BAS70/ -04/ -05/ -06

SURFACE MOUNT SCHOTTKY BARRIER DIODE

Please click here to visit our online spice models database.

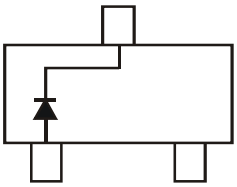
Features

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- **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**

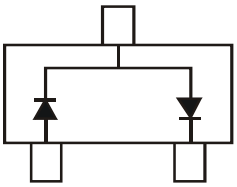
Mechanical Data

- Case: SOT23
- 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 (e3)
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Weight: 0.008 grams (approximate)

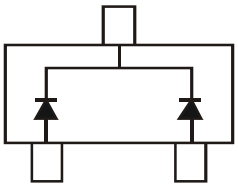
Top View



BAS70



BAS70-04



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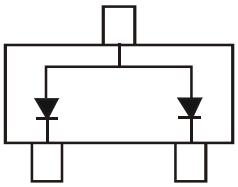


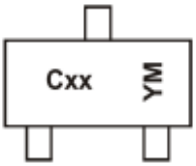
BAS70-06

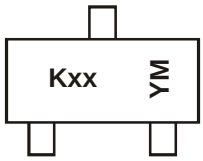
Ordering Information (Note 4 & 5)

Part Number	Case	Packaging
BAS70-7-F	SOT23	3000/Tape & Reel
BAS70-04-7-F	SOT23	3000/Tape & Reel
BAS70-05-7-F	SOT23	3000/Tape & Reel
BAS70-06-7-F	SOT23	3000/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com 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. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
5. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 Fire Retardants.

Marking Information





K=(SAT,Shangbai Assembly / test site)
C=(CAT / DTC , ChengDu Assembly / test site)
xx = Product Type Marking Code:
73, K7C = BAS70
74, K7D = BAS70-04
75, K7E = BAS70-05
76, K7F = BAS70-06
YM = Date Code Marking
Y = Year (ex: T = 2006)
M = Month (ex: 9 = September)

Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	M	N	P	R	S	T	U	V	W	X	Y	Z	A	B	C

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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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	70	V
RMS Reverse Voltage	$V_{R(RMS)}$	49	V
Maximum Forward Continuous Current (Note 6)	I_{FM}	70	mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 1.0s	I_{FSM}	100	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{\theta JA}$	625	°C/W
Operating Junction Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	70	—	V	I_R = 10µA
Forward Voltage	V_F	—	410 1000	mV	t_p <300µs, I_F = 1.0mA t_p <300µs, I_F = 15mA
Reverse Current (Note 7)	I_R	—	100	nA	t_p <300µs, V_R = 50V
Total Capacitance	C_T	—	2.0	pF	V_R = 0V, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	5.0	ns	I_F = I_R = 10mA to I_R = 1.0mA, R_L =100Ω

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

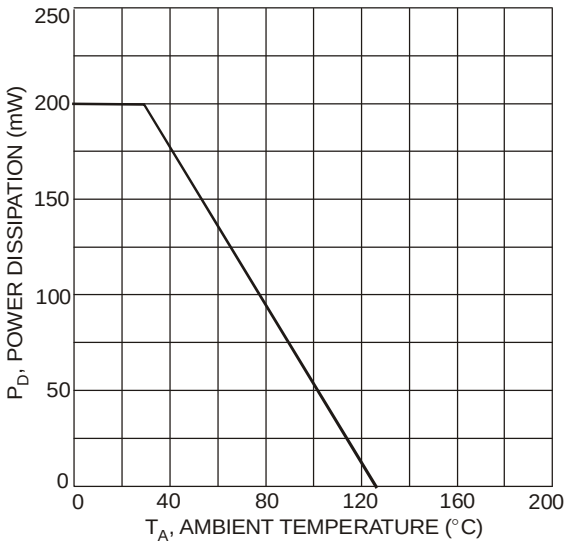

Figure 1 Power Derating Curve, Total Package

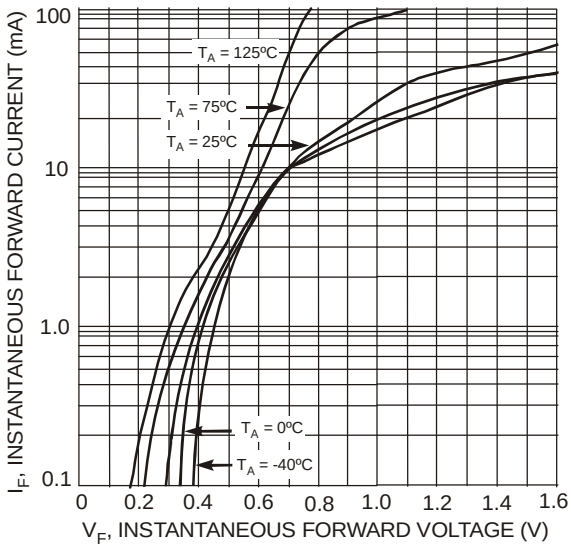

Figure 2 Typical Forward Characteristics

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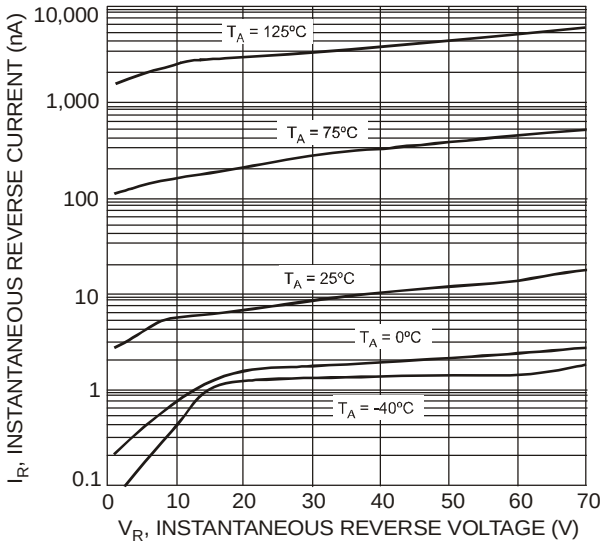


Figure 3 Typical Reverse Characteristics

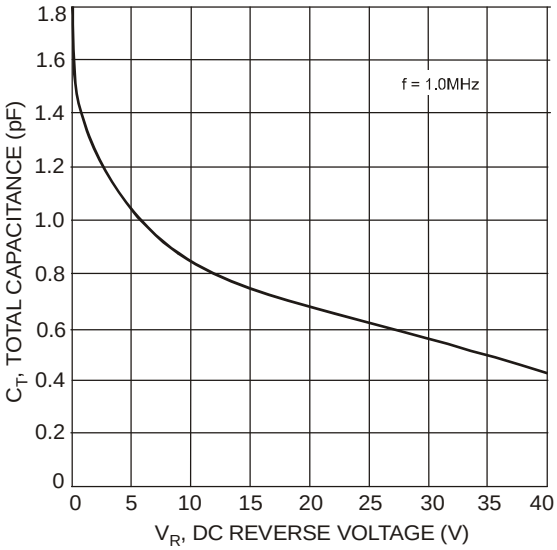
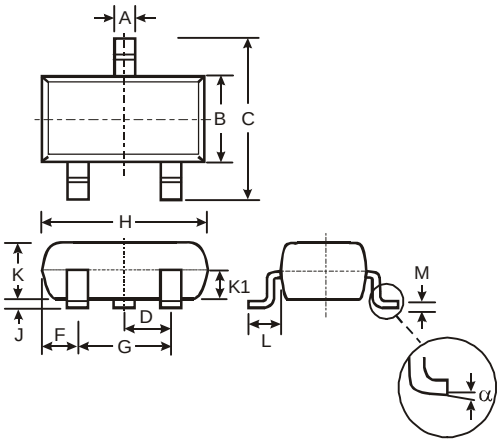


Figure 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

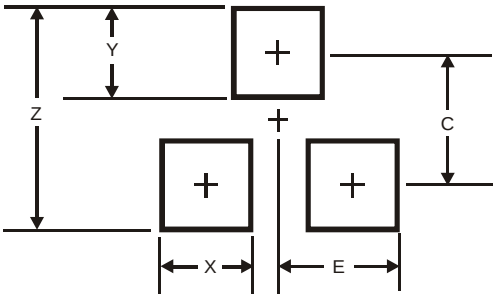
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOT23			
Dim	**Min**	**Max**	**Typ**
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	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
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
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	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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