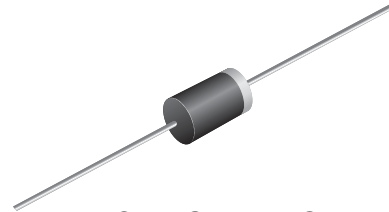


## Miniature Schottky Barrier Rectifier

### Major Ratings and 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



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 seconds



### Mechanical Data

**Case:** MPG06

Epoxy meets UL 94V-0 Flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

**Polarity:** Color band denotes the cathode end

### Typical Applications

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

### Maximum Ratings

$T_A = 25$  °C unless otherwise specified#

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 (See 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

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Test condition	Symbol	SB020	SB030	SB040	SB050	SB060	Unit	
Maximum instantaneous forward voltage	at 0.6 A <sup>(1)</sup>	$V_F$	0.55			0.70		V	
Maximum instantaneous reverse current at rated DC blocking voltage <sup>(1)</sup>	$T_A = 25\text{ }^\circ\text{C}$	$I_R$	0.5				5.0		mA
	$T_A = 100\text{ }^\circ\text{C}$		10						

Notes:

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

### Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	SB020	SB030	SB040	SB050	SB060	Unit	
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	80						$^\circ\text{C/W}$
	$R_{\theta JL}$	20						

Notes:

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

### Ratings and Characteristics Curves

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

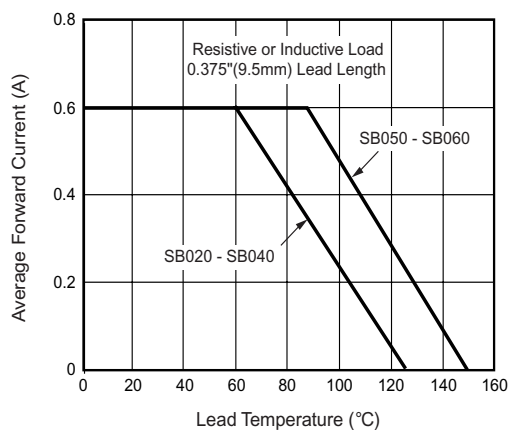


Figure 1. Forward Current Derating Curve

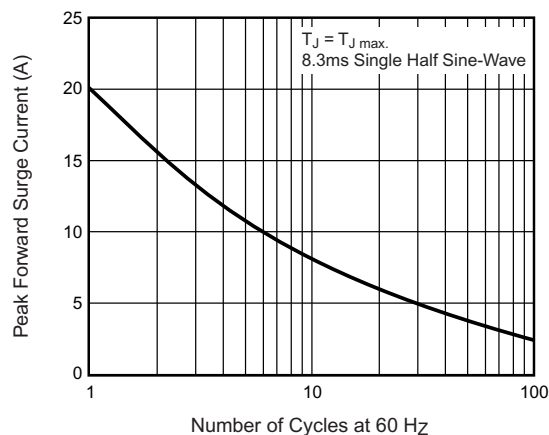


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

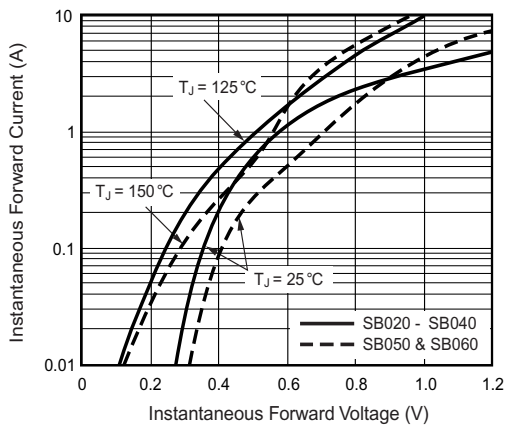


Figure 3. Typical Instantaneous Forward Characteristics

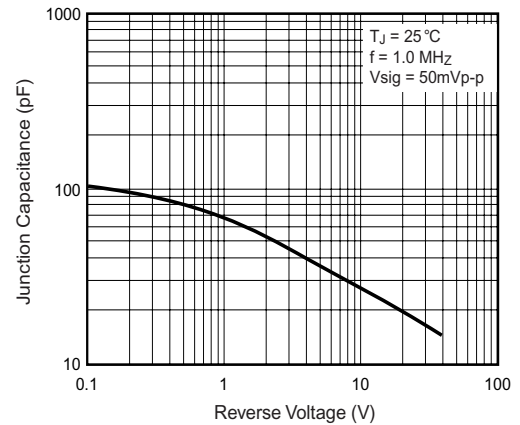


Figure 5. Typical Junction Capacitance

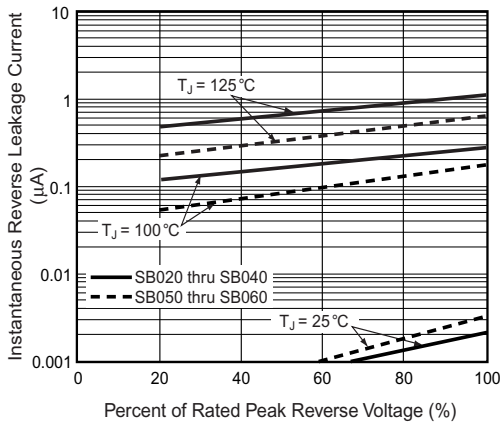


Figure 4. Typical Reverse Leakage Characteristics

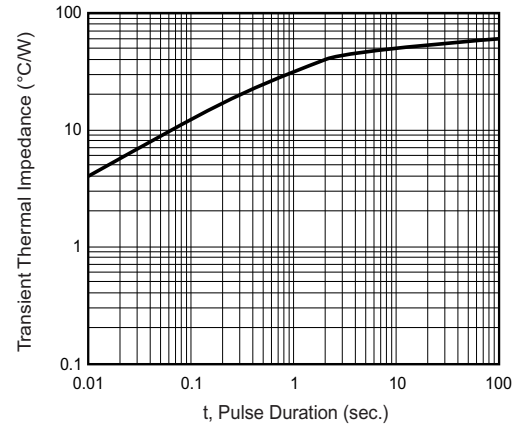


Figure 6. Transient Thermal Impedance

## Package outline dimensions in inches (millimeters)

