

Vishay General Semiconductor

Dual Common Cathode High Voltage Schottky Rectifier

FEATURES





RoHS



- · Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- · High forward surge capability
- High frequency operation
- Solder dip 260 °C, 40 s
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, or polarity protection application.

MECHANICAL DATA

Case: TO-220AB

Epoxy meets UL 94 V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A

whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

TO-220AB	
1 2	3
PIN 1 OPIN	2
PIN 3 O CAS	S E

PRIMARY CHARACTERISTICS				
I _{F(AV)}	2 x 30 A			
V_{RRM}	100 V			
I _{FSM}	350 A			
V_F at $I_F = 30 A$	0.64 V			
T _J max.	175 °C			
Package	TO-220AB			
Diode variations	Common cathode			

MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MBR60100CT	UNIT			
Maximum repetitive peak reverse voltage	V_{RRM}	100	V			
Working peak reverse voltage	V _{RWM}	100	V			
Maximum DC blocking voltage		V_{DC}	100	V		
Maximum average forward rectified current	total device		60	۸		
	per diode	I _{F(AV)}	30	Α		
Peak forward surge current 8.3 ms single half sine-wave superimpo on rated load per diode	I _{FSM}	350	А			
Peak repetitive reverse current per diode at $t_p = 2 \mu s$, 1 kHz	I _{RRM}	1.0	Α			
Peak non-repetitive reverse surge energy per diode (8/20 μs wavefo	E _{RSM}	25	mJ			
Non-repetitive avalanche energy per diode at 25 °C, I _{AS} = 1.0 A, L =	E _{AS}	20	mJ			
Voltage rate of change (rated V _R)	dV/dt	10 000	V/µs			
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +175	°C			



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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode (1)	I _F = 30 A	T _J = 25 °C	V _F	0.78	0.82	. V	
	I _F = 60 A			0.92	1		
	I _F = 30 A	T _J = 125 °C		0.64	0.69		
	I _F = 60 A			0.78	0.83		
Reverse current per diode (2)	T _J	T _J = 25 °C	I _R	8	100	μA	
	V _R = 100 V	T _J = 125 °C		8.5	20	mA	

Notes

⁽²⁾ Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MBR60100CT	UNIT	
Typical thermal resistance per diode	$R_{\theta JC}$	0.5	°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	MBR60100CT-E3/45	2.068	45	50/tube	Tube		

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

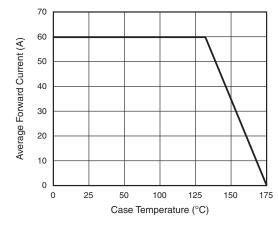


Fig. 1 - Forward Derating Curve

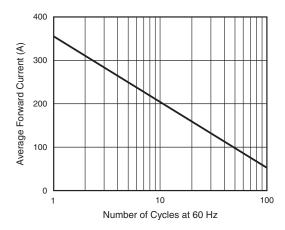


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

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

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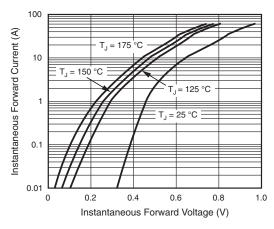


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

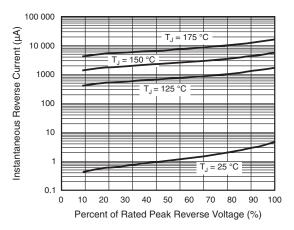


Fig. 4 - Typical Reverse Characteristics Per Diode

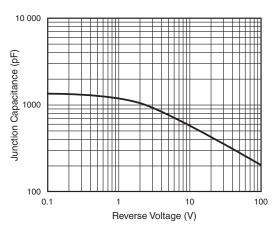


Fig. 5 - Typical Junction Capacitance Per Diode

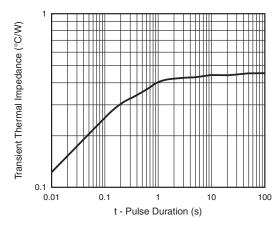
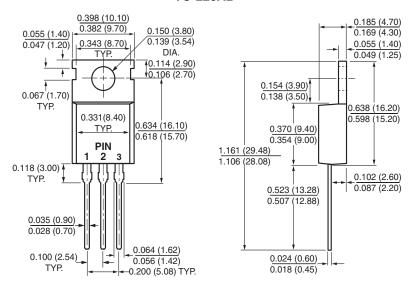


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



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