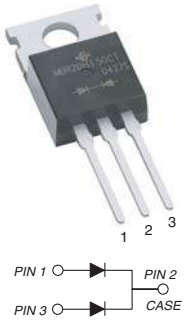
Dual Common Cathode High Voltage Schottky Rectifier

TO-220AB



FEATURES

- Power pack
- 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.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

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

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

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

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	$I_{F(AV)}$	60	A
	per diode		30	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	350	A
Peak repetitive reverse current per diode at t_p = 2 µs, 1 kHz		I_{RRM}	1.0	A
Peak non-repetitive reverse surge energy per diode (8/20 µs waveform)		E_{RSM}	25	mJ
Non-repetitive avalanche energy per diode at 25 °C, I_{AS} = 1.0 A, L = 40 mH		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)	V_R = 100 V	T_J = 25 °C	I_R	8	100	µA
		T_J = 125 °C		8.5	20	mA

Notes

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

(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)

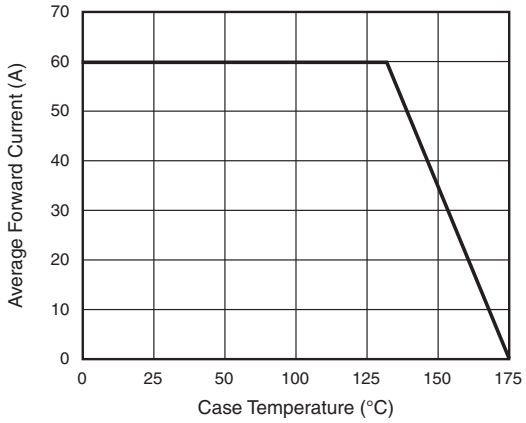

Fig. 1 - Forward Derating Curve

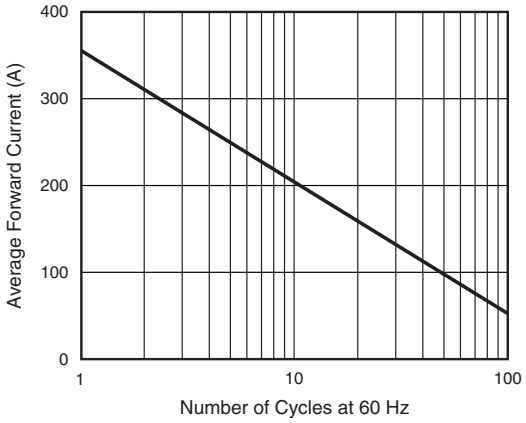

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

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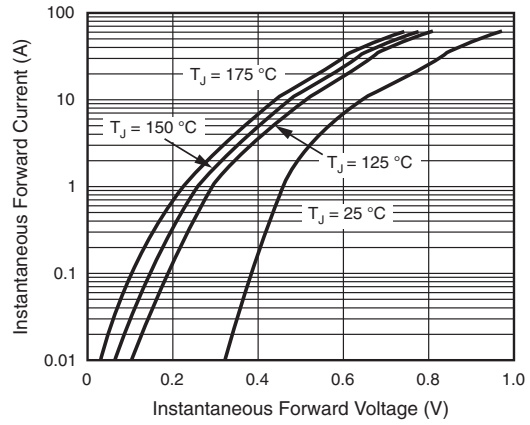


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

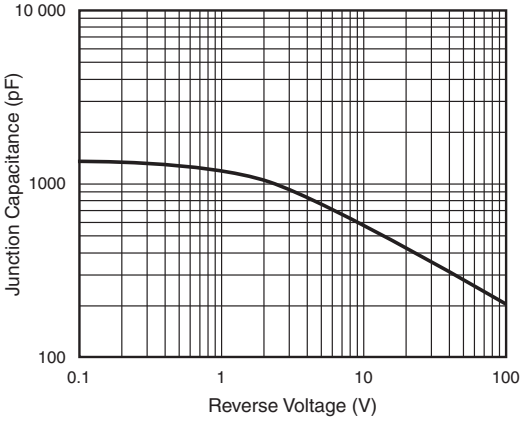


Fig. 5 - Typical Junction Capacitance Per Diode

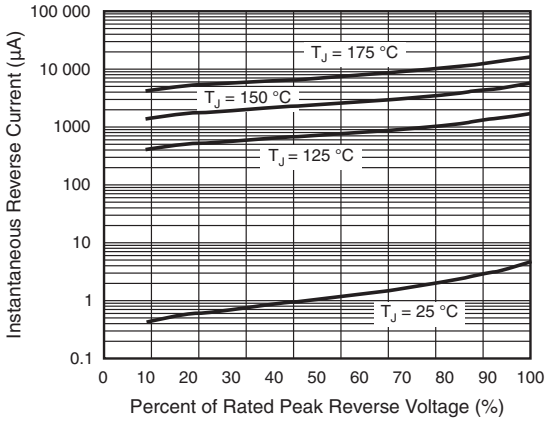


Fig. 4 - Typical Reverse Characteristics Per Diode

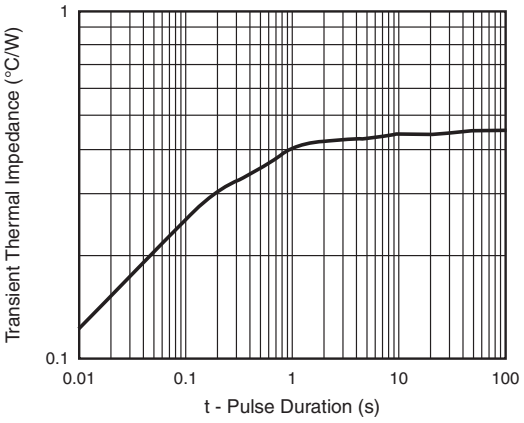
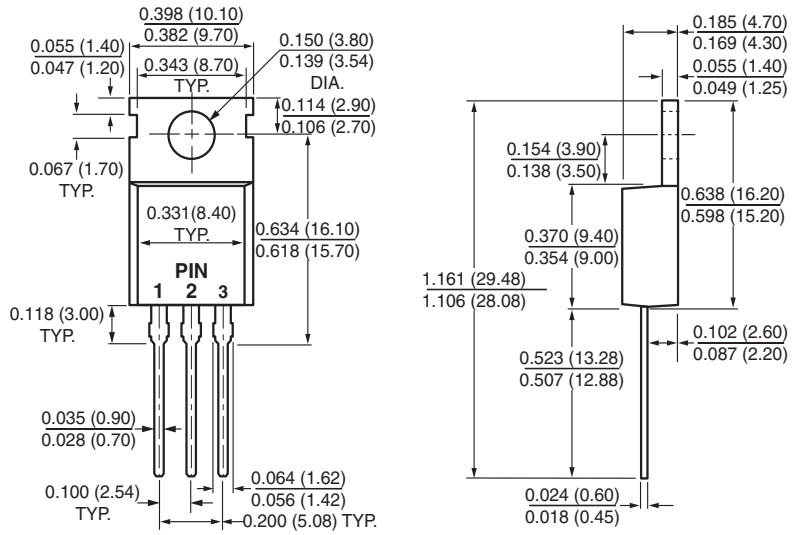


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



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