



# BAS16T, BAW56T, BAV70T, BAV99T

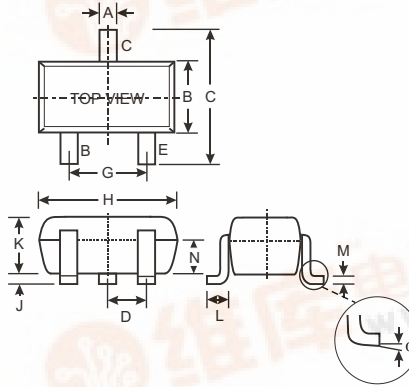
## SURFACE MOUNT FAST SWITCHING DIODE

### Features

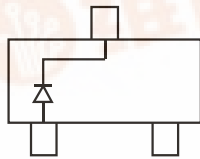
- Ultra-Small Surface Mount Package
- Fast Switching Speed
- For General Purpose Switching Applications
- High Conductance

### Mechanical Data

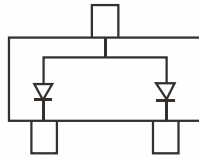
Case: SOT-523, Molded Plastic  
 Case material - UL Flammability Rating 94V-0  
 Moisture sensitivity: Level 1 per J-STD-020A  
 Terminals: Solderable per MIL-STD-202, Method 208  
 Polarity: See Diagrams Below  
 Marking: See Diagrams Below & Page 2  
 Weight: 0.002 grams (approx.)  
 Ordering Information,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



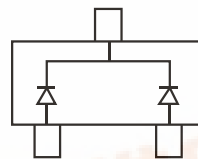
SOT-523			
Dim	Min	Max	Typ
A	0.15	0.30	0.22
B	0.75	0.85	0.80
C	1.45	1.75	1.60
D			0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
J	0.00	0.10	0.05
K	0.60	0.80	0.75
L	0.10	0.30	0.22
M	0.10	0.20	0.12
N	0.45	0.65	0.50
	0	8	
All Dimensions in mm			



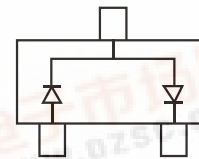
BAS16T Marking: A2



BAW56T Marking: JD



BAV70T Marking: JJ



BAV99T Marking: JE

### Maximum Ratings @ T<sub>A</sub> = 25 C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	85	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	60	V
Forward Continuous Current (Note 2)	I <sub>FM</sub>	155	mA
Single diode		75	
Double diode			
Repetitive Peak Forward Current	I <sub>FRM</sub>	500	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	4.0	A
@ t = 1.0 s		1.0	
@ t = 1.0ms		0.5	
@ t = 1.0s			
Power Dissipation (Note 2)	P <sub>d</sub>	150	mW
Thermal Resistance Junction to Ambient (Note 2)	R <sub>JA</sub>	833	C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	C

NEW PRODUCT



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

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	85		V	$I_R = 100\text{ A}$
Forward Voltage (Note 1)	$V_F$		0.715 0.855 1.0 1.25	V	$I_F = 1.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 150\text{mA}$
Leakage Current (Note 1)	$I_R$		2.0 100 60 30	A A A nA	$V_R = 75\text{V}$ $V_R = 75\text{V}, T_j = 150\text{ C}$ $V_R = 25\text{V}, T_j = 150\text{ C}$ $V_R = 25\text{V}$
Typical Total Capacitance	$C_T$		1.5	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$		4.0	ns	$I_F = I_R = 10\text{mA}$ , $I_{rr} = 0.1 \times I_R, R_L = 100$

- Notes:
1. Short duration test pulse to minimize self-heating effect.
  2. 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>.

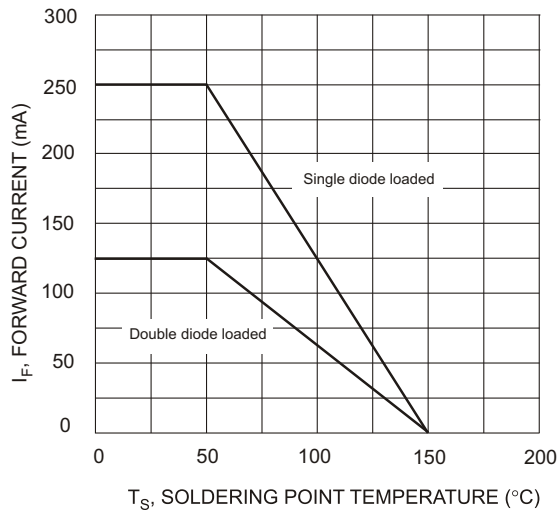


Fig. 1 Current Derating Curve

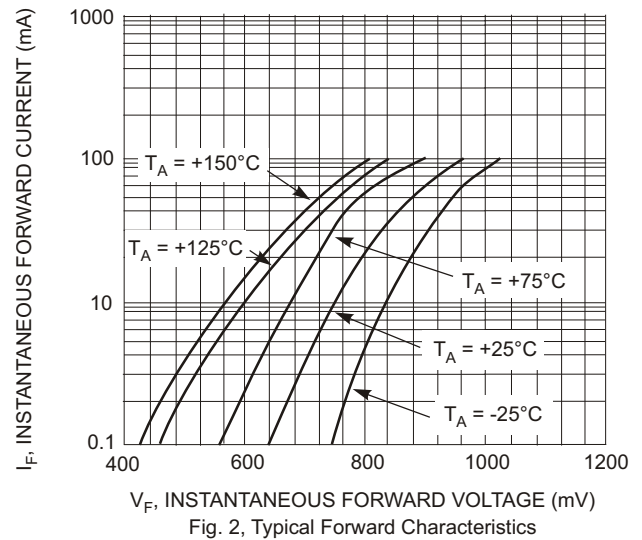


Fig. 2 Typical Forward Characteristics

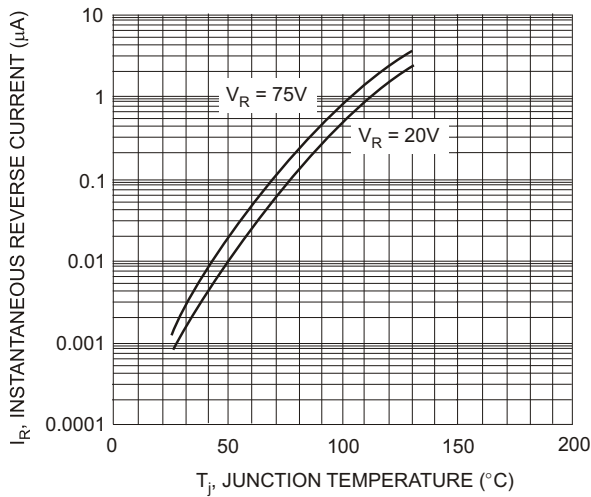


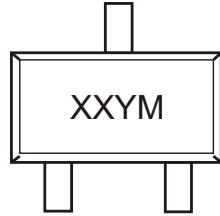
Fig. 3 Typical Reverse Characteristics

## Ordering Information (Note 3)

Device	Packaging	Shipping
BAS16T-7	SOT-523	3000/Tape & Reel
BAW56T-7	SOT-523	3000/Tape & Reel
BAV70T-7	SOT-523	3000/Tape & Reel
BAV99T-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. A2 = BAS16T)  
 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