 (2.79) 0.100 (2.54) 0.057 (1.45) 0.045 (1.14) 0.560 (14.22) 0.530 (13.46) 0.105 (2.67) 0.095 (2.41) 0.035 (0.90) 0.028 (0.70) 0.104 (2.65) 0.022 (0.56) 0.205 (5.20) 0.096 (2.45) 0.014 (0.36) 0.195 (4.95)

TO-220AB

TO-262AA







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