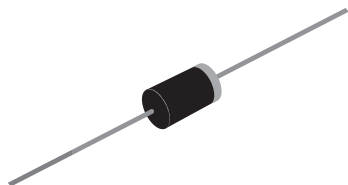


Miniature Schottky Barrier Rectifier



Case Style MPG06

FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High frequency operation
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, 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 ⁽¹⁾	0.6 A	V_F	0.55			0.70		V
Maximum instantaneous reverse current at rated DC blocking voltage ⁽¹⁾	$T_A = 25$ °C $T_A = 100$ °C	I_R	0.5					mA
			10		5.0			

Note:

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

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

PARAMETER	SYMBOL	SB020	SB030	SB040	SB050	SB060	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$			80 20			$^\circ\text{C/W}$

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

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

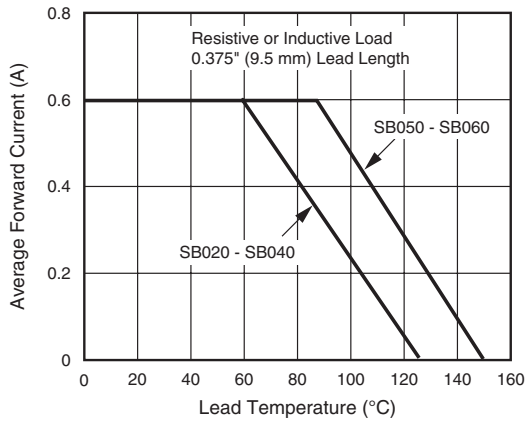


Figure 1. Forward Current Derating Curve

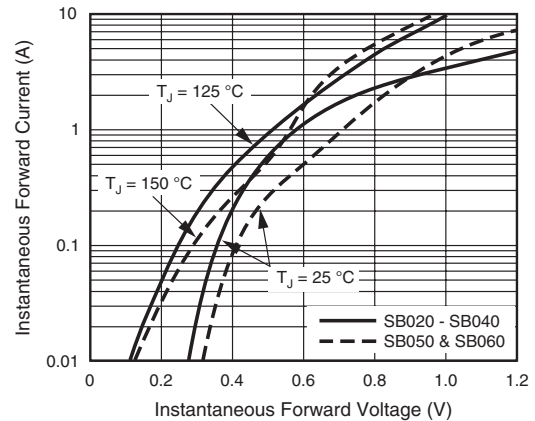


Figure 3. Typical Instantaneous Forward Characteristics

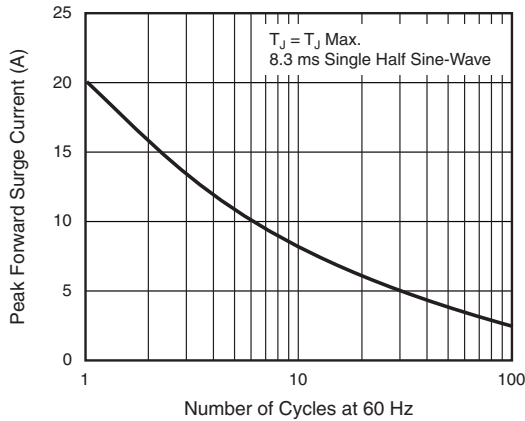


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

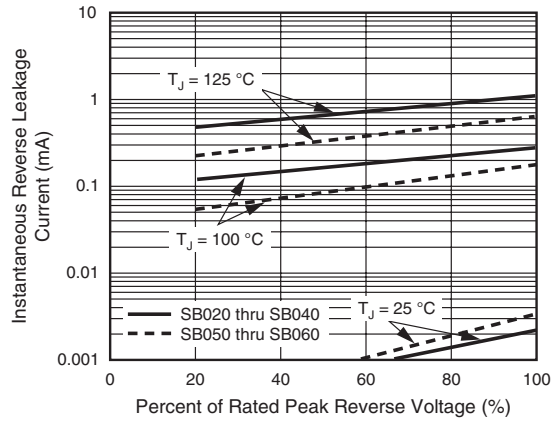


Figure 4. Typical Reverse Leakage Characteristics

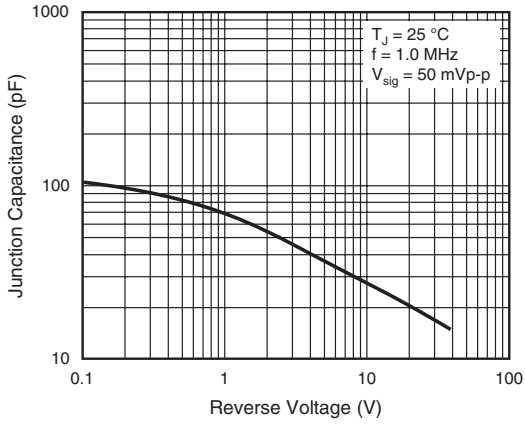


Figure 5. Typical Junction Capacitance

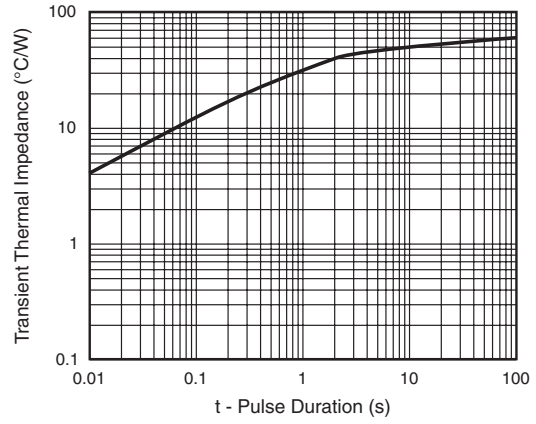
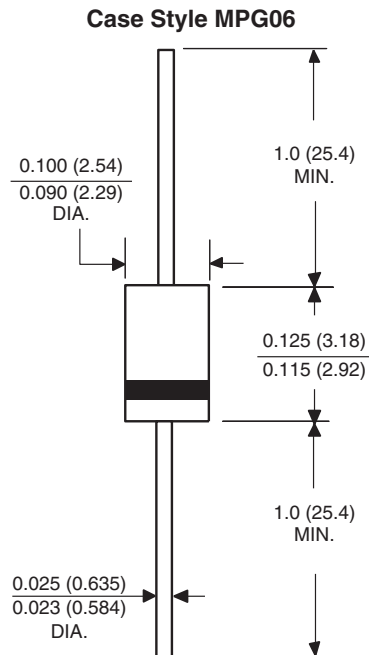


Figure 6. Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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