

BAS16XV2T1

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
Continuous Forward Current	I_F	200	mA
Peak Forward Surge Current	$I_{FM(surge)}$	500	mA
Repetitive Peak Forward Current	I_{FRM}	500	mA
Non-Repetitive Peak Forward Current (Square Wave, $T_J = 25^\circ\text{C}$ prior to surge)	I_{FSM}	4.0	A
$t = 1 \mu\text{s}$		1.0	
$t = 1 \text{ ms}$		0.5	
$t = 1 \text{ s}$			

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, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	200	mW
		1.57	mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage Temperature	T_J, T_{stg}	-55 to 150	°C

1. FR-5 Minimum Pad.

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

Characteristic	Symbol	Min	Max	Unit
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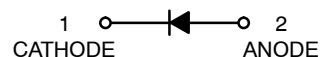
OFF CHARACTERISTICS

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	μA
		-	50	
		-	30	
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	mV
		-	855	
		-	1000	
		-	1250	
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



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SOD-523
CASE 502
PLASTIC

MARKING DIAGRAM



A6 = Specific Device Code
M = Date Code
▪ = Pb-Free Package

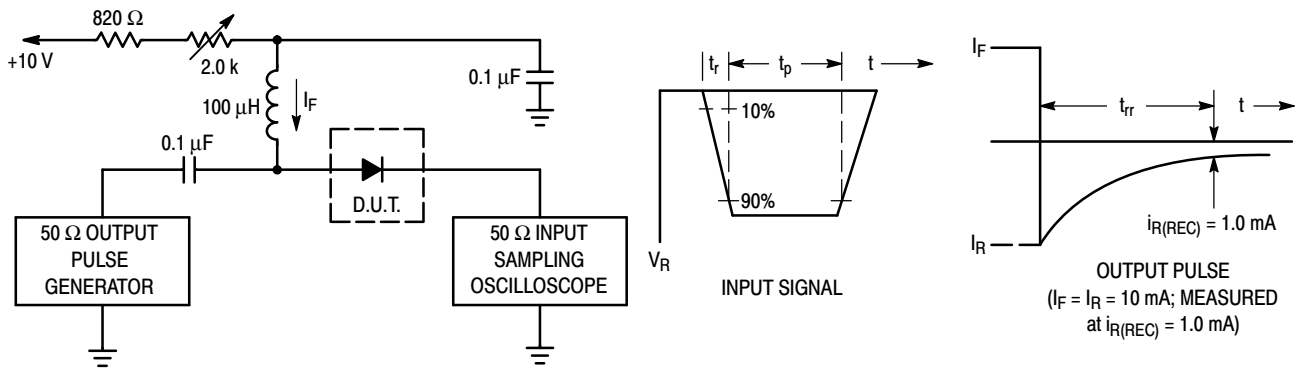
(Note: Microdot may be in either location)

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.

BAS16XV2T1



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

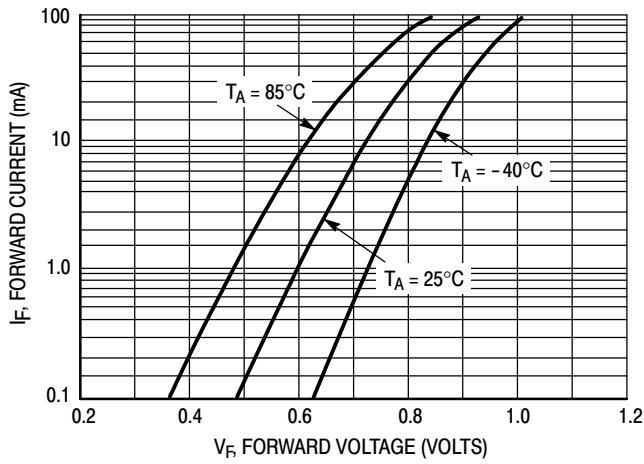


Figure 2. Forward Voltage

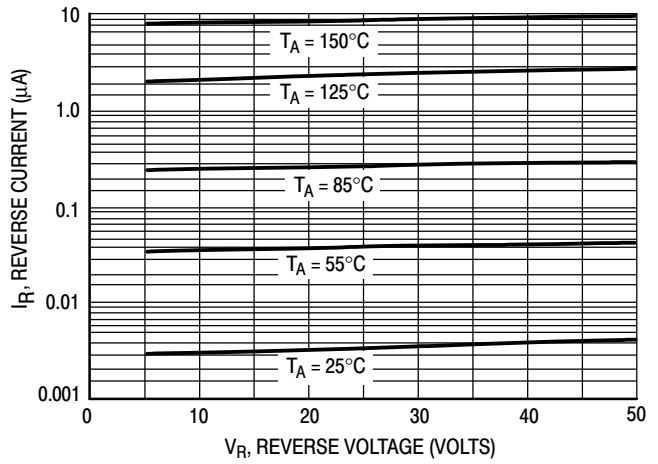


Figure 3. Leakage Current

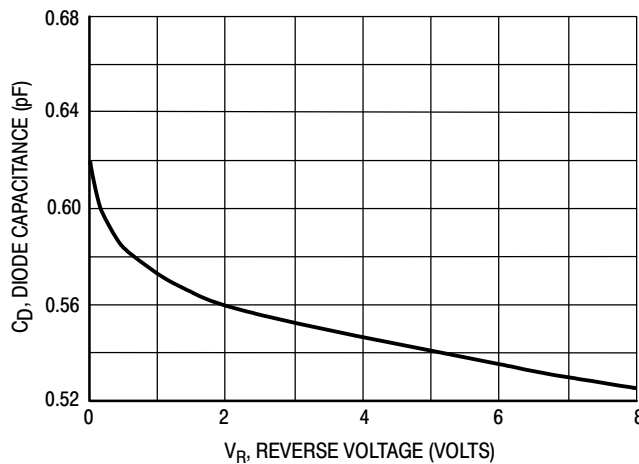
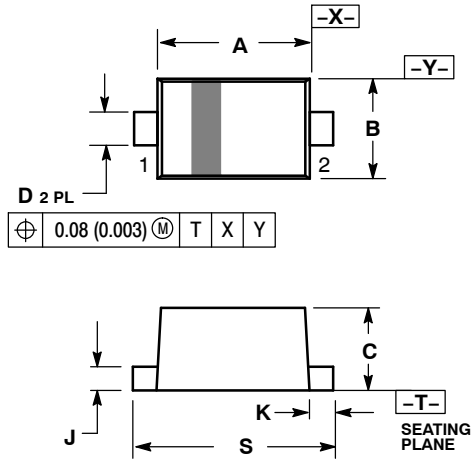


Figure 4. Capacitance

BAS16XV2T1

PACKAGE DIMENSIONS

SOD-523
CASE 502-01
ISSUE C

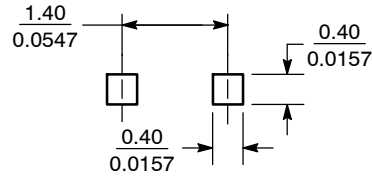


NOTES:

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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