



SURFACE MOUNT FAST SWITCHING DIODE

Features

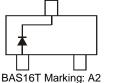
- Ultra-Small Surface Mount Package
- Fast Switching Speed
- For General Purpose Switching Applications
- **High Conductance**
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead-Free Plating); Solderable per MIL-STD-202, Method 208 3
- Polarity: See Diagrams Below
- Weight: 0.002 grams (Approximate)



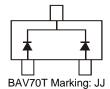
TOP VIEW

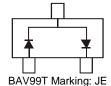




SOT-523

BAW56T Marking: JD





Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
BAS16T-7-F	Standard	SOT-523	3,000/Tape & Reel
BAW56T-7-F	Standard	SOT-523	3,000/Tape & Reel
BAV70T-7-F	Standard	SOT-523	3,000/Tape & Reel
BAV99T-7-F	Standard	SOT-523	3,000/Tape & Reel
BAV99TQ-13-F	Automotive	SOT-523	10,000/Tape & Reel

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

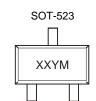
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/.

5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



XX = Product Type Marking Code (See this page, e.g. A2 = BAS16T) YM = Date Code Marking Y = Year (ex: C = 2015)

M = Month (ex: 9 = September)

Date Code Key

Year	2002	2003	2004		201	15 20	016 2	2017	2018	2019	2020	2021
Code	N	Р	R		C	;	D	E	F	G	Н	
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



Maximum Ratings (@T_A = +25°C unless otherwise specified.)

Characteristic	Symbol	Value	Unit	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V _{RRM} V _{RWM} V _R	85	V
RMS Reverse Voltage		V _{R(RMS)}	60	V
Forward Continuous Current (Note 6)	Single Diode Double Diode	I _{FM}	155 75	mA
Repetitive Peak Forward Current		I _{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0µs @ t = 1.0ms @ t = 1.0s	IFSM	4.0 1.0 0.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	PD	150	mW
Thermal Resistance Junction to Ambient (Note 6)	R ₀ JA	833	°C/W
Operating and Storage Temperature Range	TJ, T _{STG}	-65 to +150	٥°C

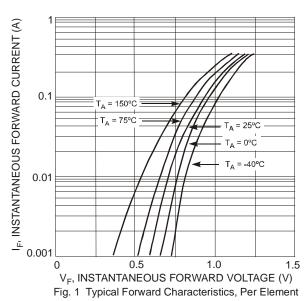
Electrical Characteristics ($@T_A = +25^{\circ}C$ unless otherwise specified.)

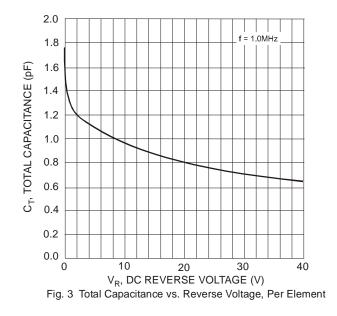
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	85			V	I _R = 100μA
Forward Voltage	V _F			0.715 0.855 1.0 1.25	V	$I_{F} = 1.0mA$ $I_{F} = 10mA$ $I_{F} = 50mA$ $I_{F} = 150mA$
Leakage Current (Note 7)	I _R	—	_	2.0 100 60 30	μΑ μΑ μΑ nA	$V_R = 75V$ $V_R = 75V$, $T_J = +150^{\circ}C$ $V_R = 25V$, $T_J = +150^{\circ}C$ $V_R = 25V$
Total Capacitance	CT	_	1.5	_	pF	$V_{R} = 0, f = 1.0MHz$
Reverse Recovery Time	t _{rr}	_	_	4.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \text{ x } I_R, R_L = 100 \Omega$

Notes: 6. 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. 7. Short duration pulse test used to minimize self-heating effect.



BAS16T, BAW56T, BAV70T, BAV99T





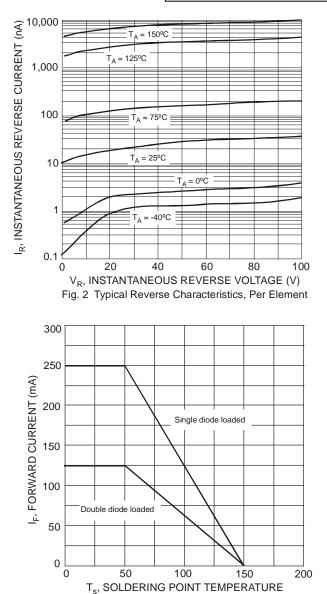
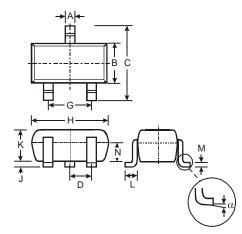


Fig. 4 Current Derating Curve, Total Package



Package Outline Dimensions

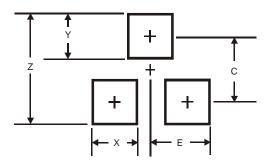
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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				
Н	1.50	1.70	1.60				
J	0.00	0.10	0.05				
ĸ	0.60	0.80	0.75				
L	0.10	0.30	0.22				
Μ	0.10	0.20	0.12				
Ν	0.45	0.65	0.50				
α	0°	8°					
All	All Dimensions in mm						

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



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



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 - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
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