

#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

### **Features**

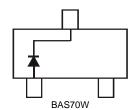
- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Ultra-Small Surface Mount Package
- Lead Free/RoHS Compliant (Note 3)
- "Green" Device (Note 4 and 5)

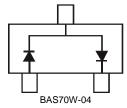
## **Mechanical Data**

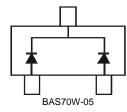
- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.006 grams (approximate)

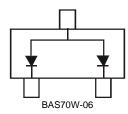


Top View









## **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>F</sub>	70	mA
Non-Repetitive Peak Forward Surge Current @ tp < 1.0s	I <sub>FSM</sub>	100	mA

### **Thermal Characteristics**

		-	_
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P <sub>D</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{ heta JA}$	625	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150	°C

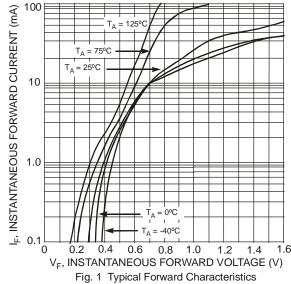
## Electrical Characteristics @TA = 25°C unless otherwise specified

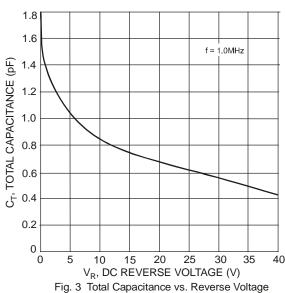
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	70	_	_	$I_R = 10\mu A$
Forward Voltage	V <sub>F</sub>	_	410 1000	mV	$t_p < 300 \mu s$ , $I_F = 1.0 mA$ $t_p < 300 \mu s$ , $I_F = 15 mA$
Reverse Current (Note 2)	I <sub>R</sub>	_	100	nA	$t_p < 300 \mu s, V_R = 50 V$
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	$I_F = I_R = 10 \text{mA} \text{ to } I_R = 1.0 \text{mA},$ $I_{rr} = 0.1 \text{ x } I_R, R_L = 100 \Omega$

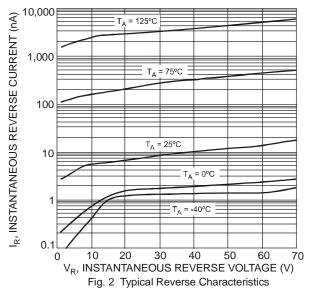
Notes:

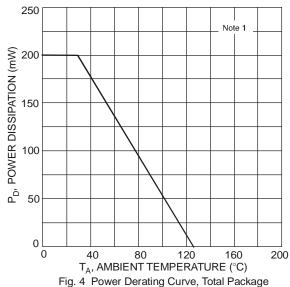
- 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 2. Short duration pulse test used to minimize self-heating effect.
- 3. No purposefully added lead.
- 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.
- 5. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.









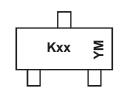


# Ordering Information (Notes 5 & 6)

Part Number	Case	Packaging
BAS70W-7-F	SOT-323	3000/Tape & Reel
BAS70W-04-7-F	SOT-323	3000/Tape & Reel
BAS70W-05-7-F	SOT-323	3000/Tape & Reel
BAS70W-06-7-F	SOT-323	3000/Tape & Reel

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

## **Marking Information**



Kxx = Product Type Marking Code K73 = BAS70W

K74 = BAS70W-04

K75 = BAS70W-05 K76 = BAS70W-06

YM = Date Code Marking

Y = Year (ex: N = 2002)

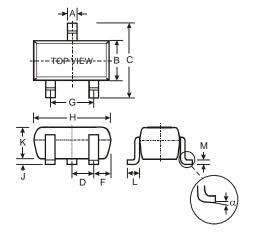
M = Month (ex: 9 = September)

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	3 2014	2015
Code	Ν	Р	R	S	Т	U	V	W	Χ	Υ	Z	Α	В	С
Month	Jan	Feb	Ma	ir .	Apr	May	Jun	Jul	Aug	Se	р	Oct	Nov	Dec
Code	1	2	3		4	5	6	7	8	9		0	N	D

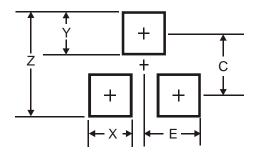


## **Package Outline Dimensions**



SOT-323					
Dim	Min	Max	Тур		
Α	0.25	0.40	0.30		
В	1.15	1.35	1.30		
С	2.00	2.20	2.10		
D	-	-	0.65		
F	0.30	0.40	0.425		
G	1.20	1.40	1.30		
Н	1.80	2.20	2.15		
J	0.0	0.10	0.05		
K	0.90	1.00	1.00		
L	0.25	0.40	0.30		
М	0.10	0.18	0.11		
α	0°	8°	-		
All Dimensions in mm					

# **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.8
Х	0.7
Υ	0.9
С	1.9
E	1.0

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