



## Surface Mount Schottky Barrier Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
$V_{RRM}$	20 V to 60 V
$I_{FSM}$	30 A
$V_F$	0.52 V, 0.75 V
$T_j$ max.	125 °C, 150 °C



DO-214AC (SMA)

### Features

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- Meets MSL level 1, per J-STD-020C
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** DO-214AC (SMA)

Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Matte tin plated (E3 Suffix) 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

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

Parameter	Symbol	B120	B130	B140	B150	B160	Unit
Device marking code		B12	B13	B14	B15	B16	V
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	V
Maximum average forward rectified current at $T_L$ (See Fig. 1)	$I_{F(AV)}$	1.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30					A
Voltage rate of change (rated $V_R$ )	dv/dt	10000					V/ $\mu$ s
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	B120	B130	B140	B150	B160	Unit	
Maximum instantaneous forward voltage	at 1.0 A <sup>(1)</sup>	$V_F$	0.52			0.75		V	
Maximum reverse current at rated $V_R$ <sup>(1)</sup>	$T_A = 25\text{ }^\circ\text{C}$	$I_R$	0.2				5.0		mA
	$T_A = 100\text{ }^\circ\text{C}$		6.0						

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	B120	B130	B140	B150	B160	Unit	
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	100						$^\circ\text{C/W}$
	$R_{\theta JL}$	35						

Notes:

(1) P.C.B. mounted with 0.2 x 0.2" (5.0 x 5.0 mm) copper pad areas

### Ratings and Characteristics Curves

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

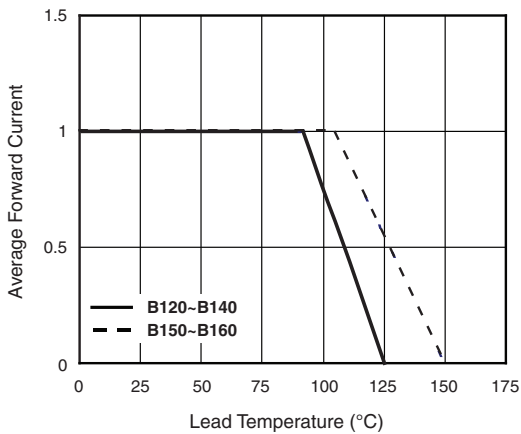


Figure 1. Forward Current Derating Curve

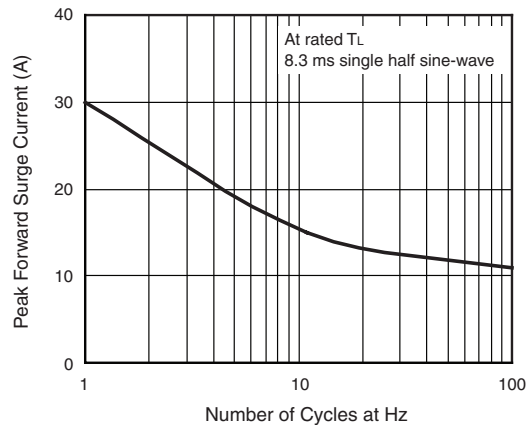


Figure 2. Maximum Non-Repetitive Peak Surge Current

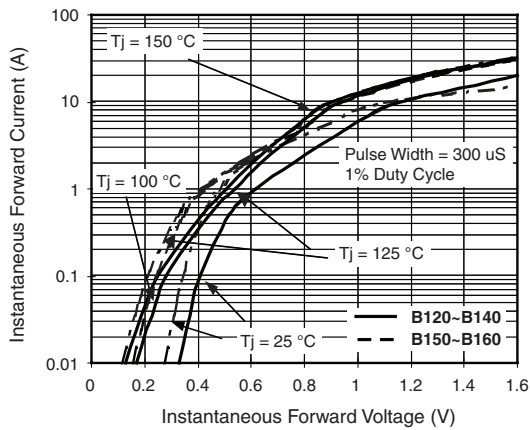


Figure 3. Typical Instantaneous Forward Characteristics

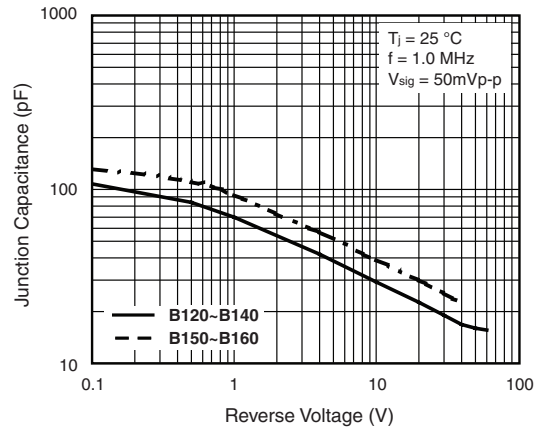


Figure 5. Typical Junction Capacitance

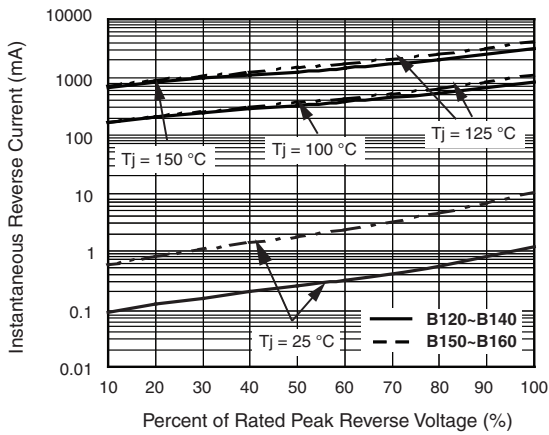
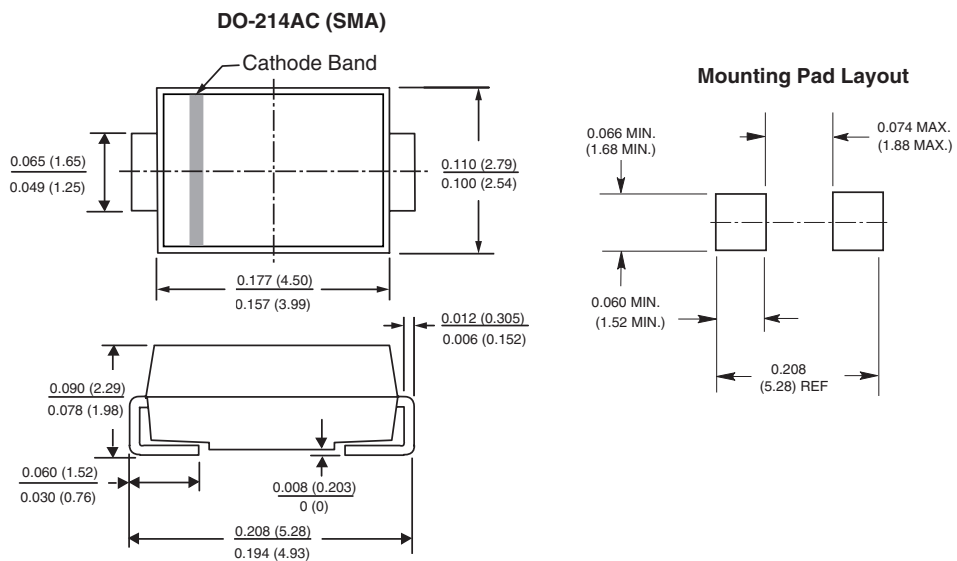


Figure 4. Typical Reverse Characteristics

## Package outline dimensions in inches (millimeters)





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