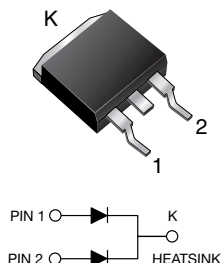


Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.36\text{ V}$ at $I_F = 5\text{ A}$

TMBS®
TO-263AB



FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- AEC-Q101 qualified available
- Automotive ordering code: base P/NHE3
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

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-263AB

Molding compound meets UL 94 V-0 flammability rating
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
HE3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 30 A
V_{RRM}	100 V
I_{FSM}	320 A
V_F at $I_F = 30\text{ A}$	0.66 V
T_J max.	150 °C
Package	TO-263AB
Diode variation	Dual common cathode

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	VB60100C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum average forward rectified current (fig. 1) per device	$I_{F(AV)}$	60	A
		30	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	320	A
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
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.45	-	V
	I _F = 10 A			0.52	-	
	I _F = 15 A			0.58	0.63	
	I _F = 20 A			0.63	-	
	I _F = 30 A			0.73	0.79	
	I _F = 5 A	T _A = 125 °C		0.36	-	
	I _F = 10 A			0.45	-	
	I _F = 15 A			0.53	0.58	
	I _F = 20 A			0.58	-	
	I _F = 30 A			0.66	0.70	
Reverse current at rated V _R per diode	V _R = 80 V	T _A = 25 °C	I _R ⁽²⁾	-	500	μA
		T _A = 125 °C		13	20	mA
	V _R = 100 V	T _A = 25 °C		-	1000	μA
		T _A = 125 °C		30	-	mA

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VB60100C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.5	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	VB60100CHE3/P ⁽¹⁾	1.38	P	50/tube	Tube
TO-263AB	VB60100CHE3/I ⁽¹⁾	1.38	I	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified

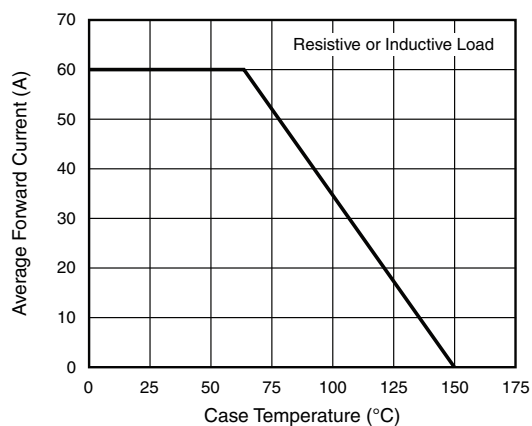
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

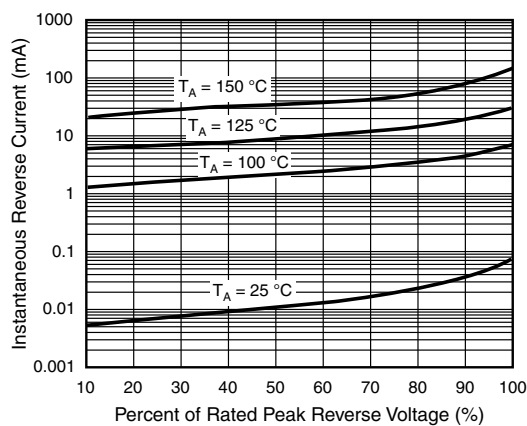


Fig. 4 - Typical Reverse Characteristics Per Diode

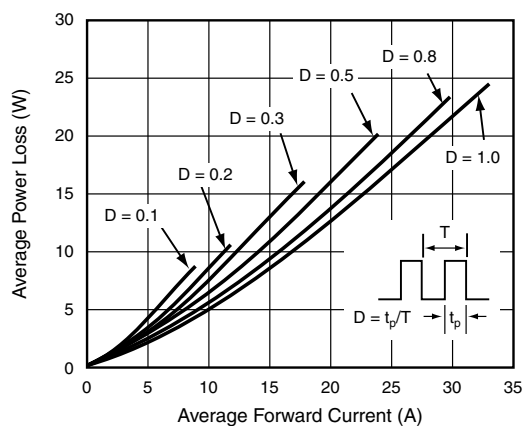


Fig. 2 - Forward Power Loss Characteristics Per Diode

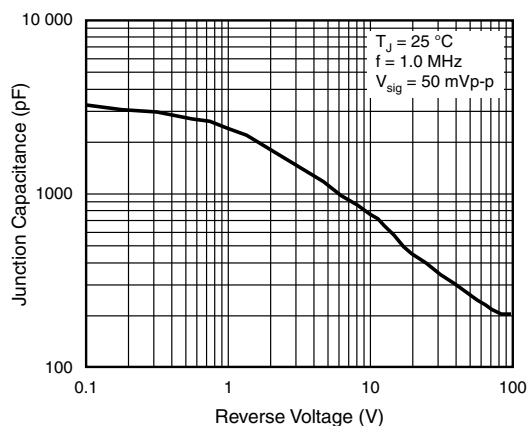


Fig. 5 - Typical Junction Capacitance Per Diode

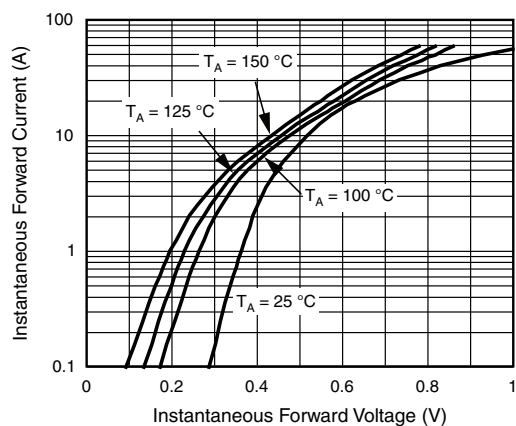


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

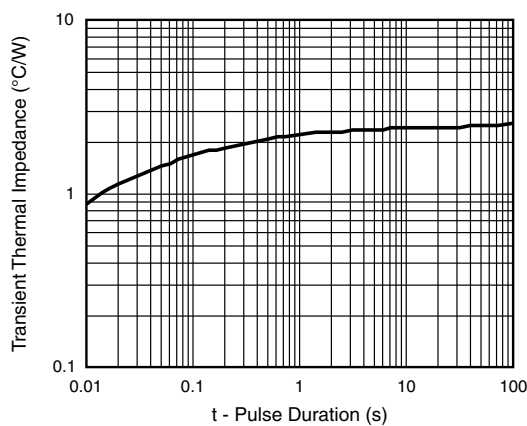
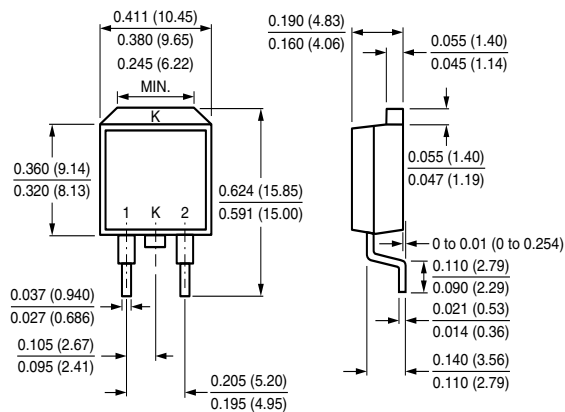


Fig. 6 - Typical Transient Thermal Impedance Per Diode

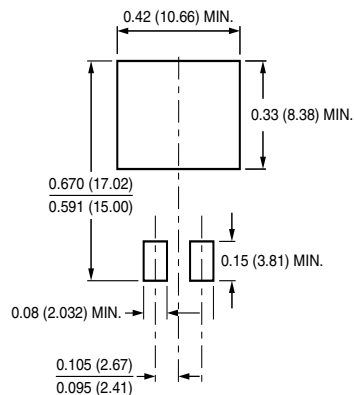


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-263AB



Mounting Pad Layout





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