

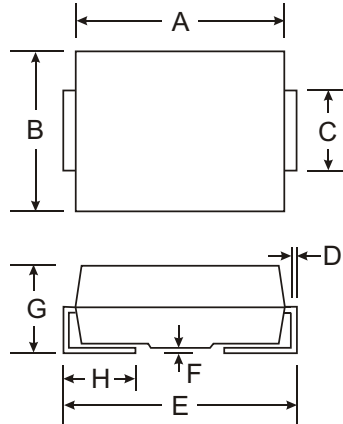
Features

- 30A Peak Pulse Current @ 10/1000 s
- 150A Peak Pulse Current @ 8/20 s
- 58 - 320V Stand-Off Voltages
- Oxide-Glass Passivated Junction
- Bi-Directional Protection In a Single Device
- High Off-State impedance and Low On-State Voltage

UNDER DEVELOPMENT

Mechanical Data

- Case: SMB, Molded Plastic
- Plastic Material: UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Polarity: None; Bi-Directional Devices Have No Polarity Indicator
- Weight: 0.093 grams (approx.)
- Marking: Date Code and Marking Code (See Page 4)
- Ordering Information: See Page 4



| SMB | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 4.06 | 4.57 |
| B | 3.30 | 3.94 |
| C | 1.96 | 2.21 |
| D | 0.15 | 0.31 |
| E | 5.21 | 5.59 |
| F | 0.05 | 0.20 |
| G | 2.01 | 2.62 |
| H | 0.76 | 1.52 |
| All Dimensions in mm | | |

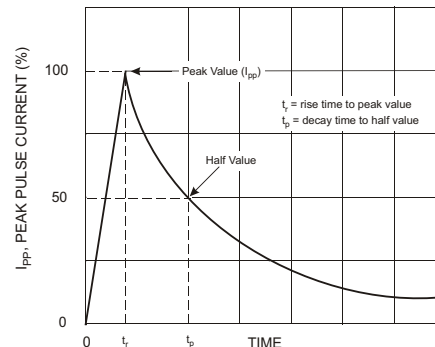
Maximum Ratings @ T_A = 25 C unless otherwise specified

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

| Characteristic | Symbol | Value | Unit |
|--|---------------------|-------------|------|
| Non-Repetitive Peak Impulse Current @ 10/1000us | I _{pp} | 30 | A |
| Non-Repetitive Peak On-State Current @ 8.3ms (one-half cycle) | I _{TSM} | 15 | A |
| Junction Temperature Range | T _j | -40 to +150 | C |
| Storage Temperature Range | T _{STG} | -55 to +150 | C |
| Thermal Resistance, Junction to Lead | R _{JL} | 30 | °C/W |
| Thermal Resistance, Junction to Ambient | R _{JA} | 120 | °C/W |
| Typical Positive Temperature Coefficient for Breakdown Voltage | VBR/ T _j | 0.1 | %/°C |

Maximum Rated Surge Waveform

| Waveform | Standard | I _{pp} (A) |
|------------|----------------|---------------------|
| 2/10 us | GR-1089-CORE | 200 |
| 8/20 us | IEC 61000-4-5 | 150 |
| 10/160 us | FCC Part 68 | 100 |
| 10/700 us | ITU-T, K20/K21 | 60 |
| 10/560 us | FCC Part 68 | 50 |
| 10/1000 us | GR-1089-CORE | 30 |

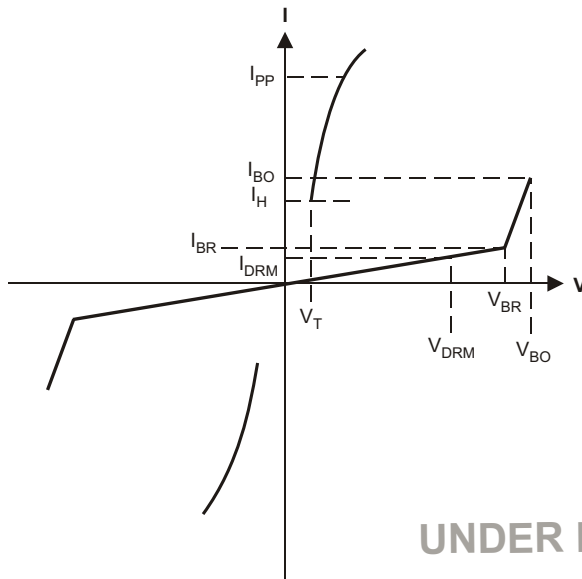


Electrical Characteristics @ $T_A = 25\text{ C}$ unless otherwise specified

| Part Number | Rated Repetitive Off-State Voltage | Off-State Leakage Current @ V_{DRM} | Breakover Voltage | On-State Voltage @ $I_T = 1\text{ A}$ | Breakover Current I_{BO} | | Holding Current I_H | | Off-State Capacitance | Marking Code |
|-------------|------------------------------------|---------------------------------------|-------------------|---------------------------------------|----------------------------|----------|-----------------------|----------|-----------------------|--------------|
| | V_{DRM} (V) | I_{DRM} (μA) | V_{BO} (V) | V_T (V) | Min (mA) | Max (mA) | Min (mA) | Max (mA) | C_O (pF) | |
| TB0640L | 58 | 5 | 77 | 3.5 | 50 | 800 | 150 | 800 | 100 | T064L |
| TB0720L | 65 | 5 | 88 | 3.5 | 50 | 800 | 150 | 800 | 100 | T072L |
| TB0900L | 75 | 5 | 98 | 3.5 | 50 | 800 | 150 | 800 | 100 | T090L |
| TB1100L | 90 | 5 | 130 | 3.5 | 50 | 800 | 150 | 800 | 60 | T110L |
| TB1300L | 120 | 5 | 160 | 3.5 | 50 | 800 | 150 | 800 | 60 | T130L |
| TB1500L | 140 | 5 | 180 | 3.5 | 50 | 800 | 150 | 800 | 60 | T150L |
| TB1800L | 160 | 5 | 220 | 3.5 | 50 | 800 | 150 | 800 | 60 | T180L |
| TB2300L | 190 | 5 | 265 | 3.5 | 50 | 800 | 150 | 800 | 40 | T230L |
| TB2600L | 220 | 5 | 300 | 3.5 | 50 | 800 | 150 | 800 | 40 | T260L |
| TB3100L | 275 | 5 | 350 | 3.5 | 50 | 800 | 150 | 800 | 40 | T310L |
| TB3500L | 320 | 5 | 400 | 3.5 | 50 | 800 | 150 | 800 | 40 | T350L |

| Symbol | Parameter |
|-----------|--|
| V_{DRM} | Stand-off Voltage |
| I_{DRM} | Leakage current at stand-off voltage |
| V_{BR} | Breakdown voltage |
| I_{BR} | Breakdown current |
| V_{BO} | Breakover voltage |
| I_{BO} | Breakover current |
| I_H | Holding current NOTE: 1 |
| V_T | On state voltage |
| I_{PP} | Peak pulse current |
| C_O | Off-state capacitance NOTE: 2 |

- Notes:
- $I_H > (V_L/R_L)$ If this criterion is not obeyed, the TSPD triggers but does not return correctly to high-resistance state. The surge recovery time does not exceed 30ms.
 - Off-state capacitance measured at $f = 1.0\text{ MHz}$, $1.0V_{RMS}$ signal, $V_R = 2V_{DC}$ bias.



UNDER DEVELOPMENT

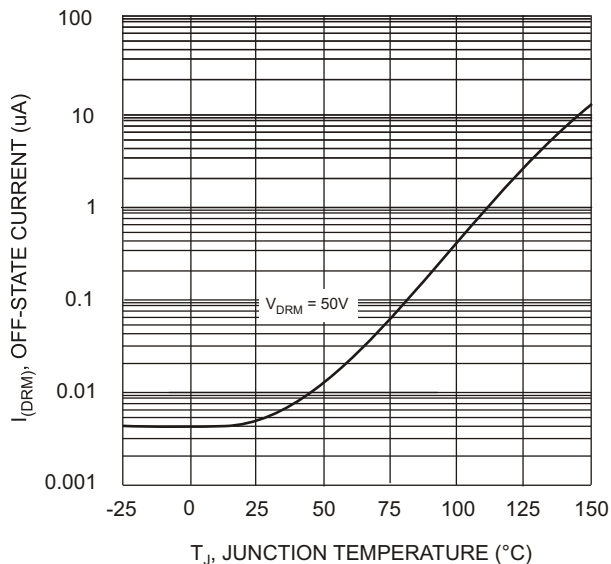


Fig. 1 Off-State Current vs. Junction Temperature

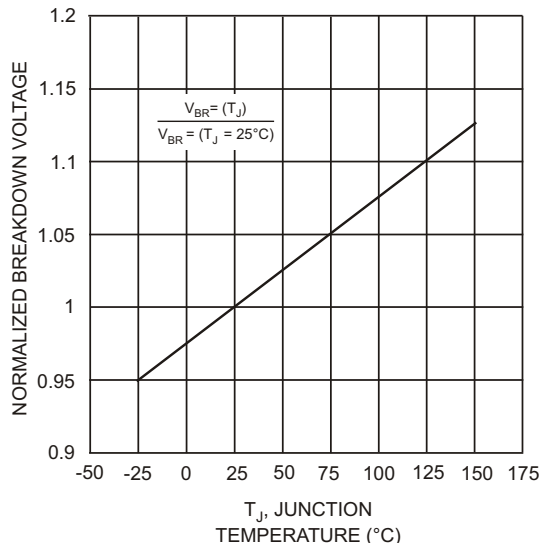


Fig. 2 Relative Variation of Breakdown Voltage vs. Junction Temperature

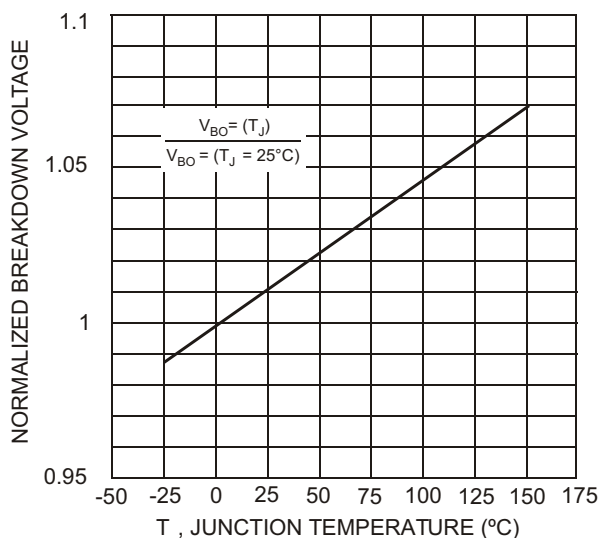


Fig. 3 Relative Variation of Breakover Voltage vs. Junction Temperature

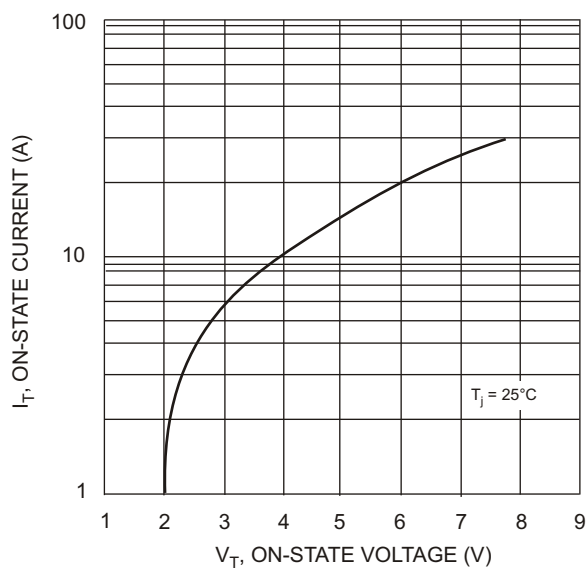


Fig. 4 On-State Current vs. On-State Voltage

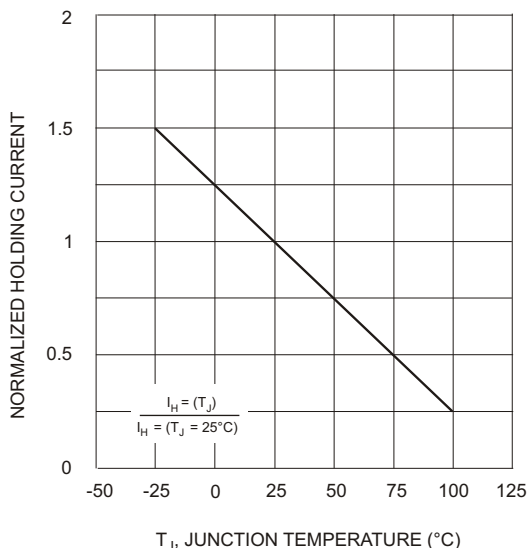


Fig. 5 Relative Variation of Holding Current vs. Junction Temperature

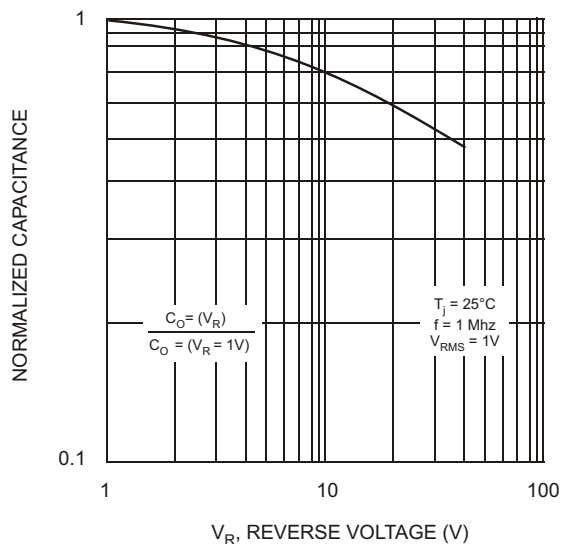


Fig. 6 Relative Variation of Junction Capacitance vs. Reverse Voltage Bias

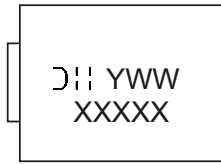
UNDER DEVELOPMENT

Ordering Information (Note 3)

| Device | Packaging | Shipping |
|--|-----------|------------------|
| TB0640L-13 TB0720L-13 TB0900L-13 TB1100L-13 TB1300L-13 TB1500L-13 TB1800L-13 TB2300L-13 TB2600L-13 TB3100L-13 TB3500L-13 | SMB | 3000/Tape & Reel |

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



XXXXX = Product Type Marking Code
 YWW = Date Code Marking
 Y = Year ex: 2 = 2002
 WW = Week

Date Code Key

| Year | 2002 | 2003 | 2004 |
|------|------|------|------|
| Code | 2 | 3 | 4 |

UNDER DEVELOPMENT