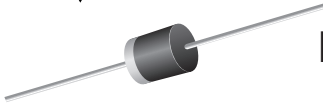




**THE DATASHEET OF  
SB040-E3/100**

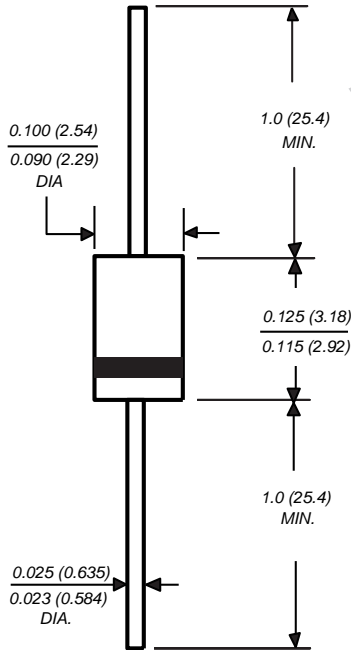




**Miniature Schottky Barrier Rectifiers**

**Reverse Voltage** 20 to 60V  
**Forward Current** 0.6A

**Case Style MPG06**



Dimensions in inches and (millimeters)

*Extended Voltage Range*

**Features**

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low power loss, high efficiency
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- Guardring for overvoltage protection

**Mechanical Data**

**Case:** Molded plastic body  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
 High temperature soldering guaranteed: 250°C/10 seconds 0.375" (9.5mm) lead length, 5lbs. (2.3kg) tension  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.0064oz., 0.181g

**Maximum Ratings and Thermal Characteristics** (TA = 25°C unless otherwise noted)

Parameter	Symbol	SB020	SB030	SB040	SB050	SB060	Unit
Maximum repetitive peak reverse voltage	VRRM	20	30	40	50	60	V
Maximum RMS voltage	VRMS	14	21	28	35	42	V
Maximum DC blocking voltage	VDC	20	30	40	50	60	V
Maximum average forward rectified current at 0.375" (9.5mm) lead length (See Fig. 1)	IF(AV)	0.6					A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	IFSM	20					A
Typical thermal resistance <sup>(2)</sup>	RθJA RθJL	80 20					°C/W
Operating junction temperature range	TJ	-65 to +125			-65 to +150		°C
Storage temperature range	TSTG	-65 to +150					°C

**Electrical Characteristics** (TA = 25°C unless otherwise noted)

Maximum instantaneous forward voltage at 0.6A <sup>(1)</sup>	VF	0.55		0.70		V	
Maximum instantaneous reverse current at rated DC blocking voltage <sup>(1)</sup>	IR	0.5					mA
		10		5.0			

- Notes:**  
 (1) Pulse test: 300µs pulse width, 1% duty cycle  
 (2) Thermal resistance junction to lead P.C.B. mounted 0.375" (9.5mm) lead length

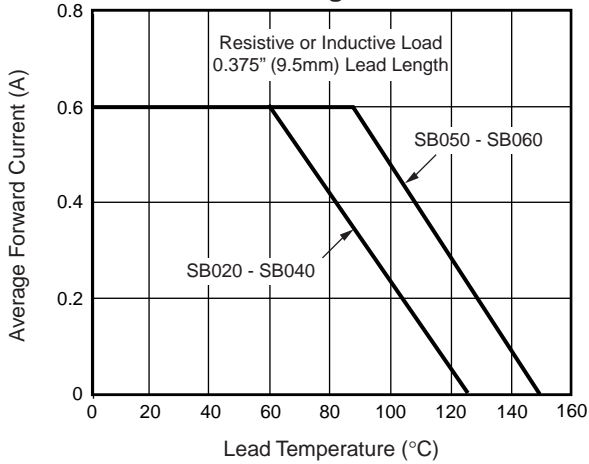
# SB020 thru SB060



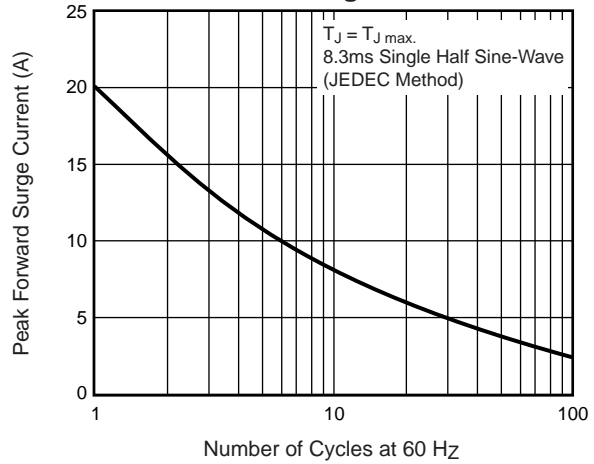
Vishay Semiconductors  
formerly General Semiconductor

## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

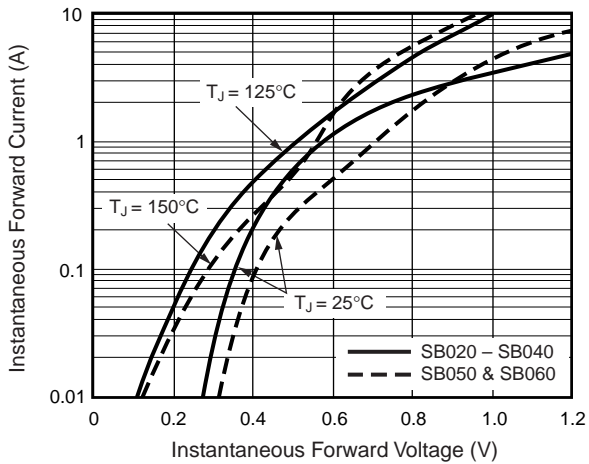
**Fig. 1 – Forward Current Derating Curve**



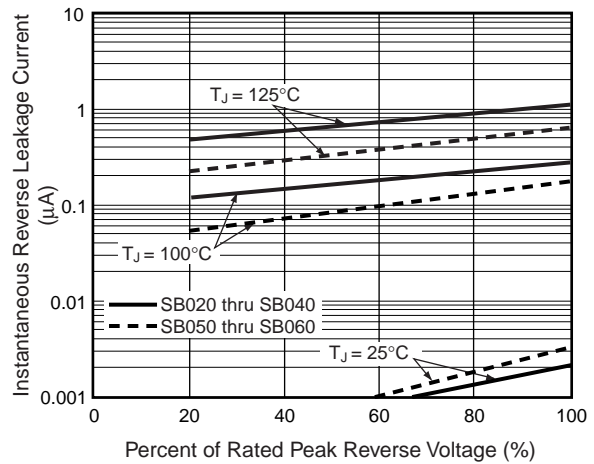
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



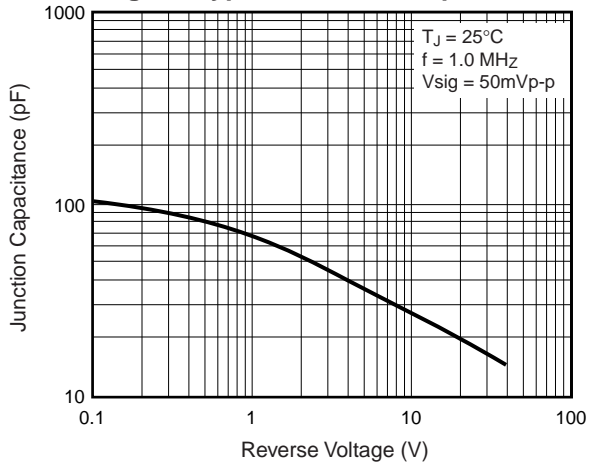
**Fig. 3 – Typical Instantaneous Forward Characteristics**



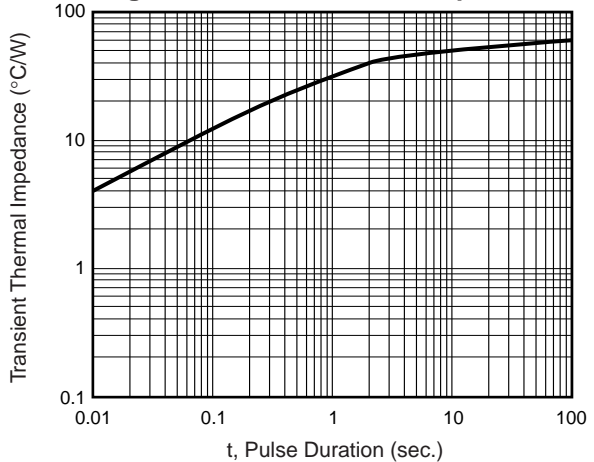
**Fig. 4 – Typical Reverse Leakage Characteristics**



**Fig. 5 – Typical Junction Capacitance**




**Fig. 6 – Transient Thermal Impedance**







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