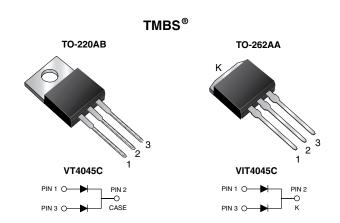


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Dual Low-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.28 \text{ V}$ at $I_F = 5.0 \text{ A}$



PRIMARY CHARACTERISTICS					
I _{F(AV)}	2 x 20 A				
V_{RRM}	45 V				
I _{FSM}	240 A				
V _F at I _F = 20 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

COMPLIANT **HALOGEN** Solder dip 275 °C max. 10 s, per JESD 22-B106 FREE

AEC-Q101 qualified

 Material categorization: For definitions of compliance please see www.vishav.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

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	VT4045C	VIT4045C	UNIT	
Maximum repetitive peak reverse voltage		V_{RRM}	45		V	
Maximum average forward rectified current (fig. 1)	per device	1	40		А	
	per diode	I _{F(AV)}	20			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	240		А	
Operating junction and storage temperature range		T _J , T _{STG}	-40 to +150		°C	



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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⁾	0.41	-	- V	
	$I_F = 10 \text{ A}$			0.44	-		
	I _F = 20 A			0.50	0.58		
	I _F = 5 A	T _A = 125 °C		0.28	-		
	I _F = 10 A			0.33	-		
	I _F = 20 A			0.41	0.50		
Reverse current per diode	V _R = 45 V	T _A = 25 °C	I _R ⁽²⁾	-	3000	μΑ	
	v _R = 43 v	T _A = 125 °C		18	50	mA	

Notes

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

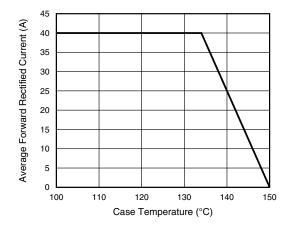
(2) Pulse test: Pulse width ≤ 40 ms

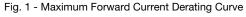
THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	VT4045C	VIT4045C	UNIT	
Typical thermal resistance	per diode	В	1.5		°C/W	
	per device	$R_{ hetaJC}$	0.8			

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	VT4045C-M3/4W	1.89	4W	50/tube	Tube		
TO-262AA	VIT4045C-M3/4W	1.46	4W	50/tube	Tube		
TO-220AB	VT4045CHM3/4W (1)	1.89	4W	50/tube	Tube		
TO-262AA	VIT4045CHM3/4W (1)	1.46	4W	50/tube	Tube		

Note

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





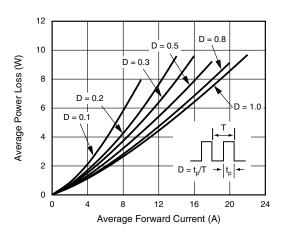


Fig. 2 - Forward Power Loss Characteristics Per Diode

⁽¹⁾ AEC-Q101 qualified



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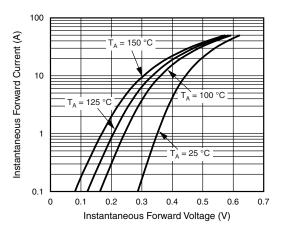


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

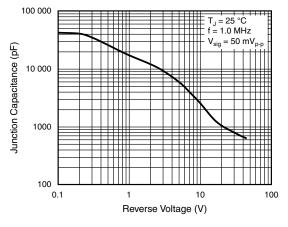


Fig. 5 - Typical Junction Capacitance Per Diode

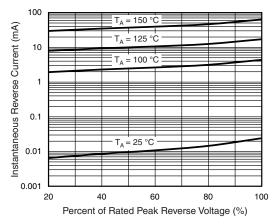


Fig. 4 - Typical Reverse Characteristics Per Diode

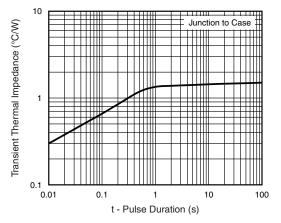


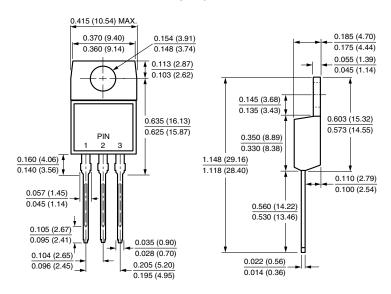
Fig. 6 - Typical Transient Thermal Impedance Per Diode

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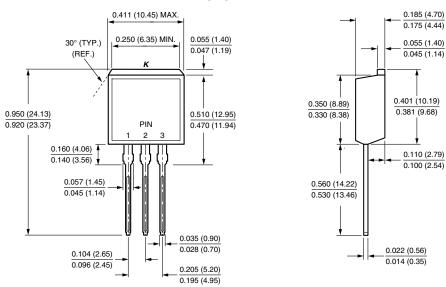
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



TO-262AA





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