

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 ($T_A = 25\text{ °C}$ 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/ μ 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 μs 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 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}^{(1)}$ | 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)

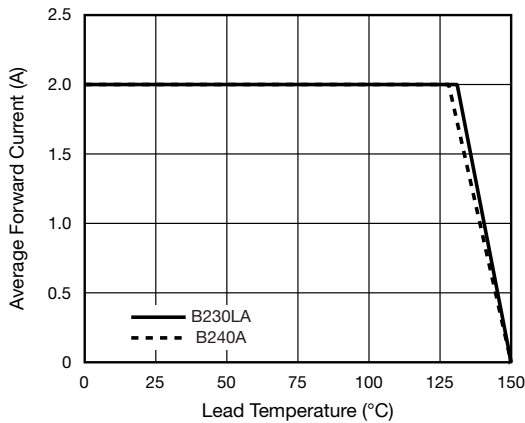


Fig. 1 - Forward Current Derating Curve

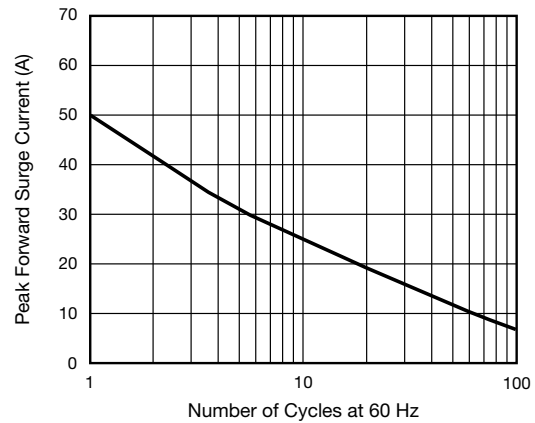


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

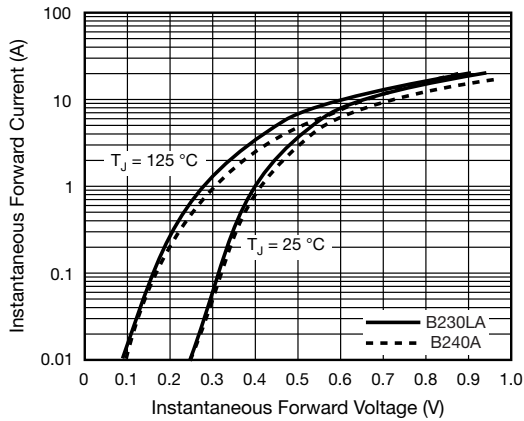


Fig. 3 - Typical Instantaneous Forward Characteristics

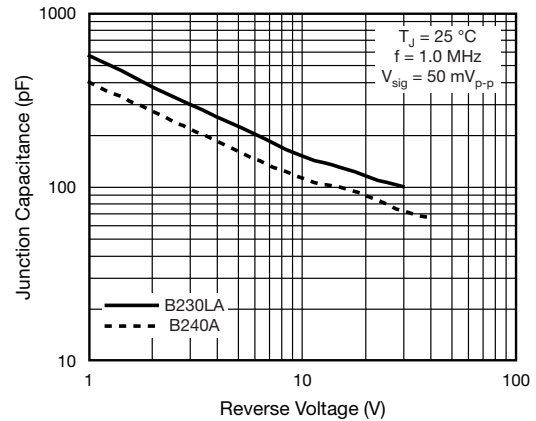


Fig. 5 - Typical Junction Capacitance

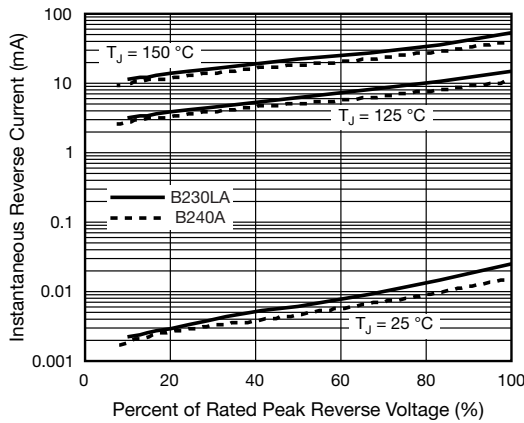
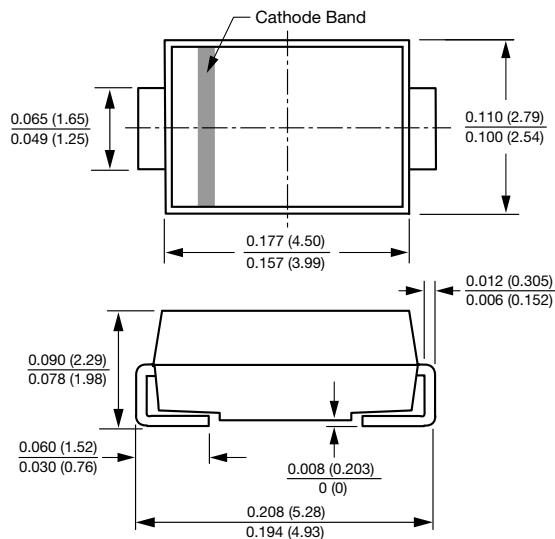


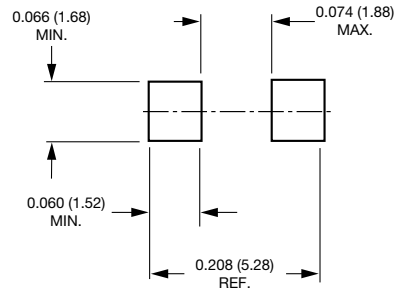
Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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