

High-Current Density Surface-Mount Schottky Rectifier


SMA (DO-214AC)

Cathode  Anode

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

LINKS TO ADDITIONAL RESOURCES



TYPICAL APPLICATIONS

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

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 | SMA (DO-214AC) |
| Circuit configuration | Single |

MECHANICAL DATA

Case: SMA (DO-214AC)

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

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

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

Notes

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

(2) Pulse test: Pulse width \leq 40 ms



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

| PARAMETER | SYMBOL | B230LA | B240A | UNIT |
|----------------------------|---------------------------------|--------|-------|------|
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 110 | | °C/W |
| | R _{θJL} ⁽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)

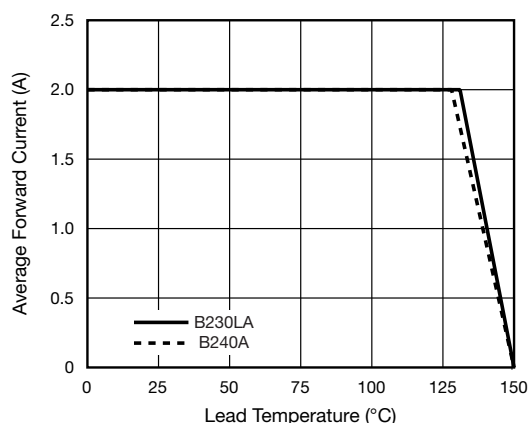


Fig. 1 - Forward Current Derating Curve

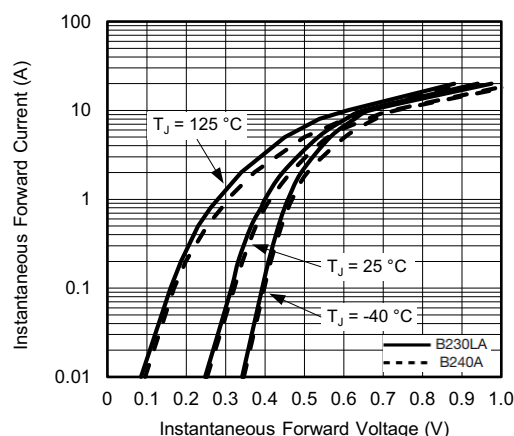


Fig. 3 - Typical Instantaneous Forward Characteristics

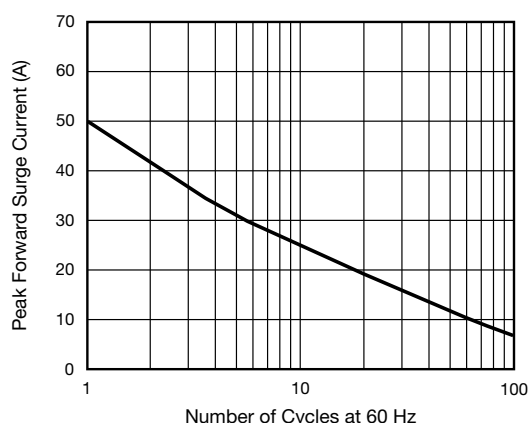


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

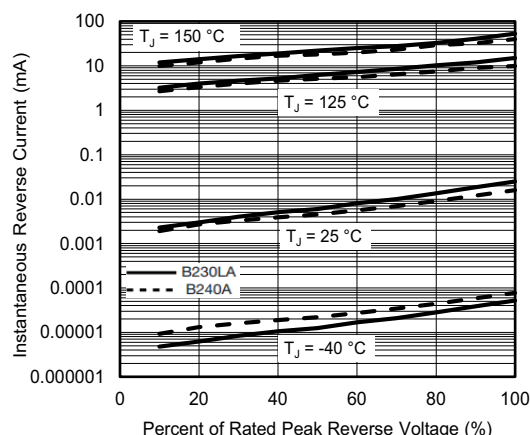


Fig. 4 - Typical Reverse Characteristics

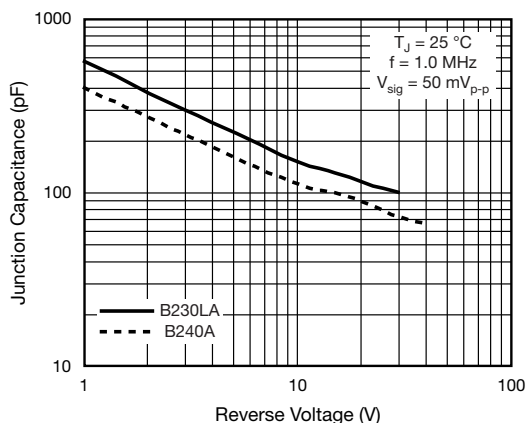
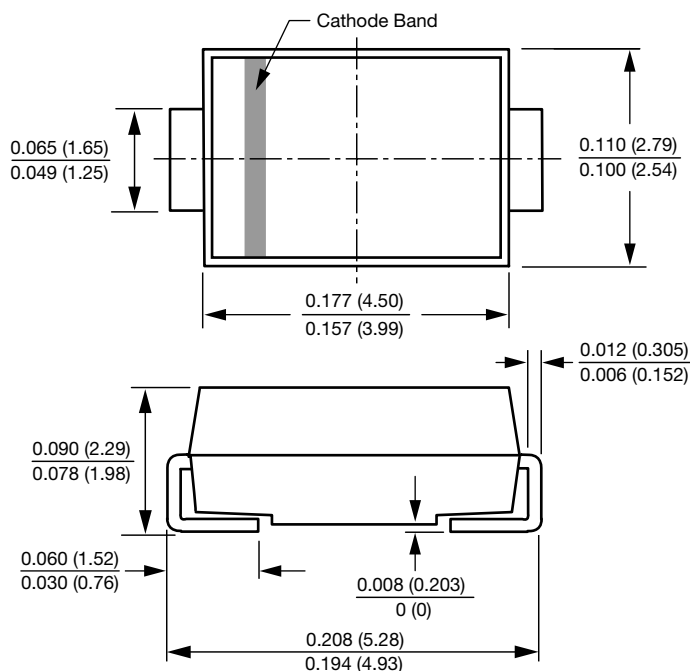


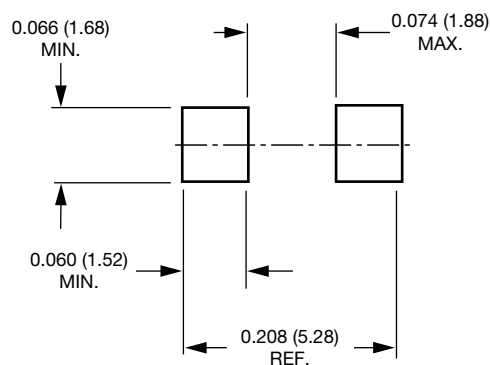
Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMA (DO-214AC)



Mounting Pad Layout





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