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# 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

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 |
| $T_J$ max. | 150 °C |
| Package | DO-214AC (SMA) |
| Diode variation | Single die |

**MAXIMUM RATINGS** ($T_A$ = 25 °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/µs |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -65 to +150 | | °C |


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| ELECTRICAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | TEST CONDITIONS | | SYMBOL | B230LA | B240A | UNIT |
| Maximum instantaneous forward voltage | 2.0 A | $T_J$ = 25 °C | $V_F$ (1) | 0.5 | 0.55 | V |
| Maximum reverse current at rated $V_R$ | | $T_J$ = 25 °C | $I_R$ (2) | 0.5 | 0.5 | mA |

**Notes**

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

| THERMAL CHARACTERISTICS ($T_A$ = 25 °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 °C unless otherwise noted)

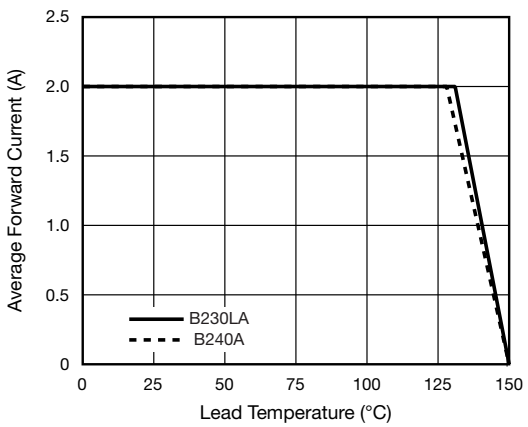



Fig. 1 - Forward Current Derating Curve

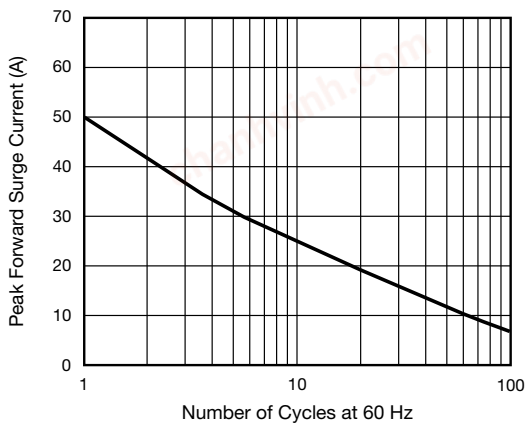



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current


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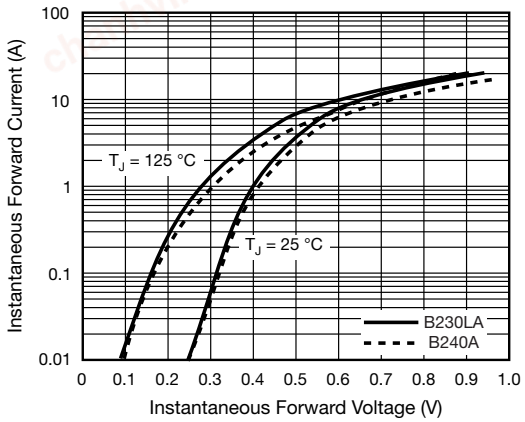



Fig. 3 - Typical Instantaneous Forward Characteristics

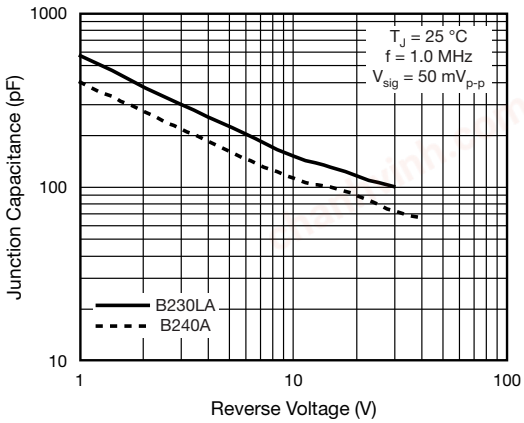



Fig. 5 - Typical Junction Capacitance

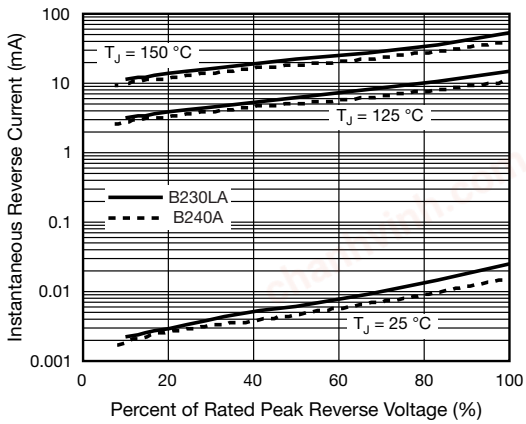
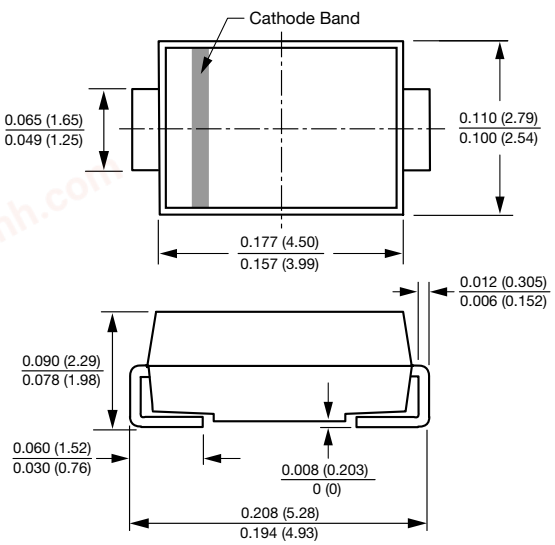


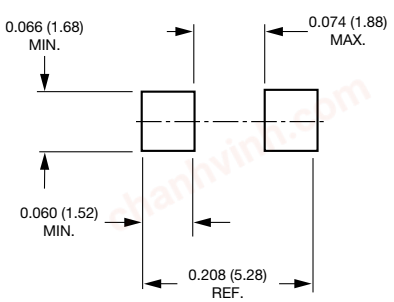

Fig. 4 - Typical Reverse Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-214AC (SMA)




### Mounting Pad Layout





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