

#### BAS70T /-04T /-05T /-06T

#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

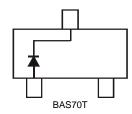
#### **Features**

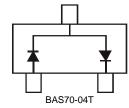
- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Ultra-Small Surface Mount Package
- Lead Free/RoHS Compliant (Note 3)
- "Green" Device (Note 4 and 5)

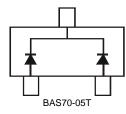
#### **Mechanical Data**

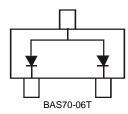
- Case: SOT-523
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- · Polarity: See Diagrams Below
- Marking Information: See 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>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	70	V	
RMS Reverse Voltage		V <sub>R(RMS)</sub>	49	V	
Forward Continuous Current	(Note 1)	I <sub>FM</sub>	70	mA	
Non-Repetitive Peak Forward Surge Current	@ $t_p < 1.0s$	I <sub>FSM</sub>	100	mA	

#### Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 1)	$P_{D}$	150	mW
Thermal Resistance Junction to Ambient Air	(Note 1)	$R_{ heta JA}$	833	°C/W
Operating Temperature Range		TJ	-55 to +125	°C
Storage Temperature Range		T <sub>STG</sub>	-65 to +150	°C

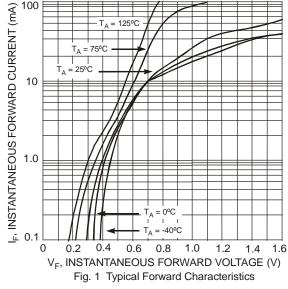
## **Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

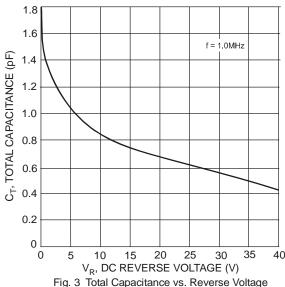
Characteristic	Symbol	Min	Max	Unit	Test Condition	
Reverse Breakdown Voltage	(Note 2)	$V_{(BR)R}$	70	_	_	$I_R = 10\mu A$
Forward Voltage		VF	_	410 1000		$t_p < 300 \mu s$ , $I_F = 1.0 mA$ $t_p < 300 \mu s$ , $I_F = 15 mA$
Leakage Current	(Note 2)	I <sub>R</sub>	_	100	nA	$t_p < 300 \mu s, V_R = 50 V$
Total Capacitance		C <sub>T</sub>		2.0	pF	$V_R = 0V$ , $f = 1.0MHz$
Reverse Recovery Time		t <sub>rr</sub>	_	5.0	ns	$I_F = I_R = 10 \text{mA} \text{ to } I_R = 1.0 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$

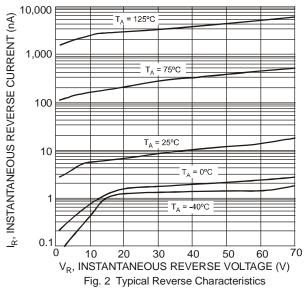
Notes:

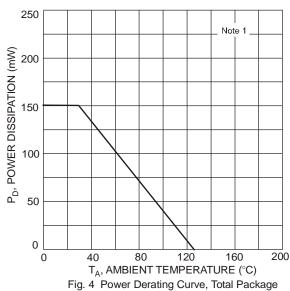
- Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- Short duration pulse test used to minimize self-heating effect.
- No purposefully added lead.
- 4. Diodes Inc.'s "Green" policy can be found on our website 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 Sb2O3 Fire Retardants.









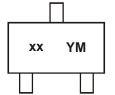


## Ordering Information (Note 6)

Part Number	Case	Packaging
BAS70T-7-F	SOT-523	3000/Tape & Reel
BAS70-04T-7-F	SOT-523	3000/Tape & Reel
BAS70-05T-7-F	SOT-523	3000/Tape & Reel
BAS70-06T-7-F	SOT-523	3000/Tape & Reel

6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf. Notes:

#### **Marking Information**



xx = Product Type Marking Code

7C = BAS70T

7D = BAS70-04T

7E = BAS70-05T

7F = BAS70-06T

YM = Date Code Marking

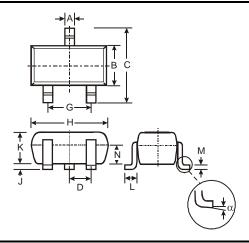
Y = Year (ex: N = 2002)

M = Month (ex: 9 = September)

Date Code Ke	ey .				Ш	ш	ı	M = Month	(ex: 9 = S	Septembe	er)			
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	N	Р	R	S	Т	U	V	W	Х	Υ	Z	Α	В	С
Month	Jan	Feb	Ma	ar .	Apr	May	Jun	Jul	Aug	Sep	o (	Oct	Nov	Dec
Code	1	2	3		4	5	6	7	8	q		0	N	D

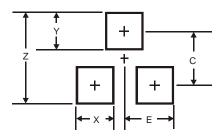


#### **Package Outline Dimensions**



SOT-523						
Dim	Min	Max	Тур			
Α	0.15	0.30	0.22			
В	0.75	0.85	0.80			
C	1.45	1.75	1.60			
D	<b>—</b>					
G	0.90	1.00				
Η	1.50	1.70	1.60			
7	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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