

### SCHOTTKY BARRIER RECTIFIER

VOLTAGE RANGE: 20 --- 40 V  
CURRENT: 0.6 A

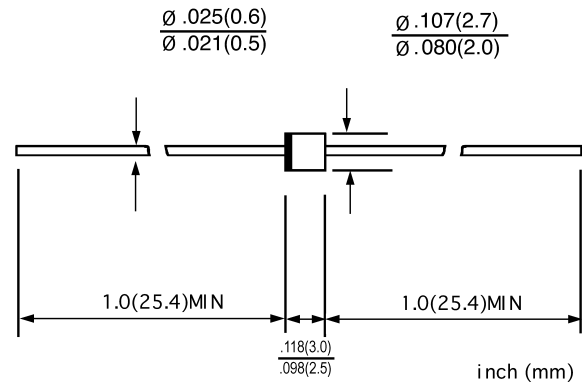
#### FEATURES

- ◇ Metal-Semiconductor junction with guard ring
- ◇ Epitaxial construction
- ◇ Low forward voltage drop, low switching losses
- ◇ High surge capability
- ◇ For use in low voltage, high frequency inverters free wheeling, and polarity protection applications
- ◇ The plastic material carries U/L recognition 94V-0

#### MECHANICAL DATA

- ◇ Case: JEDEC R--1, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.007 ounces, 0.20 grams
- ◇ Mounting position: Any

#### R - 1



#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

		SB020	SB030	SB040	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	20	30	40	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	V
Maximum DC blocking voltage	$V_{DC}$	20	30	40	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	0.6			A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ\text{C}$	$I_{FSM}$	20.0			A
Maximum instantaneous forward voltage @ 0.6 A (Note 1)	$V_F$	0.55			V
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	0.5 10.0			mA
Typical junction capacitance (Note 2)	$C_J$	60			pF
Typical thermal resistance (Note 3)	$R_{\theta JA}$	20			°C/W
Operating junction temperature range	$T_J$	- 55 ---- + 125			°C
Storage temperature range	$T_{STG}$	- 55 ---- + 150			°C

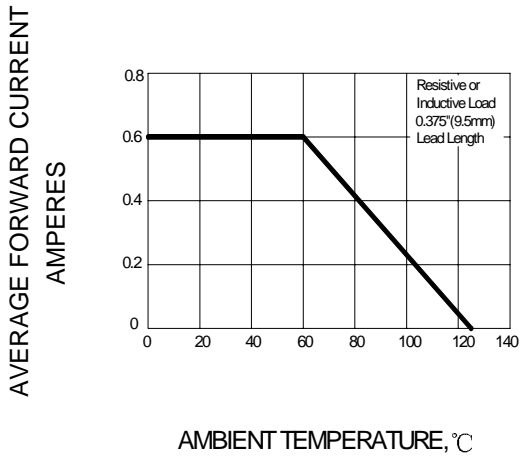
NOTE: 1. Pulse test : 300  $\mu$ s pulse width, 1% duty cycle.

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

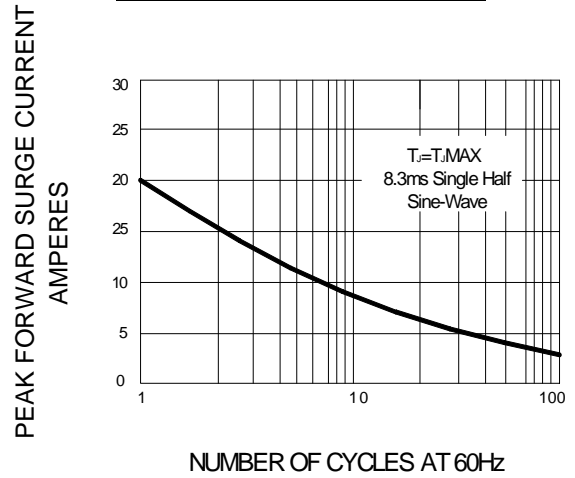
3. Thermal resistance junction to ambient

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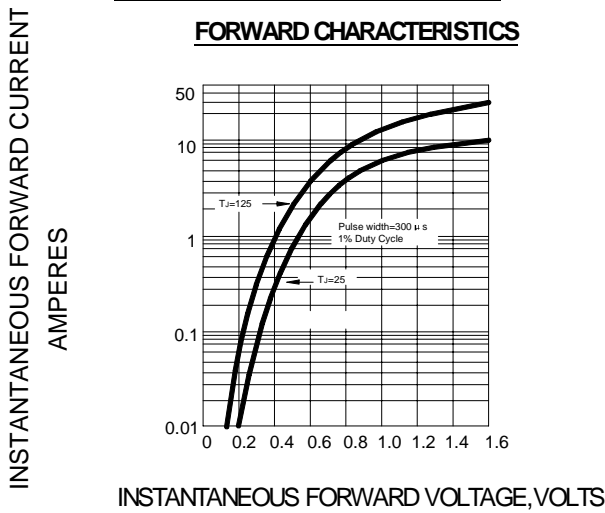
**FIG.1 – FORWARD CURRENT DERATING CURVE**



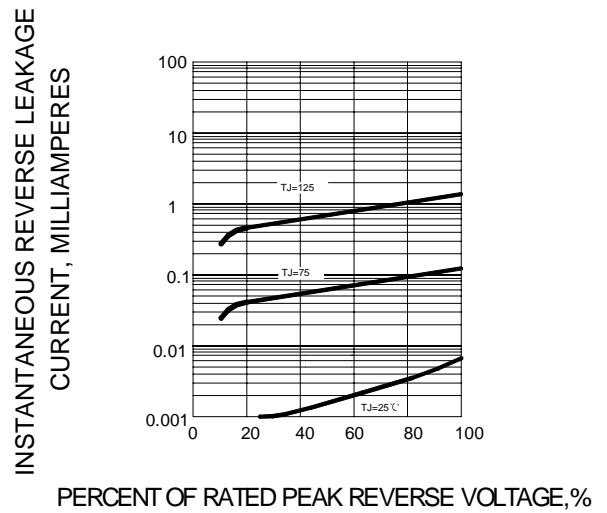
**FIG.2 –MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



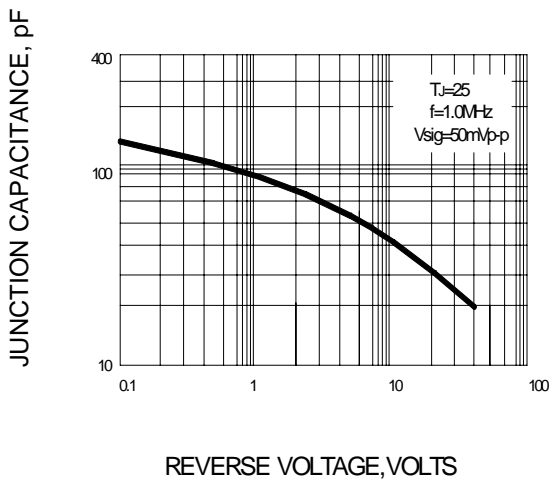
**FIG.3 –TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG.4–TYPICAL REVERSE CHARACTERISTICS**



**FIG.5–TYPICAL JUNCTION CAPACITANCE**



**FIG.6–TYPICAL TRANSIENT THERMAL IMPEDANCE**

