

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Product Summary (@T_A = +25°C)

| V _{RRM} (V) | I _O (A) | V _{F(MAX)} (V) | I _{R(MAX)} (µA) |
|----------------------|--------------------|-------------------------|--------------------------|
| 30 | 1 | 0.55 | 50 |

Applications

- DC-DC Converters
- Mobile Telecomms
- Blocking Diodes
- Reverse Polarity Protection

Features and Benefits

- Very Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.004 grams (Approximate)



Top View

Ordering Information (Note 5)

| Part Number | Case | Packaging |
|-------------|--------|------------------|
| BAT760Q-7 | SOD323 | 3000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/product_compliance_definitions.html.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



LZ = Product Type Marking Code

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | Value | Unit |
|---|--------------|-------|------|
| Peak Repetitive Reverse Voltage | V_{RRM} | 30 | V |
| Working Peak Reverse Voltage | V_{RWM} | | |
| DC Blocking Voltage | V_R | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | V |
| Average Rectified Output Current | I_O | 1 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I_{FSM} | 5.5 | A |

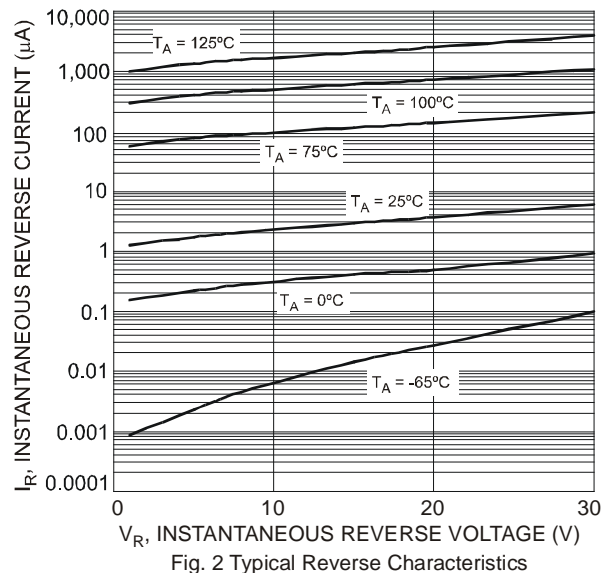
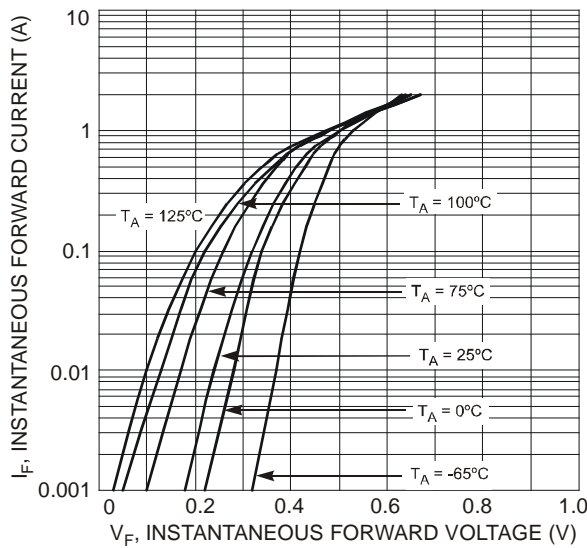
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|---------------------------|
| Power Dissipation | P_D | 235 | mW |
| Typical Thermal Resistance Junction to Ambient (Note 6) | $R_{\theta JA}$ | 426 | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|------------------------------------|-------------|-----|-----|-----|---------------|---|
| Reverse Breakdown Voltage (Note 7) | $V_{(BR)R}$ | 30 | — | — | V | $I_R = 500\mu\text{A}$ |
| Forward Voltage Drop | V_F | — | 245 | 270 | mV | $I_F = 10\text{mA}$ |
| | | — | 320 | 350 | | $I_F = 100\text{mA}$ |
| | | — | 495 | 550 | | $I_F = 1\text{A}$ |
| Leakage Current (Note 7) | I_R | — | 3.0 | 10 | μA | $V_R = 5\text{V}$ |
| | | — | 3.5 | 20 | | $V_R = 8\text{V}$ |
| | | — | 5.0 | 50 | | $V_R = 15\text{V}$ |
| Total Capacitance | C_T | — | 25 | — | pF | $f = 1\text{MHz}, V_R = 5\text{V}_{DC}$ |

Notes: 6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/product_compliance_definitions.html.
7. Short duration pulse test used to minimize self-heating effect.



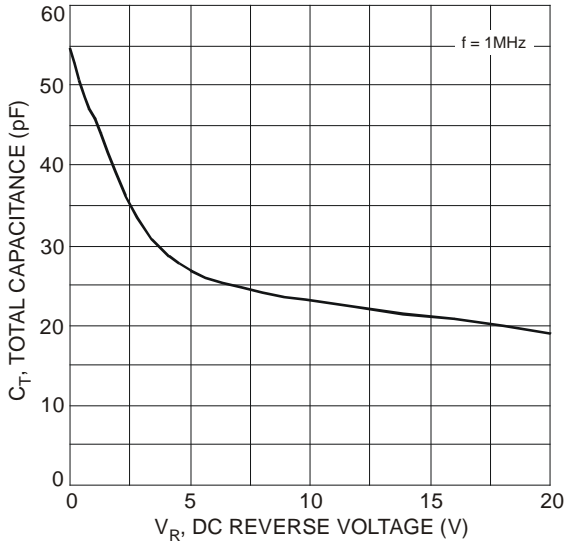


Fig. 3 Total Capacitance vs. Reverse Voltage

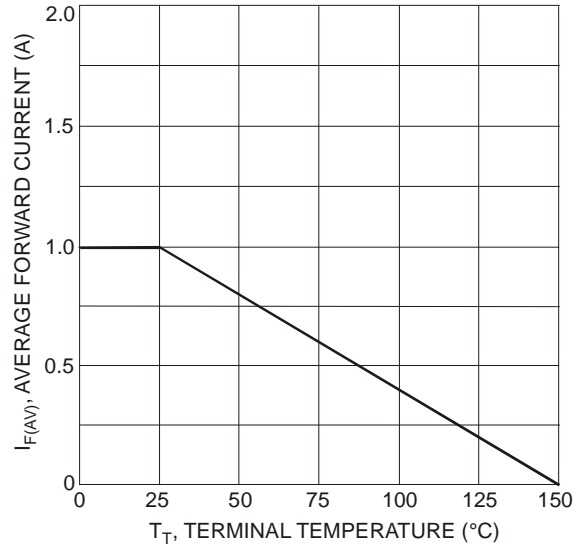
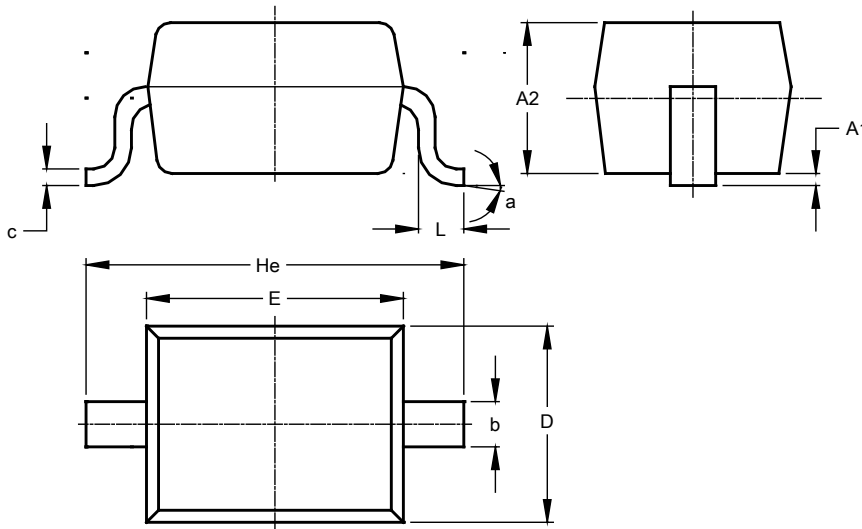


Fig. 4 Forward Current Derating Curve

Package Outline Dimensions

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

SOD323

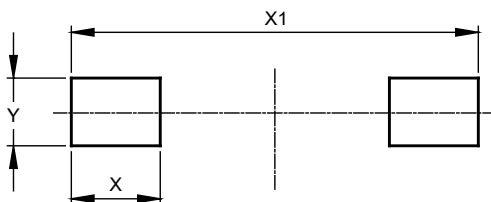


| SOD323 | | | |
|----------------------|------|------|------|
| Dim | Min | Max | Typ |
| A1 | -- | 0.10 | 0.05 |
| A2 | 1.00 | 1.10 | 1.05 |
| b | 0.25 | 0.35 | 0.30 |
| c | 0.10 | 0.15 | 0.11 |
| D | 1.20 | 1.40 | 1.30 |
| E | 1.60 | 1.80 | 1.70 |
| He | 2.30 | 2.70 | 2.50 |
| L | 0.20 | 0.40 | 0.30 |
| a | 0° | 8° | -- |
| All Dimensions in mm | | | |

Suggested Pad Layout

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

SOD323



| Dimensions | Value (in mm) |
|------------|---------------|
| X | 0.590 |
| X1 | 2.700 |
| Y | 0.450 |

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