



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)

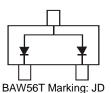




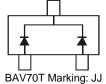
TOP VIEW

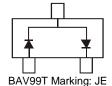


BAS16T Marking: A2



SOT-523





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.

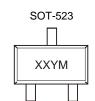
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

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	5 2	016	2017	2018	2019	2020	2021
Code	Ν	Р	R		С		D	E	F	G	Н	
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	g 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

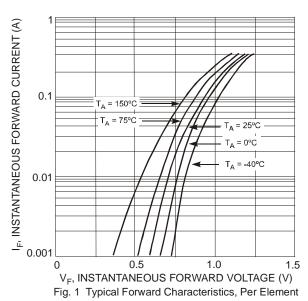
Electrical Characteristics ($@T_A = +25^{\circ}C$ unless otherwise specified.)

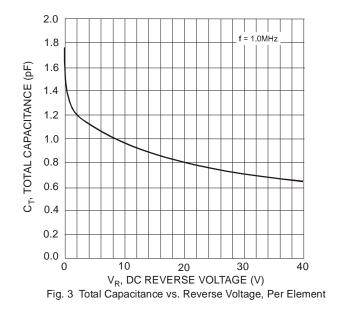
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	85			V	I _R = 100μA
Forward Voltage	V _F			0.715 0.855 1.0 1.25	V	$I_{F} = 1.0mA$ $I_{F} = 10mA$ $I_{F} = 50mA$ $I_{F} = 150mA$
Leakage Current (Note 7)	I _R	—	_	2.0 100 60 30	μΑ μΑ μΑ nA	$V_R = 75V$ $V_R = 75V$, $T_J = +150^{\circ}C$ $V_R = 25V$, $T_J = +150^{\circ}C$ $V_R = 25V$
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





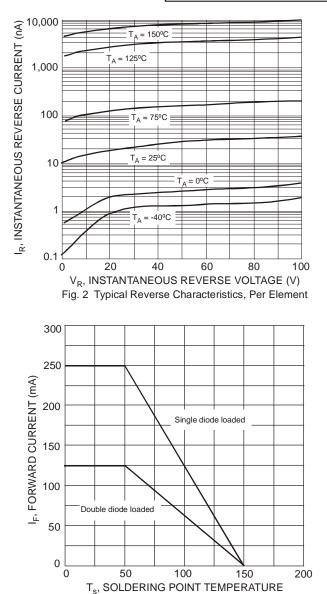
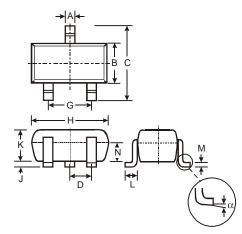


Fig. 4 Current Derating Curve, Total Package



Package Outline Dimensions

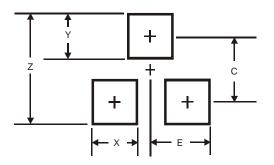
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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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