

## Product Summary

B250AE/B260AE  
B250BE/B260BE

| V <sub>RRM</sub> (V) | I <sub>O</sub> (A) | V <sub>F(MAX)</sub> (V)<br>@ +25°C | I <sub>R(MAX)</sub> (mA)<br>@ +25°C |
|----------------------|--------------------|------------------------------------|-------------------------------------|
| 50                   | 2                  | 0.65                               | 0.10                                |
| 60                   | 2                  | 0.65                               | 0.20                                |

## Description and Applications

The Schottky rectifier providing low V<sub>F</sub> and excellent reverse leakage stability at high temperatures, this device is ideal for use in general rectification applications such as:

- Boost Diode
- Blocking Diode
- Recirculating Diode

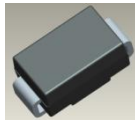
## Features and Benefits

- Reduced Low Forward Voltage Drop (V<sub>F</sub>); Better Efficiency and Cooler Operation
- Reduced High-temperature Reverse Leakage; Increased Reliability against Thermal Runaway Failure in High Temperature Operation.
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

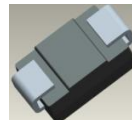
## Mechanical Data

- Case: SMA, SMB
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 
- Polarity: Cathode Band
- Weight: SMA-0.063 grams (Approximate)  
SMB-0.093 grams (Approximate)

SMA/SMB



Top View



Bottom View

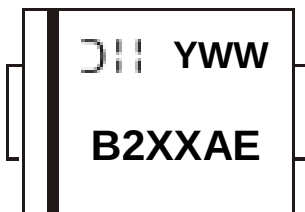
## Ordering Information (Note 4)

| Part Number | Case | Packaging         |
|-------------|------|-------------------|
| B250AE-13   | SMA  | 5,000/Tape & Reel |
| B260AE-13   | SMA  | 5,000/Tape & Reel |
| B250BE-13   | SMB  | 3,000/Tape & Reel |
| B260BE-13   | SMB  | 3,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information

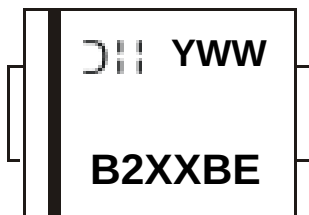
SMA



B2XXAE = Product Type Marking Code, ex: B250AE  
 = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 7 for 2017)  
 WW = Week Code (01 to 53)

## Marking Information (Cont.)

SMB



B2XXBE = Product Type Marking Code, ex: B250BE

 = Manufacturers' Code Marking

YWW = Date Code Marking

Y = Last Digit of Year (ex: 7 for 2017)

WW = Week Code (01 to 53)

## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

| Characteristic                                                                                      | Symbol                                                  | B250AE<br>B250BE | B260AE<br>B260BE | Unit |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------|------------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage              | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>RM</sub> | 50               | 60               | V    |
| Average Rectified Output Current                                                                    | I <sub>O</sub>                                          | 2                |                  | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                        | 50               |                  | A    |

## Thermal Characteristics

| Characteristic                                          | Symbol                            | Value       | Unit |
|---------------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Ambient (Note 5) | R <sub>θJA</sub>                  | 95          | °C/W |
| SMA                                                     |                                   | 90          |      |
| Typical Thermal Resistance Junction to Case (Note 5)    | R <sub>θJC</sub>                  | 45          | °C/W |
| SMA                                                     |                                   | 40          |      |
| Operating and Storage Temperature Range                 | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                 | Symbol         | Min | Typ          | Max       | Unit | Test Condition                                                                              |
|--------------------------------|----------------|-----|--------------|-----------|------|---------------------------------------------------------------------------------------------|
| Forward Voltage Drop           | V <sub>F</sub> | —   | 0.55<br>0.52 | 0.65<br>— | V    | I <sub>F</sub> = 2A, T <sub>J</sub> = +25°C<br>I <sub>F</sub> = 2A, T <sub>J</sub> = +125°C |
| Leakage Current (Note 6)       | I <sub>R</sub> | —   | 0.01         | 0.10      | mA   | V <sub>R</sub> = 50V, T <sub>J</sub> = +25°C                                                |
| B250AE/B250BE                  |                | —   | 0.02         | 0.20      |      | V <sub>R</sub> = 60V, T <sub>J</sub> = +25°C                                                |
| B260AE/B260BE                  |                | —   | 11.5         | —         |      | V <sub>R</sub> = 50V, T <sub>J</sub> = +125°C                                               |
| B250AE/B250BE<br>B260AE/B260BE |                | —   | 14.5         | —         |      | V <sub>R</sub> = 60V, T <sub>J</sub> = +125°C                                               |
| Typical Capacitance            | C <sub>T</sub> | —   | 75           | —         | pF   | V <sub>R</sub> = 4.0V, f = 1MHz                                                             |

Notes: 5. Device mounted on FR-4 substrate, 0.4" x 0.5", 2oz, single-sided, PC boards with 0.2" x 0.25" copper pad.

6. Short duration pulse test used to minimize self-heating effect.

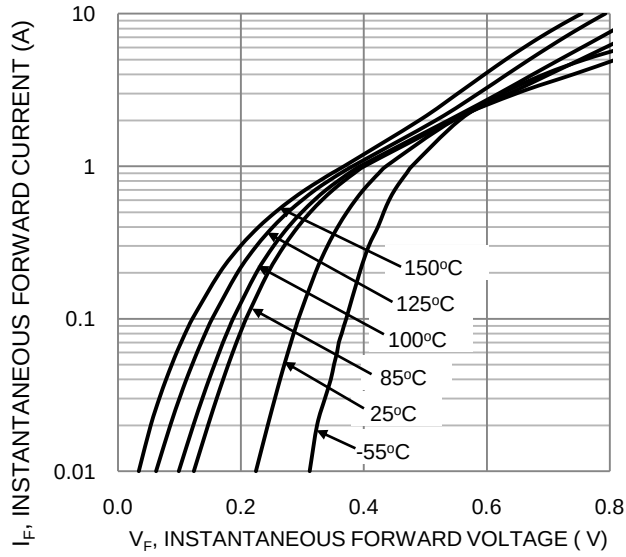


Figure 1. Typical Forward Characteristics

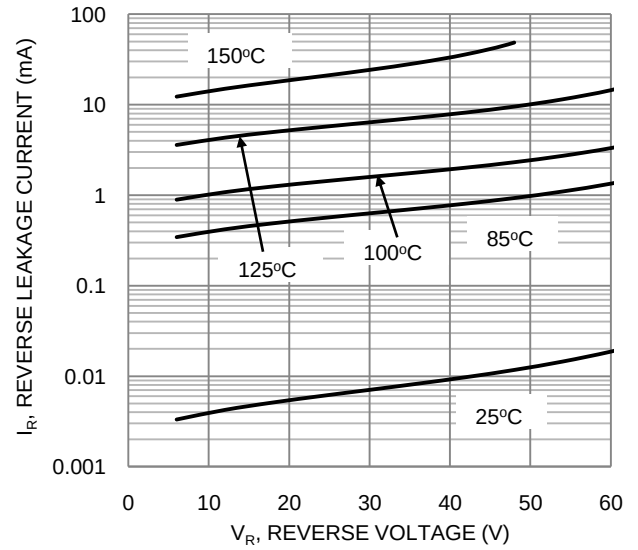


Figure 2. Typical Reverse Characteristics

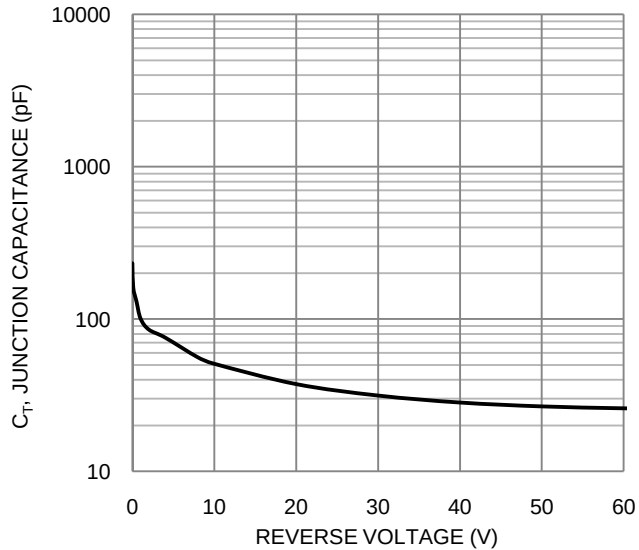


Figure 3. Typical Junction Capacitance

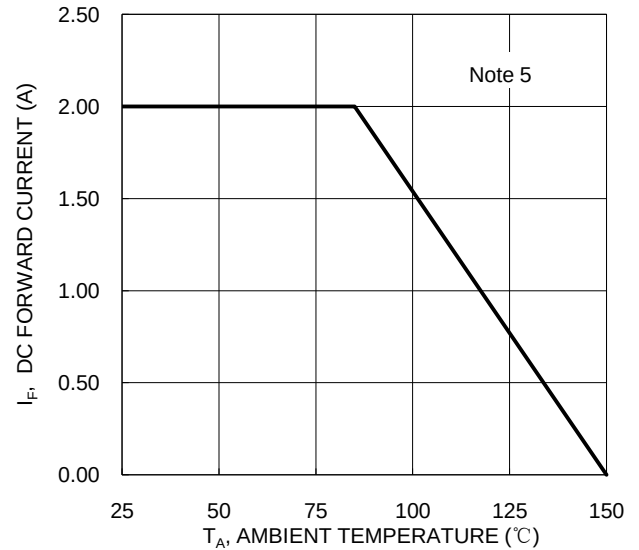
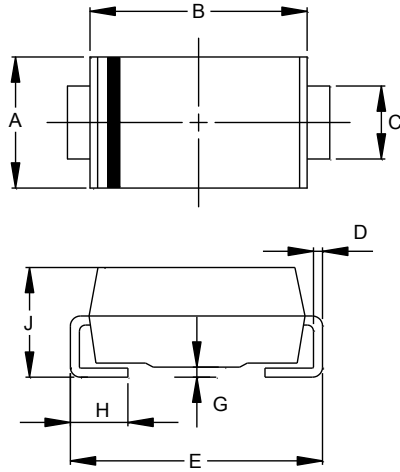


Figure 4. DC Forward Current Derating

## Package Outline Dimensions

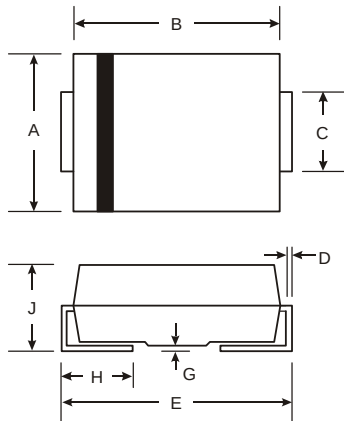
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (1) Package Type: SMA



| SMA                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 2.29 | 2.92 |
| B                    | 4.00 | 4.60 |
| C                    | 1.27 | 1.63 |
| D                    | 0.15 | 0.31 |
| E                    | 4.80 | 5.59 |
| G                    | 0.05 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 1.96 | 2.40 |
| All Dimensions in mm |      |      |

### (2) Package Type: SMB

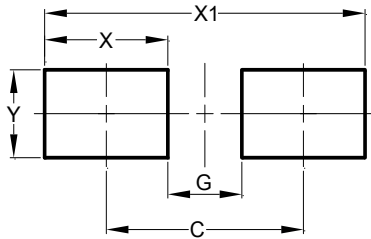


| SMB                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 3.30 | 3.94 |
| B                    | 4.06 | 4.57 |
| C                    | 1.96 | 2.21 |
| D                    | 0.15 | 0.31 |
| E                    | 5.00 | 5.59 |
| G                    | 0.05 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.00 | 2.50 |
| All Dimensions in mm |      |      |

## Suggested Pad Layout

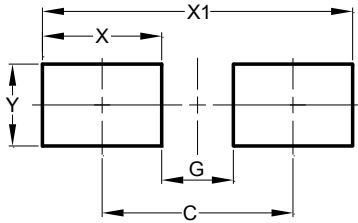
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (1) Package Type: SMA



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.00          |
| G          | 1.50          |
| X          | 2.50          |
| X1         | 6.50          |
| Y          | 1.70          |

### (2) Package Type: SMB



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.30          |
| G          | 1.80          |
| X          | 2.50          |
| X1         | 6.80          |
| Y          | 2.30          |

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