

# High-Current Density Surface Mount Schottky Rectifier



**DO-214AC (SMA)**

## FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

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

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 2 whisker test

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

| PRIMARY CHARACTERISTICS |                |
|-------------------------|----------------|
| $I_{F(AV)}$             | 2.0 A          |
| $V_{RRM}$               | 30 V, 40 V     |
| $I_{FSM}$               | 50 A           |
| $V_F$                   | 0.50 V, 0.55 V |
| $T_J \text{ max.}$      | 150 °C         |
| Package                 | DO-214AC (SMA) |
| Diode variation         | Single die     |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)                     |                |             |       |            |
|------------------------------------------------------------------------------------|----------------|-------------|-------|------------|
| PARAMETER                                                                          | SYMBOL         | B230LA      | B240A | UNIT       |
| Device marking code                                                                |                | B23         | B24   |            |
| Maximum repetitive peak reverse voltage                                            | $V_{RRM}$      | 30          | 40    | V          |
| Maximum RMS voltage                                                                | $V_{RMS}$      | 21          | 28    | V          |
| Maximum DC blocking voltage                                                        | $V_{DC}$       | 30          | 40    | V          |
| Maximum average forward rectified current at $T_L$ (fig. 1)                        | $I_{F(AV)}$    | 2.0         |       | A          |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 50          |       | A          |
| Voltage rate of change (rated $V_R$ )                                              | $dV/dt$        | 10 000      |       | V/ $\mu$ s |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | -65 to +150 |       | °C         |

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

| PARAMETER                              | TEST CONDITIONS |                                    | SYMBOL      | B230LA | B240A | UNIT |
|----------------------------------------|-----------------|------------------------------------|-------------|--------|-------|------|
| Maximum instantaneous forward voltage  | 2.0 A           | $T_J = 25\text{ }^{\circ}\text{C}$ | $V_F^{(1)}$ | 0.5    | 0.55  | V    |
| Maximum reverse current at rated $V_R$ |                 | $T_J = 25\text{ }^{\circ}\text{C}$ | $I_R^{(2)}$ | 0.5    | 0.5   | mA   |

**Notes**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle(2) Pulse test: Pulse width  $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                  | SYMBOL                | B230LA | B240A | UNIT |
|----------------------------|-----------------------|--------|-------|------|
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 110    |       | °C/W |
|                            | $R_{\theta JL}^{(1)}$ | 28     |       |      |

**Note**

(1) Aluminum substrate mounted

**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
|---------------|-----------------|------------------------|---------------|------------------------------------|
| B230LA-M3/61T | 0.064           | 61T                    | 1800          | 7" diameter plastic tape and reel  |
| B230LA-M3/5AT | 0.064           | 5AT                    | 7500          | 13" diameter plastic tape and reel |

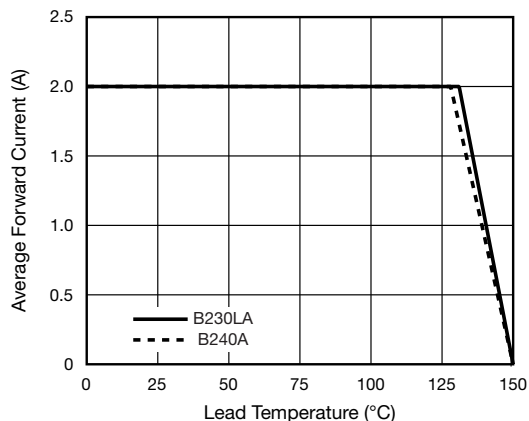
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

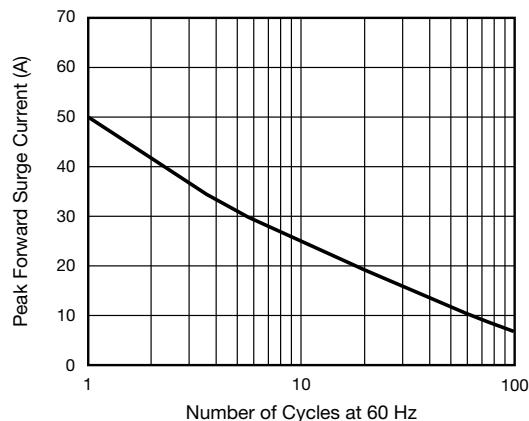


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

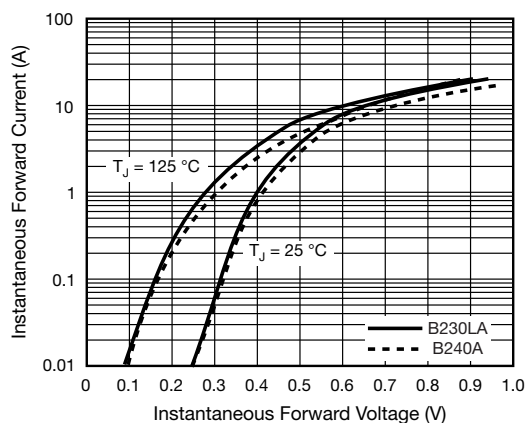


Fig. 3 - Typical Instantaneous Forward Characteristics

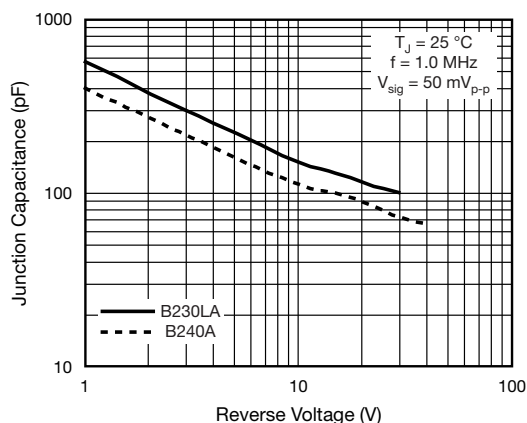


Fig. 5 - Typical Junction Capacitance

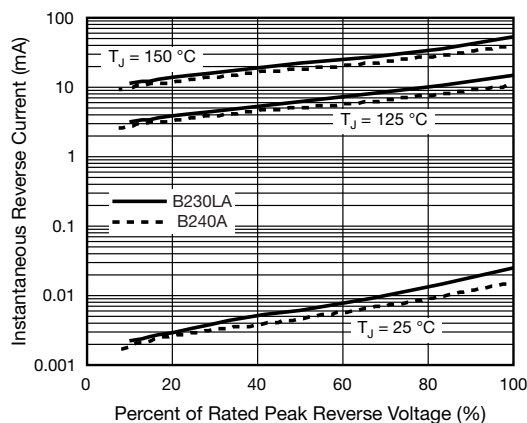
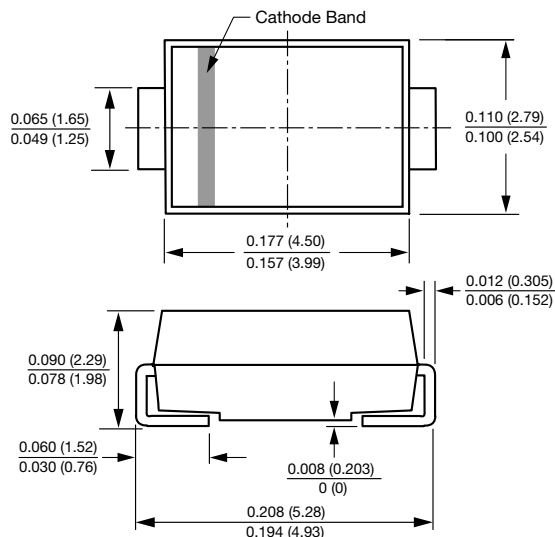


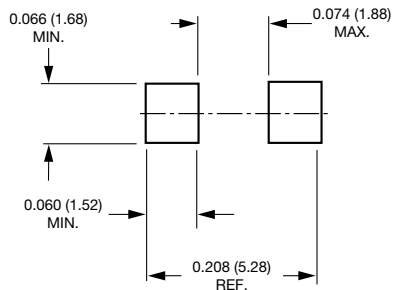
Fig. 4 - Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-214AC (SMA)



#### Mounting Pad Layout





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