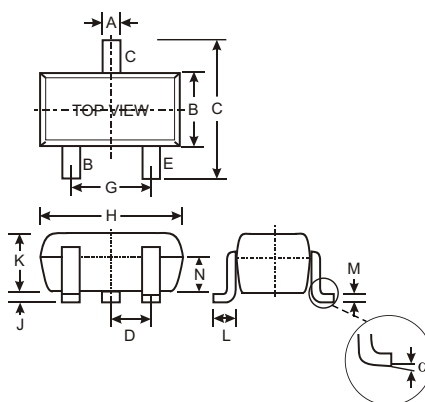


### Features

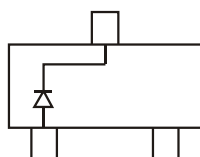
- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Ultra-Small Surface Mount Package

### Mechanical Data

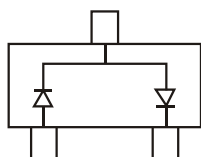
- Case: SOT-523, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams Below
- Marking: See Diagrams Below & Page 2
- Weight: 0.002 grams (approx.)
- Ordering Information, see Page 2



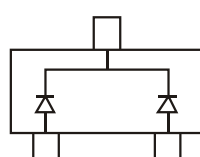
| SOT-523              |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 0.15 | 0.30 | 0.22 |
| B                    | 0.75 | 0.85 | 0.80 |
| C                    | 1.45 | 1.75 | 1.60 |
| D                    | —    | —    | 0.50 |
| G                    | 0.90 | 1.10 | 1.00 |
| H                    | 1.50 | 1.70 | 1.60 |
| J                    | 0.00 | 0.10 | 0.05 |
| K                    | 0.60 | 0.80 | 0.75 |
| L                    | 0.10 | 0.30 | 0.22 |
| M                    | 0.10 | 0.20 | 0.12 |
| N                    | 0.45 | 0.65 | 0.50 |
| $\alpha$             | 0°   | 8°   | —    |
| All Dimensions in mm |      |      |      |



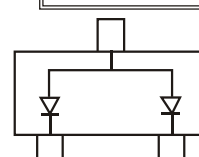
BAS70T Marking: 7C



BAS70-04T Marking: 7D



BAS70-05T Marking: 7E



BAS70-06T Marking: 7F

### Maximum Ratings and Electrical Characteristics, Single Diode @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                                                         | Symbol                          | Value       | Unit               |
|----------------------------------------------------------------------------------------|---------------------------------|-------------|--------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 70          | V                  |
| RMS Reverse Voltage                                                                    | $V_{R(RMS)}$                    | 49          | V                  |
| Forward Continuous Current (Note 1)                                                    | $I_{FM}$                        | 70          | mA                 |
| Non-Repetitive Peak Forward Surge Current @ $t_p < 1.0\text{s}$                        | $I_{FSM}$                       | 100         | mA                 |
| Power Dissipation (Note 1)                                                             | $P_d$                           | 150         | mW                 |
| Thermal Resistance Junction to Ambient Air (Note 1)                                    | $R_{\theta JA}$                 | 833         | $^\circ\text{C/W}$ |
| Operating Temperature Range                                                            | $T_j$                           | -55 to +125 | $^\circ\text{C}$   |
| Storage Temperature Range                                                              | $T_{STG}$                       | -65 to +150 | $^\circ\text{C}$   |

### Electrical Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

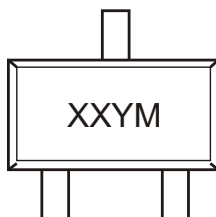
| Characteristic                     | Symbol      | Min | Max         | Unit | Test Condition                                                                                       |
|------------------------------------|-------------|-----|-------------|------|------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 2) | $V_{(BR)R}$ | 70  | —           | —    | $I_R = 10\mu\text{A}$                                                                                |
| Forward Voltage (Note 2)           | $V_F$       | —   | 410<br>1000 | mV   | $t_p < 300\mu\text{s}$ , $I_F = 1.0\text{mA}$<br>$t_p < 300\mu\text{s}$ , $I_F = 15\text{mA}$        |
| Leakage Current (Note 2)           | $I_R$       | —   | 100         | nA   | $t_p < 300\mu\text{s}$ , $V_R = 50\text{V}$                                                          |
| Total Capacitance                  | $C_T$       | —   | 2.0         | pF   | $V_R = 0\text{V}$ , $f = 1.0\text{MHz}$                                                              |
| Reverse Recovery Time              | $t_{rr}$    | —   | 5.0         | ns   | $I_F = I_R = 10\text{mA}$ to $I_R = 1.0\text{mA}$ ,<br>$I_{rr} = 0.1 \times I_R$ , $R_L = 100\Omega$ |

- Notes:
1. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration test pulse used to minimize self-heating effect.

**Ordering Information** (Note 3)

| Device      | Packaging | Shipping         |
|-------------|-----------|------------------|
| BAS70T-7    | SOT-523   | 3000/Tape & Reel |
| BAS70-04T-7 | SOT-523   | 3000/Tape & Reel |
| BAS70-05T-7 | SOT-523   | 3000/Tape & Reel |
| BAS70-06T-7 | SOT-523   | 3000/Tape & Reel |

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

**Marking Information**

XX = Product Type Marking Code (See Page 1, e.g. 7C = BAS70T)  
 YM = Date Code Marking  
 Y = Year (ex: N = 2002)  
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|------|
| Code | N    | P    | R    | S    | T    | U    | V    | W    |

| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3     | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |