

Features

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Ultra-Small Surface Mount Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([BAS70WQ /-04Q /-05Q /-06Q](#))**

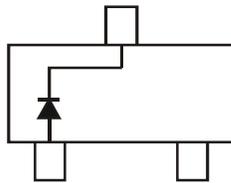
Mechanical Data

- Package: SOT323
- Package Material: Molded Plastic, UL Flammability Rating 94V
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams Below
- Weight: 0.006 grams (Approximate)

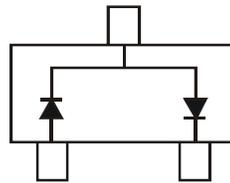
SOT323 (Standard)



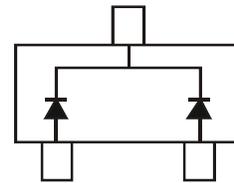
Top View



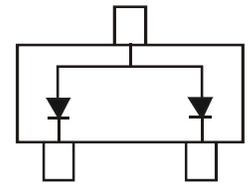
BAS70W



BAS70W-04



BAS70W-05



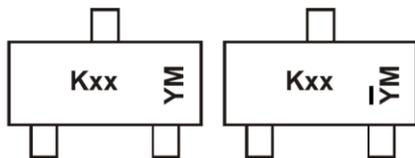
BAS70W-06

Ordering Information (Note 4)

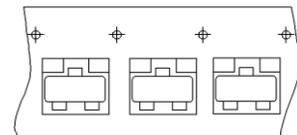
Part Number	Package	Packing	
		Qty.	Carrier
BAS70W-7-F	SOT323 (Standard)	3,000	Tape & Reel
BAS70W-04-7-F	SOT323 (Standard)	3,000	Tape & Reel
BAS70W-05-7-F	SOT323 (Standard)	3,000	Tape & Reel
BAS70W-06-7-F	SOT323 (Standard)	3,000	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



Kxx = Product Type Marking Code
 K73 = BAS70W
 K74 = BAS70W-04
 K75 = BAS70W-05
 K76 = BAS70W-06
 YM & Y̅M = Date Code Marking
 Y & Y̅ = Year (ex: J = 2022)
 M = Month (ex: 9 = September)



Date Code Key

Year	2003	...	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	P	...	J	K	L	M	N	O	P	R	S	T
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

Maximum Ratings @T_A = +25°C, unless otherwise specified.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{R(RM)}	70	V
Working Peak Reverse Voltage	V _{R(WM)}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	49	V
Forward Continuous Current	I _F	70	mA
Non-Repetitive Peak Forward Surge Current @ t _p < 1.0s	I _{FSM}	100	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R _{θJA}	625	°C/W
Operating 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 6)	V _{(BR)R}	70	—	—	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 6)	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, I _{rr} = 0.1 x I _R , R _L = 100Ω

- Notes:
- Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Incorporated's suggested pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
 - Short duration pulse test used to minimize self-heating effect.

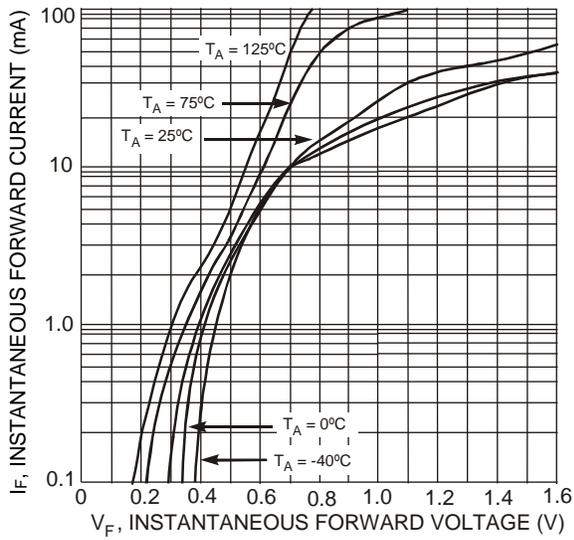


Fig. 1 Typical Forward Characteristics

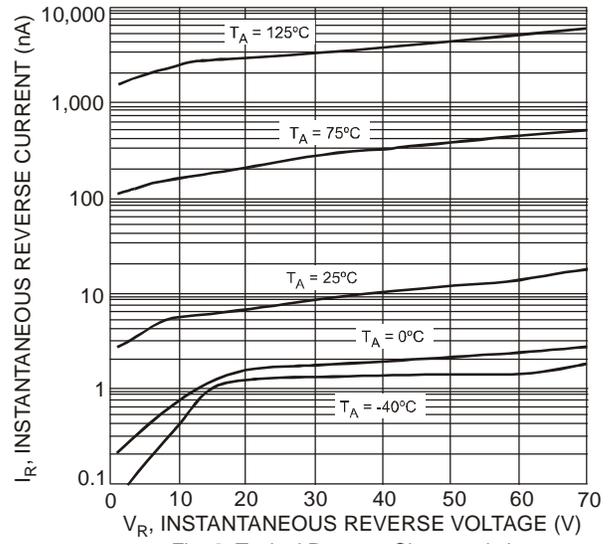


Fig. 2 Typical Reverse Characteristics

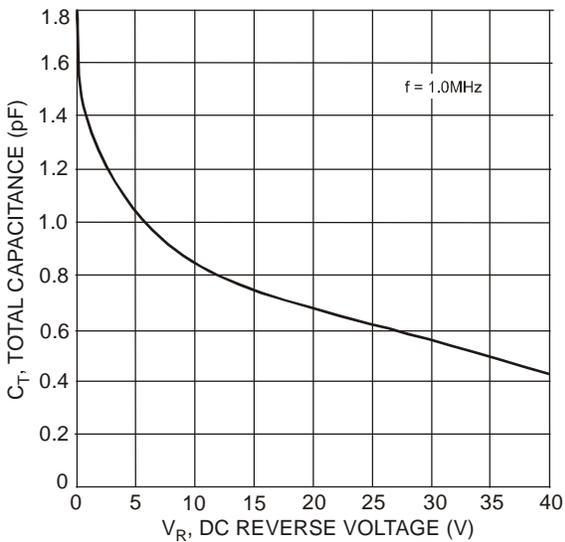


Fig. 3 Total Capacitance vs. Reverse Voltage

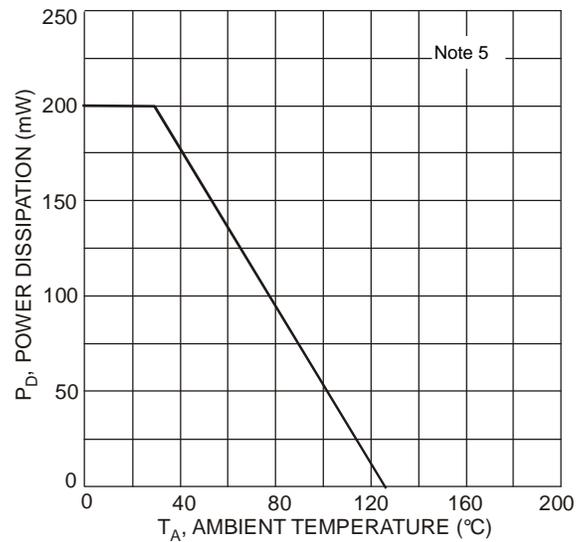
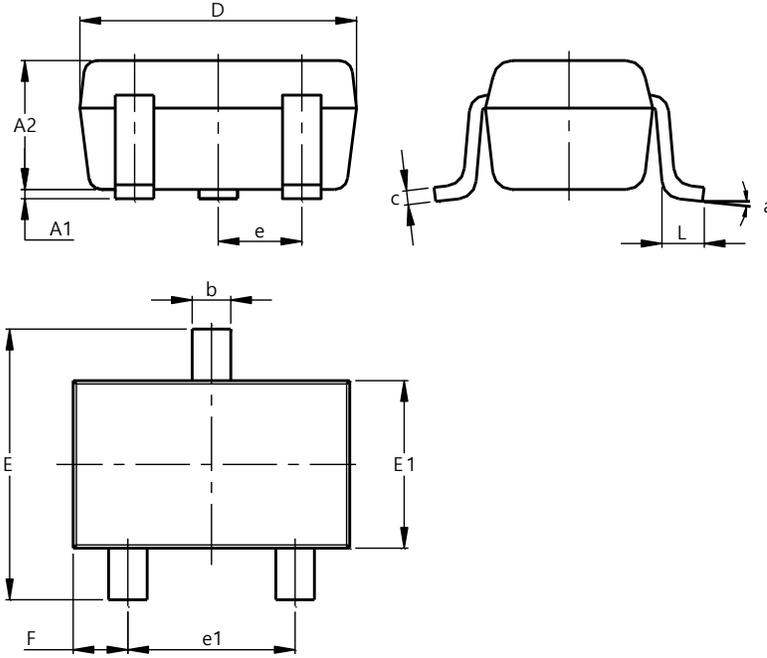


Fig. 4 Power Derating Curve, Total Package

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT323 (Standard)

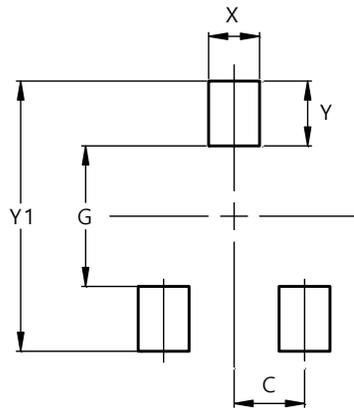


SOT323 (Standard)			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.80	1.00	0.90
b	0.20	0.40	0.30
c	0.08	0.18	0.13
D	1.80	2.20	2.00
E	2.00	2.45	2.225
E1	1.15	1.35	1.25
e	--	--	0.65
e1	1.20	1.40	1.30
F	0.25	0.475	0.3625
L	0.25	0.46	0.355
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT323 (Standard)



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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