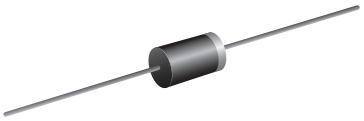
Miniature Schottky Barrier Rectifier



MPG06

FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: MPG06
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.6 A
V_{RRM}	20 V to 60 V
I_{FSM}	20 A
V_F	0.55 V, 0.70 V
T_J max.	125 °C, 150 °C

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SB020	SB030	SB040	SB050	SB060	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	V
Maximum DC blocking voltage	V_{DC}	20	30	40	50	60	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)	$I_{F(AV)}$	0.6					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	20					A
Operating junction temperature range	T_J	- 65 to + 125			- 65 to + 150		°C
Storage temperature range	T_{STG}	- 65 to + 150					°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	SB020	SB030	SB040	SB050	SB060	UNIT
Maximum instantaneous forward voltage	0.6 A	V_F (1)	0.55			0.70		V
Maximum instantaneous reverse current at rated DC blocking voltage	T_A = 25 °C	I_R (1)	0.5					mA
	T_A = 100 °C		10			5.0		

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**SYMBOL**	**SB020**	**SB030**	**SB040**	**SB050**	**SB060**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	80					°C/W
	$R_{\theta JL}$ (1)	20					

Note

(1) Thermal resistance junction to lead P.C.B. mounted 0.375" (9.5 mm) lead length

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (G)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SB040-E3/54	0.203	54	5500	13" diameter paper tape and reel
SB040-E3/73	0.203	73	3000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

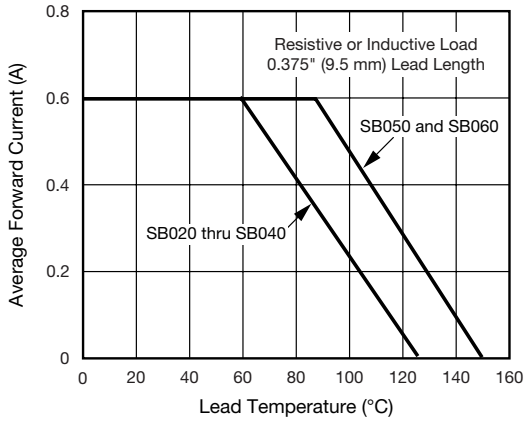


Fig. 1 - Forward Current Derating Curve

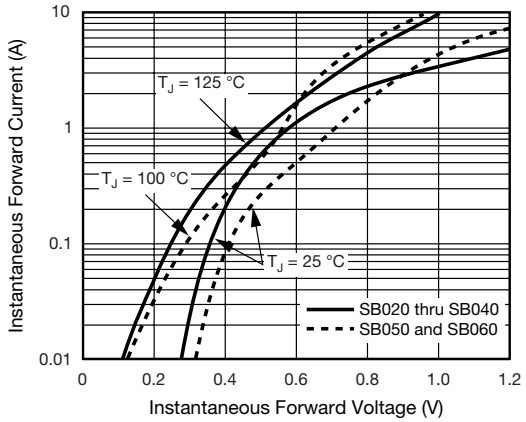


Fig. 3 - Typical Instantaneous Forward Characteristics

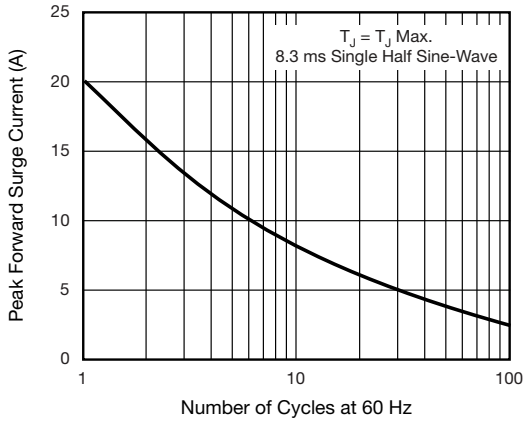


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

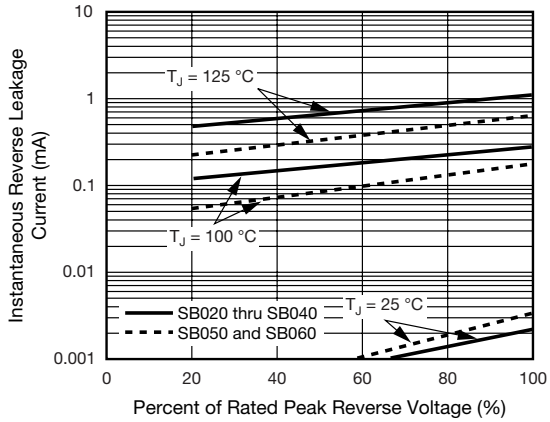


Fig. 4 - Typical Reverse Leakage Characteristics

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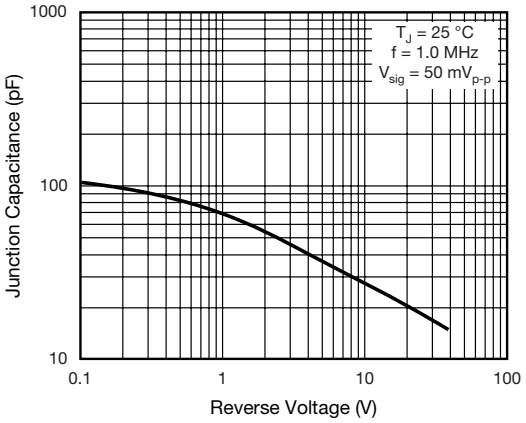


Fig. 5 - Typical Junction Capacitance

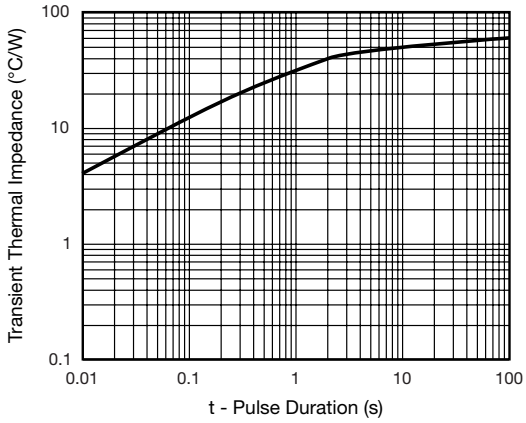
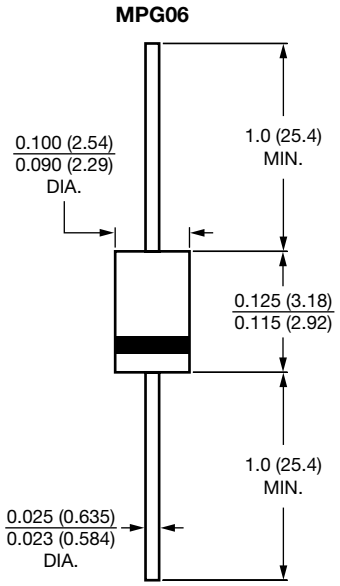


Fig. 6 - Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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