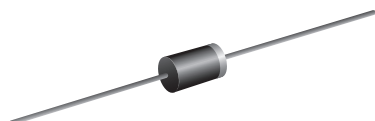


## Schottky Barrier Plastic Rectifier


**DO-15 (DO-204AC)**

### FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2.0 A
$V_{RRM}$	20 V, 30 V, 40 V, 50 V, 60 V
$I_{FSM}$	60 A
$V_F$	0.50 V, 0.68 V
$T_J$ max.	125 °C, 150 °C
Package	DO-15 (DO-204AC)
Circuit configuration	Single

### TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

### MECHANICAL DATA

**Case:** DO-15 (DO-204AC)

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

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	20	30	40	50	60	V
Maximum RMS voltage	V <sub>RMS</sub>	14	21	28	35	42	V
Maximum DC blocking voltage	V <sub>DC</sub>	20	30	40	50	60	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)	I <sub>F(AV)</sub>	2.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	60					A
Maximum full load reverse current, full cycle average at T <sub>A</sub> = 75 °C	I <sub>R(AV)</sub>	30					mA
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000					V/μs
Operating junction temperature range	T <sub>J</sub>	-65 to +125			-65 to +150		°C
Storage temperature range	T <sub>STG</sub>	-65 to +150					°C

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

PARAMETER	TEST CONDITIONS		SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT
Maximum instantaneous forward voltage	2.0 A		$V_F^{(1)}$	0.50			0.68		V
Maximum instantaneous reverse current at rated DC blocking voltage		$T_A = 25\text{ }^{\circ}\text{C}$	$I_R^{(1)}$	0.50					mA
		$T_A = 100\text{ }^{\circ}\text{C}$		15		8.0			
Typical junction capacitance			$C_J$	170					pF

**Note**

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

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

PARAMETER	SYMBOL	SB220	SB230	SB240	SB250	SB260	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	45					°C/W
	R <sub>θJL</sub> <sup>(1)</sup>	14					

**Note**

<sup>(1)</sup> Thermal resistance junction to lead PCB mounted 0.375" (9.5 mm) lead length

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SB240-E3/54	0.398	54	4000	13" diameter paper tape and reel
SB240-E3/73	0.398	73	2000	Ammo pack packaging

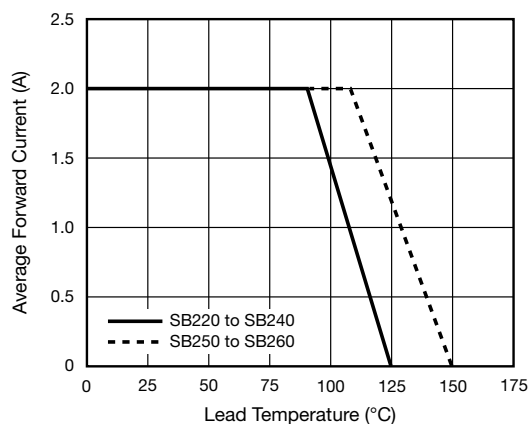
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

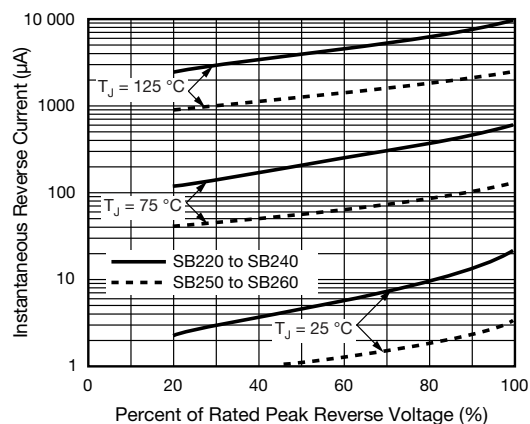


Fig. 4 - Typical Reverse Characteristics

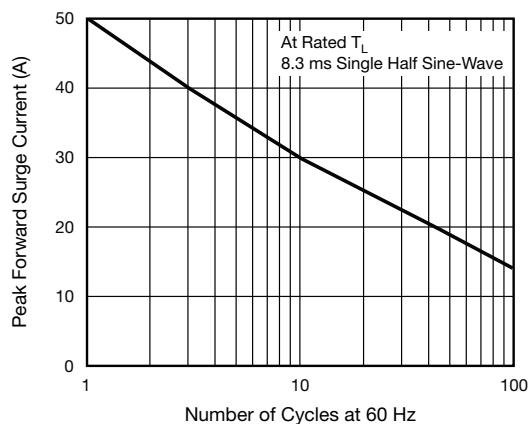


Fig. 2 - Maximum Non-Repetitive Surge Current

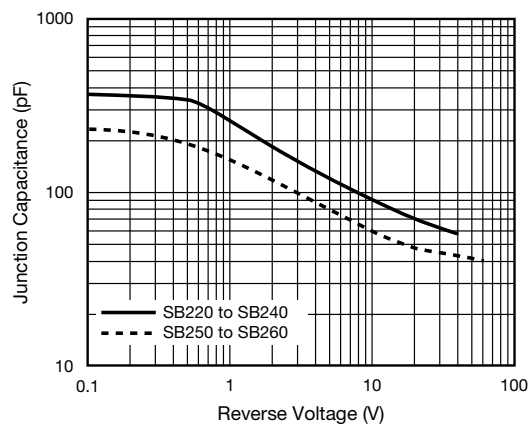


Fig. 5 - Typical Junction Capacitance

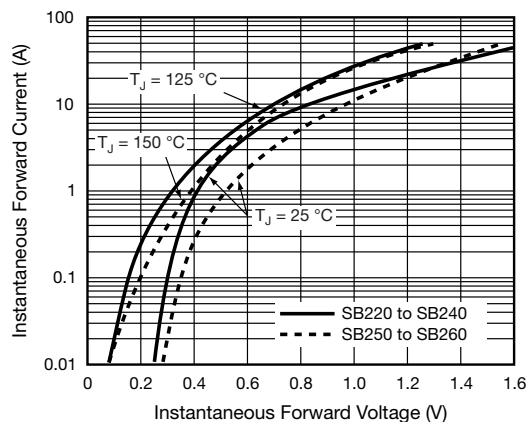


Fig. 3 - Typical Instantaneous Forward Characteristics

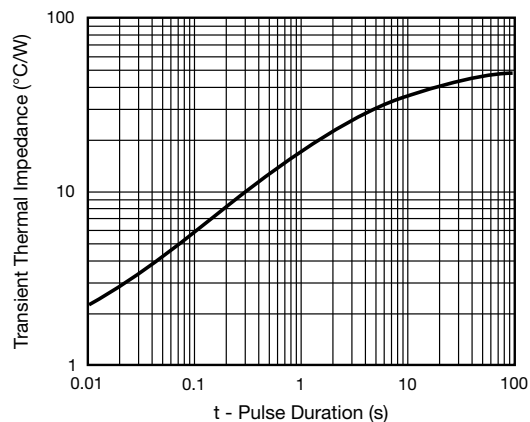
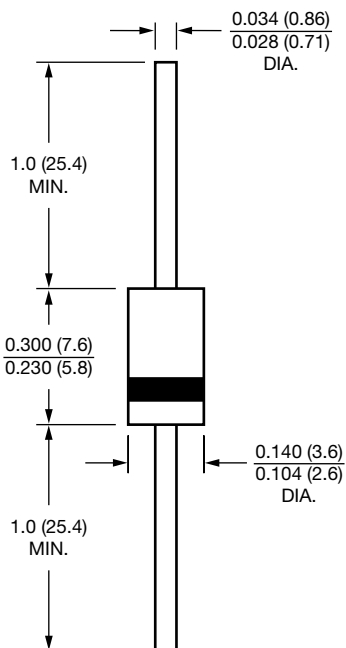


Fig. 6 - Typical Transient Thermal Impedance



**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-15 (DO-204AC)**





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