

#### SURFACE MOUNT FAST SWITCHING DIODE

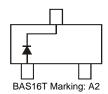
### **Features**

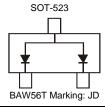
- Ultra-Small Surface Mount Package
- Fast Switching Speed
- For General Purpose Switching Applications
- **High Conductance**
- Lead Free/RoHS Compliant (Note 1)
- "Green" Device (Note 3 and 4)

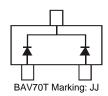
### **Mechanical Data**

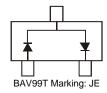
- Case: SOT-523
- Case Material Molded Plastic. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish)
- Polarity: See Diagrams Below
- Marking Information: See Diagrams Below & Page 2
- Ordering Information: See Page 2
- Weight: 0.002 grams (approximate)











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

Characteristic	Symbol	Value	Unit	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RM</sub> V <sub>RWM</sub> V <sub>R</sub>	85	V
RMS Reverse Voltage		V <sub>R(RMS)</sub>	60	V
Forward Continuous Current (Note 2)	Single Diode Double Diode	I <sub>FM</sub>	155 75	mA
Repetitive Peak Forward Current		I <sub>FRM</sub>	500	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0ms @ t = 1.0s	I <sub>FSM</sub>	4.0 1.0 0.5	А

# **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	P <sub>D</sub>	150	mW
Thermal Resistance Junction to Ambient (Note 2)	$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

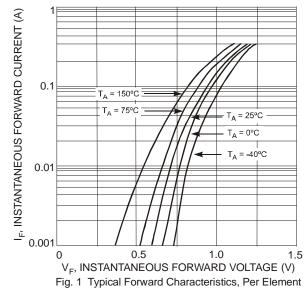
#### **Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

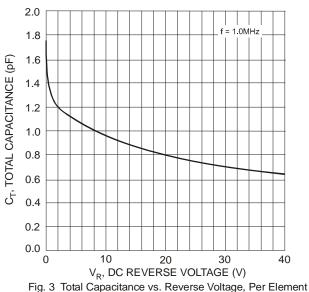
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	85	_	_	V	$I_R = 100 \mu A$
Forward Voltage	V <sub>F</sub>	_	_	0.715 0.855 1.0 1.25	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 50mA I <sub>F</sub> = 150mA
Leakage Current (Note 5)	I <sub>R</sub>	_	_	2.0 100 60 30	μA	V <sub>R</sub> = 75V V <sub>R</sub> = 75V, T <sub>J</sub> = 150°C V <sub>R</sub> = 25V, T <sub>J</sub> = 150°C V <sub>R</sub> = 25V
Total Capacitance	C <sub>T</sub>	_	1.5	_	pF	$V_R = 0, f = 1.0MHz$
Reverse Recovery Time	t <sub>rr</sub>	_	_	4.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \text{ x } I_R, R_L = 100 \Omega$

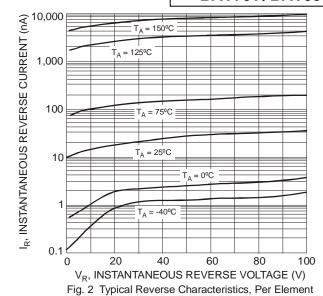
Notes: 1. No purposefully added lead.

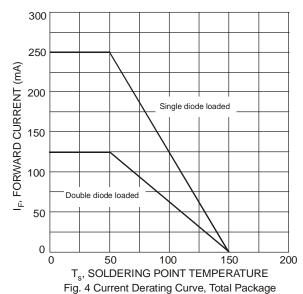
- 2. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.
  Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.
- 5. Short duration pulse test used to minimize self-heating effect.











# Ordering Information (Note 6)

Part Number	Case	Packaging
BAS16T-7-F	SOT-523	3000/Tape & Reel
BAW56T-7-F	SOT-523	3000/Tape & Reel
BAV70T-7-F	SOT-523	3000/Tape & Reel
BAV99T-7-F	SOT-523	3000/Tape & Reel

Notes: 6. 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)

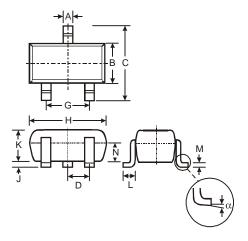
M = Month (ex: 9 = September)

Date Code Key

Year	2002	2003	2004	2005	5 200	06 2	007	2008	- 2	2009	2010	2011	2012
Code	Ν	Р	R	S	Т		U	V		W	Χ	Υ	Z
Month	Jan	Feb	Mar	Apr	May	Jun	Ju	ıl /	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7		8	9	0	N	D

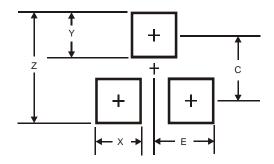


# **Package Outline Dimensions**



	SOT-523					
Dim	Min	Max	Тур			
Α	0.15	0.30	0.22			
В	0.75	0.85	0.80			
С	1.45	1.75	1.60			
D	_		0.50			
G	0.90	1.10	1.00			
Η	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			
α	0°	8°				
All	All Dimensions in mm					

### **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	1.8
Х	0.4
Y	0.51
С	1.3
E	0.7

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