

BAS16XV2T1

Preferred Device

Switching Diode

- High-Speed Switching Applications
- Lead Finish: 100% Matte Sn (Tin)
- Qualified Reflow Temperature: 260°C
- Extremely Small SOD-523 Package

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|----------------------------|-----------------|-------|------|
| Continuous Reverse Voltage | V_R | 75 | V |
| Peak Forward Current | I_F | 200 | mA |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500 | mA |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|------------|---------------------------|
| Total Device Dissipation FR-5 Board (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 200 | mW |
| Thermal Resistance Junction-to-Ambient | $R_{\theta JA}$ | 635 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature | T_J, T_{stg} | -55 to 150 | $^\circ\text{C}$ |

1. FR-4 Minimum Pad.
2. 300 mW for 1 in. copper.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

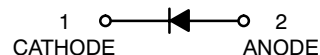
OFF CHARACTERISTICS

| | | | | |
|--|------------|----|----------------------------|---------------|
| Reverse Voltage Leakage Current ($V_R = 75\text{ V}$) ($V_R = 75\text{ V}, T_J = 150^\circ\text{C}$) ($V_R = 25\text{ V}, T_J = 150^\circ\text{C}$) | I_R | - | 1.0 50 30 | μA |
| Reverse Breakdown Voltage ($I_{BR} = 100\ \mu\text{A}$) | $V_{(BR)}$ | 75 | - | V |
| Forward Voltage ($I_F = 1.0\text{ mA}$) ($I_F = 10\text{ mA}$) ($I_F = 50\text{ mA}$) ($I_F = 150\text{ mA}$) | V_F | - | 715 855 1000 1250 | mV |
| Diode Capacitance ($V_R = 0, f = 1.0\text{ MHz}$) | C_D | - | 2.0 | pF |
| Forward Recovery Voltage ($I_F = 10\text{ mA}, t_r = 20\text{ ns}$) | V_{FR} | - | 1.75 | V |
| Reverse Recovery Time ($I_F = I_R = 10\text{ mA}, R_L = 50\ \Omega$) | t_{rr} | - | 6.0 | ns |
| Stored Charge ($I_F = 10\text{ mA to } V_R = 5.0\text{ V},$ $R_L = 500\ \Omega$) | Q_S | - | 45 | pC |



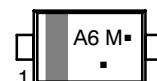
ON Semiconductor®

<http://onsemi.com>



MARKING DIAGRAM

SOD-523
CASE 502
PLASTIC



A6 = Specific Device Code
M = Date Code
▪ = Pb-Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|-------------|----------------------|------------------|
| BAS16XV2T1 | SOD-523 | 3000/Tape & Reel |
| BAS16XV2T1G | SOD-523 (Pb-Free) | 3000/Tape & Reel |
| BAS16XV2T5G | SOD-523 (Pb-Free) | 8000/Tape & Reel |

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

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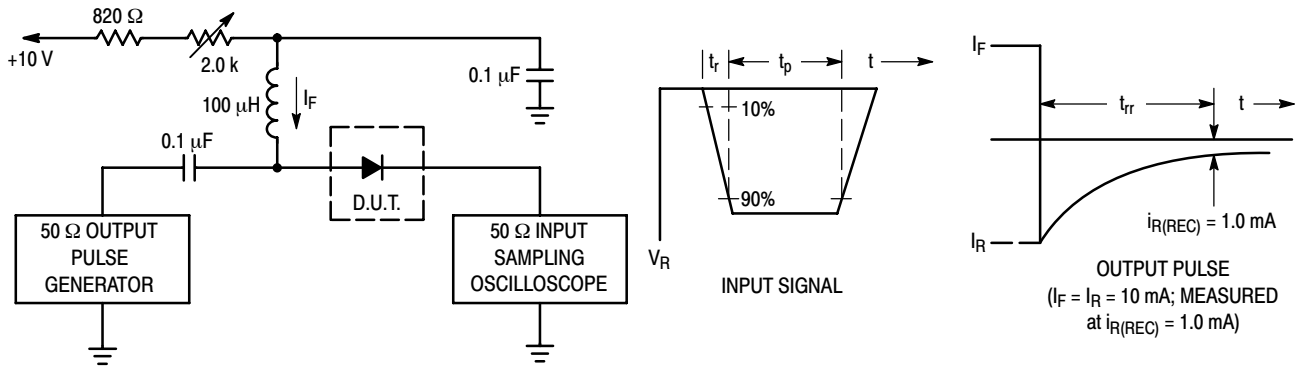


Figure 1. Recovery Time Equivalent Test Circuit

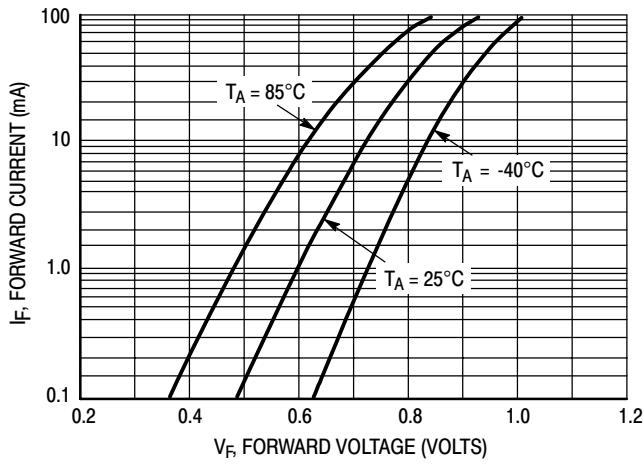


Figure 2. Forward Voltage

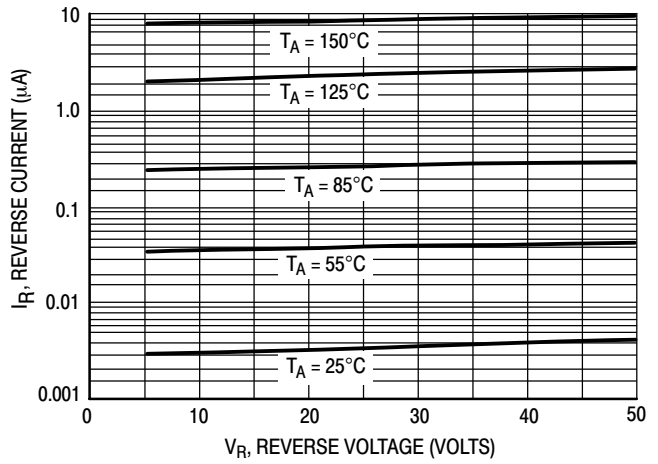


Figure 3. Leakage Current

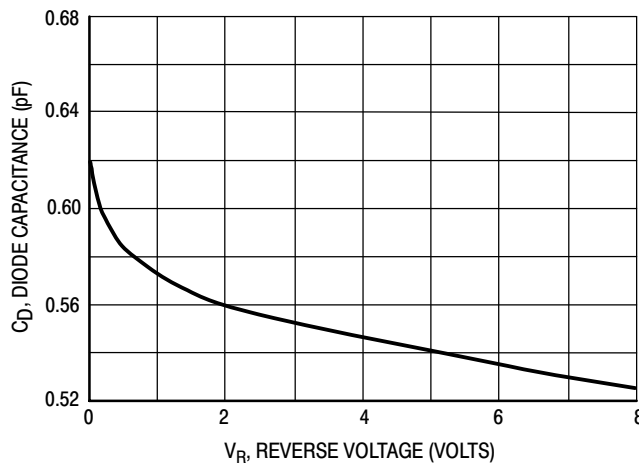
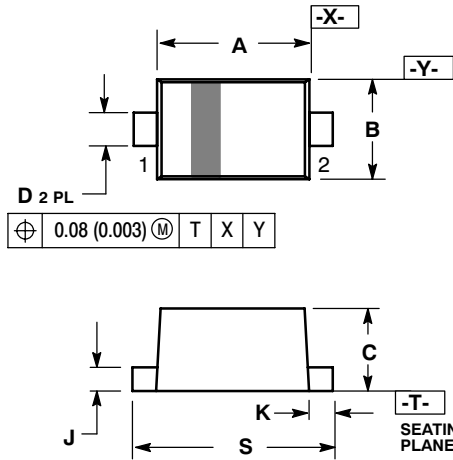


Figure 4. Capacitance

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PACKAGE DIMENSIONS

SOD-523
CASE 502-01
ISSUE C

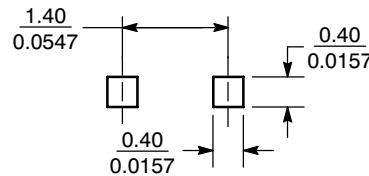


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|--------|--------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 1.10 | 1.20 | 1.30 | 0.043 | 0.047 | 0.051 |
| B | 0.70 | 0.80 | 0.90 | 0.028 | 0.032 | 0.035 |
| C | 0.50 | 0.60 | 0.70 | 0.020 | 0.024 | 0.028 |
| D | 0.25 | 0.30 | 0.35 | 0.010 | 0.012 | 0.014 |
| J | 0.07 | 0.14 | 0.20 | 0.0028 | 0.0055 | 0.0079 |
| K | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.010 |
| S | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |

SOLDERING FOOTPRINT*



SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}} \right)$

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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