



# BAS70 /-04 /-05 /-06

#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

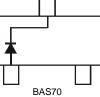
#### **Features**

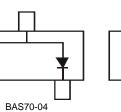
- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)
- Qualified to AEC-Q101 Standards for High Reliability

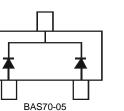
### **Mechanical Data**

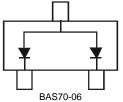
- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.008 grams (approximate)











## **Maximum Ratings** $@T_A = 25^{\circ}C$ 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
Maximum Forward Continuous Current (Note 1)	I <sub>FM</sub>	70	mA
Non-Repetitive Peak Forward Surge Current $@ t \le 1.0s$	I <sub>FSM</sub>	100	mA

## **Thermal Characteristics**

			-
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	PD	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{ ext{ heta}JA}$	625	°C/W
Operating Junction 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 <sub>(BR)R</sub>	70	—	V	$I_R = 10 \mu A$
Forward Voltage	V <sub>F</sub>	—	410 1000	mV	t <sub>p</sub> <300µs, I <sub>F</sub> = 1.0mA t <sub>p</sub> <300µs, I <sub>F</sub> = 15mA
Reverse Current (Note 2)	I <sub>R</sub>	_	100	nA	t <sub>p</sub> <300µs, V <sub>R</sub> = 50V
Total Capacitance	CT	_	2.0	pF	$V_{R} = 0V, f = 1.0MHz$
Reverse Recovery Time	t <sub>rr</sub>	_	5.0	ns	$I_F = I_R = 10$ mA to $I_R = 1.0$ mA, $R_L = 100\Omega$

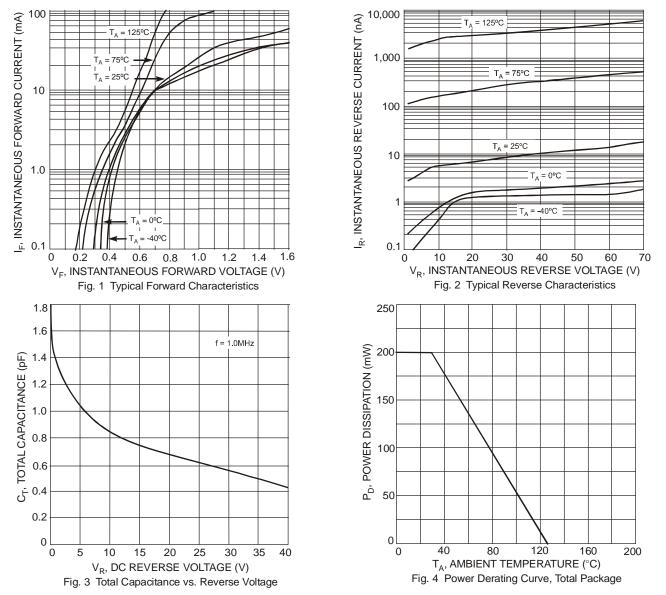
1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. Notes: 2

3.

Short duration pulse test used to minimize self-heating effect. No purposefully added lead. Halogen and Antimony Free. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 4. V9 are built with Non-Green Molding Compound and may contain Halogens or  $Sb_2O_3$  Fire Retardants.



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# Ordering Information (Note 5)

Part Number	Case	Packaging
BAS70-7-F	SOT-23	3000/Tape & Reel
BAS70-04-7-F	SOT-23	3000/Tape & Reel
BAS70-05-7-F	SOT-23	3000/Tape & Reel
BAS70-06-7-F	SOT-23	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

#### **Marking Information**

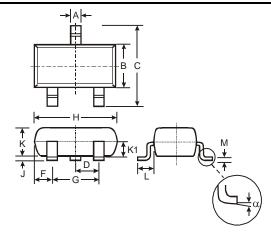
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Date Code Year	rey 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	201	3 2014	2015
Code	M	N	P	R	<u>2005</u>	T	U	V	W	X	Y	Z012	201. A	B	C
Month	Jan	Fe	b	Mar	Apr	May	Ju	n	Jul	Aug	Sep	Oc	t	Nov	Dec
Code	1	2		3	4	5	6		7	8	9	0		Ν	D

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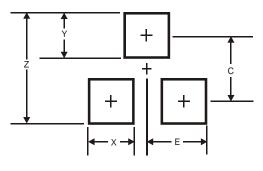


### **Package Outline Dimensions**



SOT-23						
Dim	Min	Тур				
Α	0.37	0.51	0.40			
В	1.20	1.40	1.30			
С	2.30	2.50	2.40			
D	0.89	1.03	0.915			
F	0.45	0.60	0.535			
G	1.78	2.05	1.83			
Н	2.80	3.00	2.90			
J	0.013	0.10	0.05			
κ	0.903	1.10	1.00			
K1	-	-	0.400			
L	0.45	0.61	0.55			
М	0.085	0.18	0.11			
α	0°	8°	-			
All	Dimens	ions in	mm			

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
E	1.35

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