

Product Summary

| V _{RRM} (V) | I _o (A) | V _{F(MAX)} (V) @ +25°C | I _{R(MAX)} (μA) @ +25°C |
|----------------------|--------------------|------------------------------------|-------------------------------------|
| 100 | 5 | 0.66 | 50 |

Description and Applications

The SDT5A100SB provides very low V_F and extremely excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode in:

- DC-DC Converters
- AC-DC Adaptors

Features and Benefits

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Surface Mount Package
- Polarity: Cathode Band
- Maximum Soldering Temperature +260°C for 30s per JEDEC J-STD-020
- Case Material: Molded Plastic, UL Flammability Rating 94V-0
- Terminals: Finish—Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208③
- Weight: 0.096 grams (Approximate)



Top View



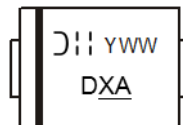
Bottom View

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|---------------|------|------------------|
| SDT5A100SB-13 | SMB | 3000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free/ 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



DXA = Product Type Marking Code
 ⓂⓂⓂ = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 8 for 2018)
 WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°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} | 100 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current | I _O | 5 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 80 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Terminal (Note 5) | R _{θJT} | 25 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|----------------|-----|------|------|------|--|
| Forward Voltage Drop | V _F | — | 0.60 | 0.66 | V | I _F = 5A, T _J = +25°C |
| Leakage Current (Note 6) | I _R | — | 5 | 50 | μA | V _R = 100V, T _J = +25°C |
| | | — | 3 | 15 | mA | V _R = 100V, T _J = +125°C |

Notes: 5. Device mounted on FR-4 substrate, 1" × 1", 2oz, single-sided, PCBs with 0.56" × 0.73" copper pad.
6. Short duration pulse test used to minimize self-heating effect.

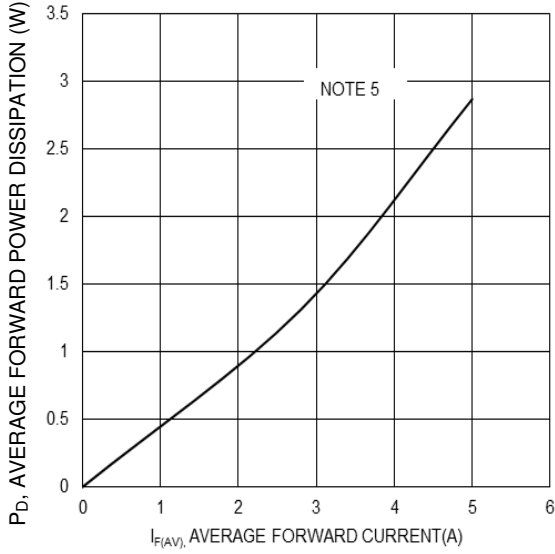


Figure 1 Forward Power Dissipation

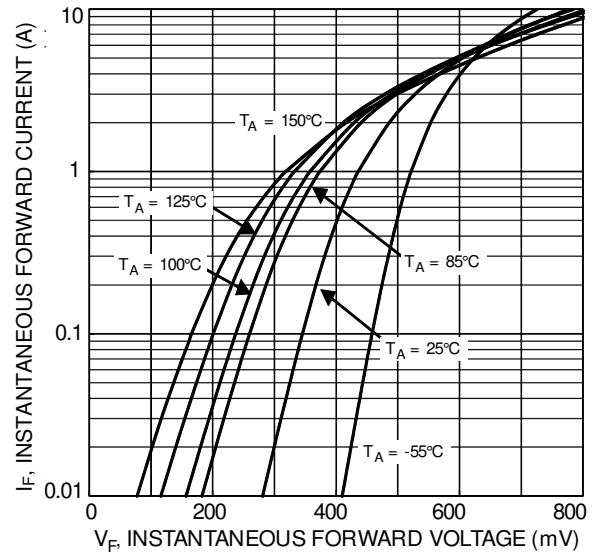


Figure 2 Typical Forward Characteristics

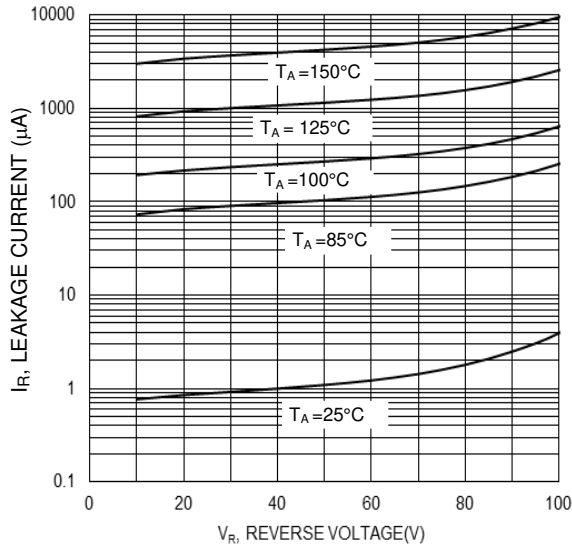


Figure 3 Typical Reverse Characteristics

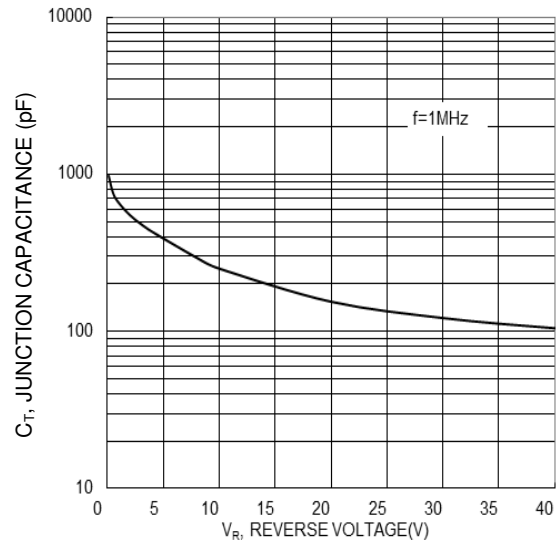


Figure 4 Typical Junction Capacitance

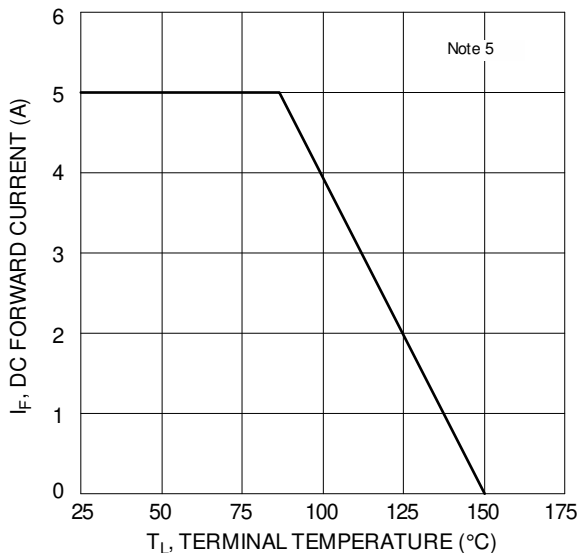
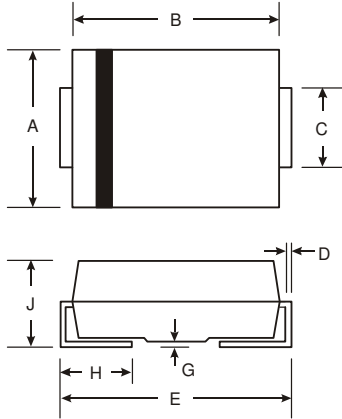


Figure 5 DC Forward Current Derating

Package Outline Dimensions

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

SMB

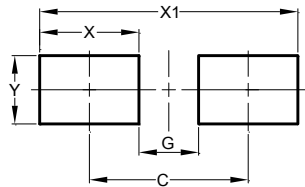


| SMB | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 3.30 | 3.94 |
| B | 4.06 | 4.57 |
| C | 1.96 | 2.21 |
| D | 0.15 | 0.31 |
| E | 5.00 | 5.59 |
| G | 0.05 | 0.20 |
| H | 0.76 | 1.52 |
| J | 2.00 | 2.50 |
| All Dimensions in mm | | |

Suggested Pad Layout

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

SMB



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

NEW PRODUCT

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