Vishay General Semiconductor

Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.36$ V at $I_F = 5$ A

TMBS[®] TO-263AB

PIN 1 O \cap HEATSINK PIN 2 O

PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 30 A			
V _{RRM}	100 V			
I _{FSM}	320 A			
V_F at $I_F = 30$ A	0.66 V			
T _J max.	150 °C			
Package	TO-263AB			
Diode variation	Dual common cathode			

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

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 gualified

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

HE3 suffix meets JESD 201 class 2 whisker test

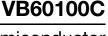
Polarity: As marked

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	VB60100C	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	100	V	
Maximum average forward rectified current (fig. 1)	le	60	A	
per diode	I _{F(AV)}	30		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	320	А	
Operating junction and storage temperature range	T _J , T _{STG}	-40 to +150	°C	

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COMPLIANT



Document Number: 87641

VB60100C



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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
	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	-		
Instantaneous forward voltage per diade	I _F = 30 A			0.73	0.79		
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 125 °C		0.36	-		
	I _F = 10 A			0.45	-		
	l _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 _ 90 V	T _A = 25 °C	I _R (2)	-	500	μA	
	V _R = 80 V	T _A = 125 °C		13	20	mA	
	V _B = 100 V	T _A = 25 °C		-	1000	μA	
	v _R = 100 V	T _A = 125 °C		30	-	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 °C unless otherwise noted)				
PARAMETER	SYMBOL	VB60100C	UNIT	
Typical thermal resistance per diode	$R_{ ext{ heta}JC}$	2.5	°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	Р	50/tube	Tube		
TO-263AB	VB60100CHE3/I (1)	1.38	l	800/reel	Tape and reel		

Note

(1) AEC-Q101 qualified



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

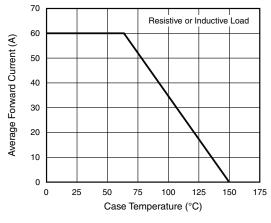


Fig. 1 - Forward Current Derating Curve

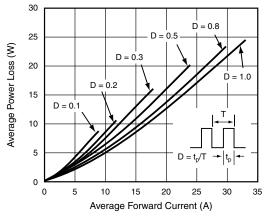


Fig. 2 - Forward Power Loss Characteristics Per Diode

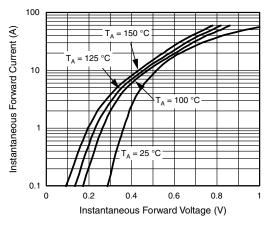
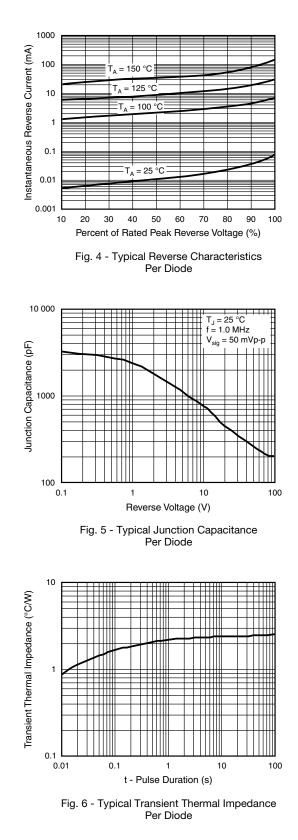


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



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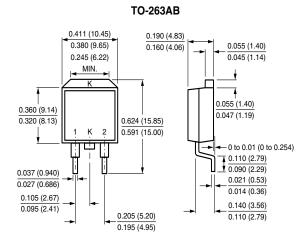
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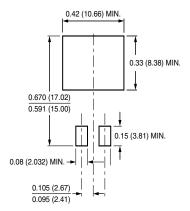


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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout





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