

Product Summary

| V_{RRM} (V) | I_O (A) | V_F Typ (V) @ +25°C | I_R Max (μ A) @ +25°C |
|---------------|-----------|--------------------------|---------------------------------|
| 100 | 40 | 0.79 | 120 |

Description and Applications

The SDT40B100ST 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:

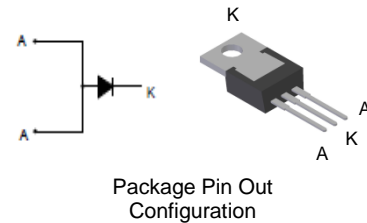
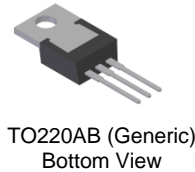
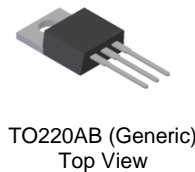
- DC-DC Converters
- AC-DC Adaptors

Features

- 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

- Case: TO220AB (Generic)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 ③
- Weight: 1.85 grams (Approximate)

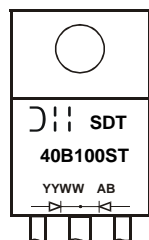


Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|-------------------|----------------|
| SDT40B100ST | TO220AB (Generic) | 50 Pieces/Tube |

- 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



= Manufacturer's Marking
 SDT40B100ST = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 18 = 2018)
 WW = Week (01 to 53)

Maximum Ratings (Per Device) (@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 per Device | I _O | 40 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 250 | A |

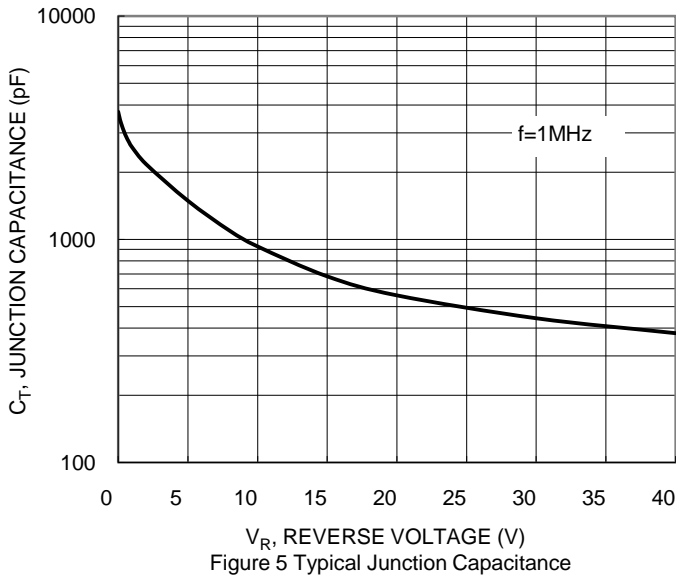
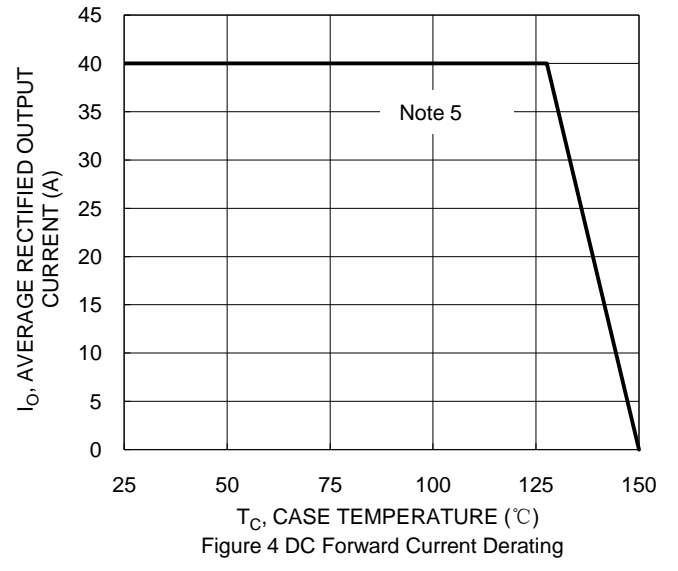
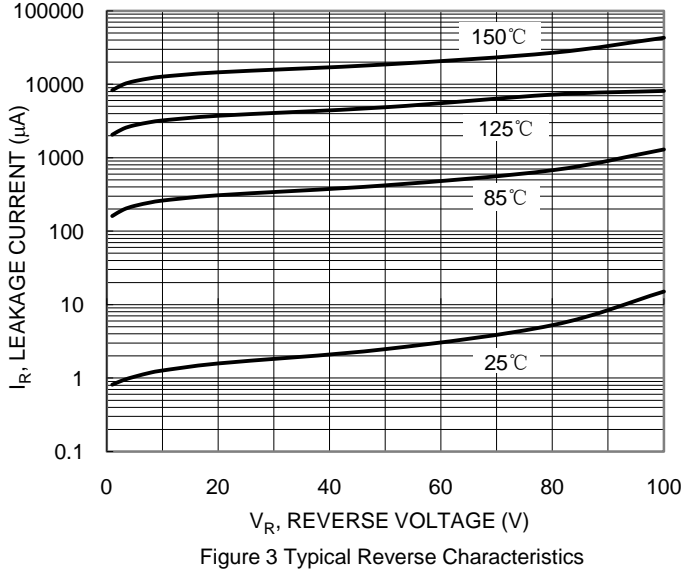
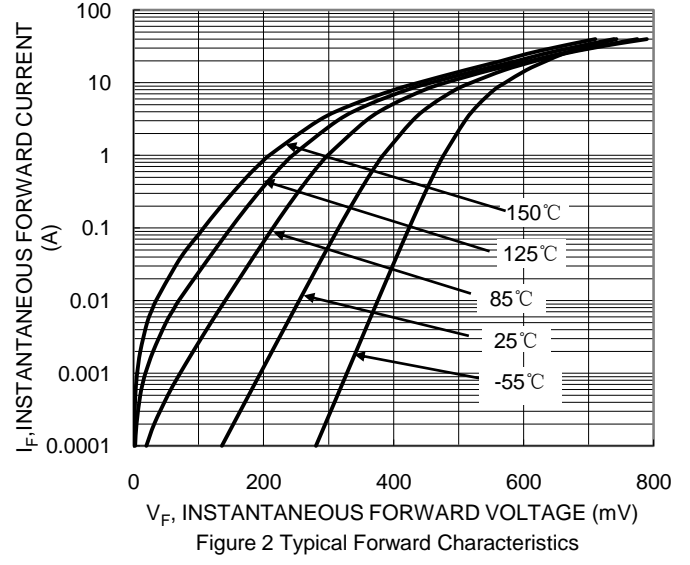
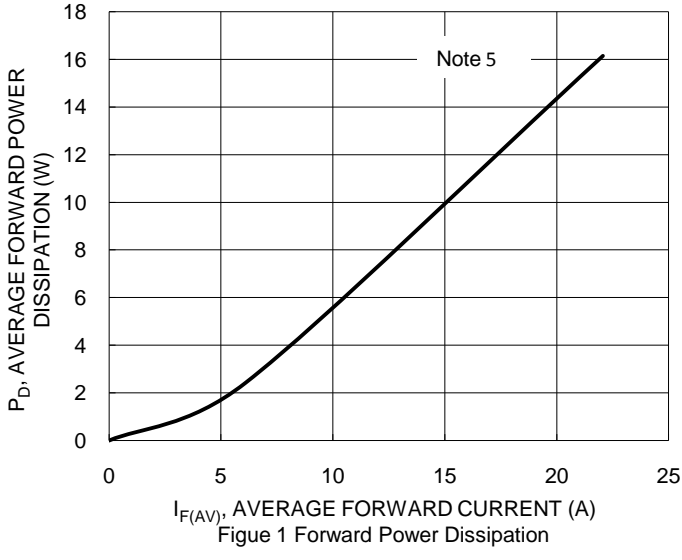
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance (Note 5) Package = TO220AB(Generic) | R _{θJC} | 2 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|----------------|-----|------|------|----------|--|
| Forward Voltage Drop | V _F | — | 0.62 | 0.68 | V | I _F = 20A, T _J = +25°C |
| | | — | 0.59 | 0.65 | | I _F = 20A, T _J = +125°C |
| | | — | 0.79 | — | | I _F = 40A, T _J = +25°C |
| Leakage Current (Note 6) | I _R | — | 15 | 120 | μA mA | V _R = 100V, T _J = +25°C |
| | | — | — | 30 | | V _R = 100V, T _J = +125°C |

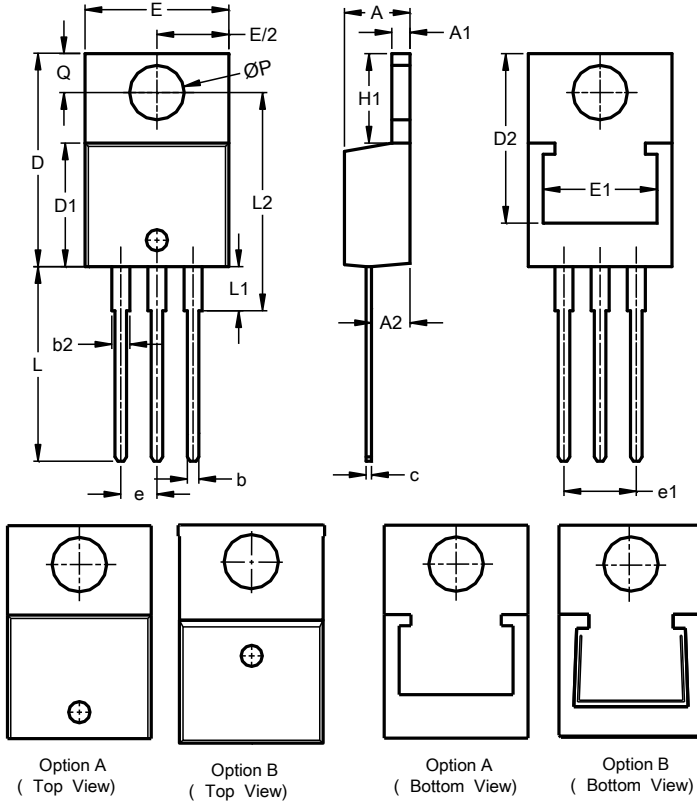
Notes: 5. With 50mm*50mm*23mm Al heatsink
6. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

TO220AB (Generic)



| TO220AB (Generic) | | | |
|-----------------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 3.56 | 4.82 | - |
| A1 | 0.51 | 1.39 | - |
| A2 | 2.04 | 2.92 | - |
| b | 0.39 | 1.01 | 0.81 |
| b2 | 1.15 | 1.77 | 1.24 |
| c | 0.356 | 0.61 | - |
| D | 14.22 | 16.51 | - |
| D1 | 8.39 | 9.01 | - |
| D2 | 11.45 | 12.87 | - |
| e | - | - | 2.54 |
| e1 | - | - | 5.08 |
| E | 9.66 | 10.66 | - |
| E1 | 6.86 | 8.89 | - |
| H1 | 5.85 | 6.85 | - |
| L | 12.70 | 14.73 | - |
| L1 | - | 4.42 | - |
| L2 | 15.80 | 17.51 | 16.00 |
| P | 3.54 | 4.08 | - |
| Q | 2.54 | 3.42 | - |
| All Dimensions in mm | | | |

NEW PRODUCT

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