

BAS70-7-F Datasheet



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DiGi Electronics Part Number	BAS70-7-F-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	BAS70-7-F
Description	DIODE SCHOTTKY 70V 70mA SOT23-3
Detailed Description	Diode 70 V 70mA Surface Mount SOT-23-3

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Purchase and inquiry

Manufacturer Product Number:

BAS70-7-F

Series:

-

Technology:

Schottky

Current - Average Rectified (Io):

70mA

Speed:

Small Signal \leq 200mA (Io), Any Speed

Current - Reverse Leakage @ Vr:

100 nA @ 50 V

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-23-3

Base Product Number:

BAS70

Manufacturer:

Diodes Incorporated

Product Status:

Active

Voltage - DC Reverse (Vr) (Max):

70 V

Voltage - Forward (Vf) (Max) @ If:

1 V @ 15 mA

Reverse Recovery Time (trr):

5 ns

Capacitance @ Vr, F:

2pF @ 0V, 1MHz

Package / Case:

TO-236-3, SC-59, SOT-23-3

Operating Temperature - Junction:

-55°C ~ 125°C

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0070

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99


BAS70/ -04/ -05/ -06
SURFACE-MOUNT SCHOTTKY BARRIER DIODE
Product Summary

V_R (V)	I_F (mA)	V_F MAX (V) @ +25°C	I_R MAX (μA) @ +25°C
70	1.0	0.41	0.1

Description

The 70mA surface-mount Schottky Barrier Diode in SOT23 package, offers low-forward voltage drop and fast switching capability, designed with PN Junction Guard Ring for Transient and ESD Protection.

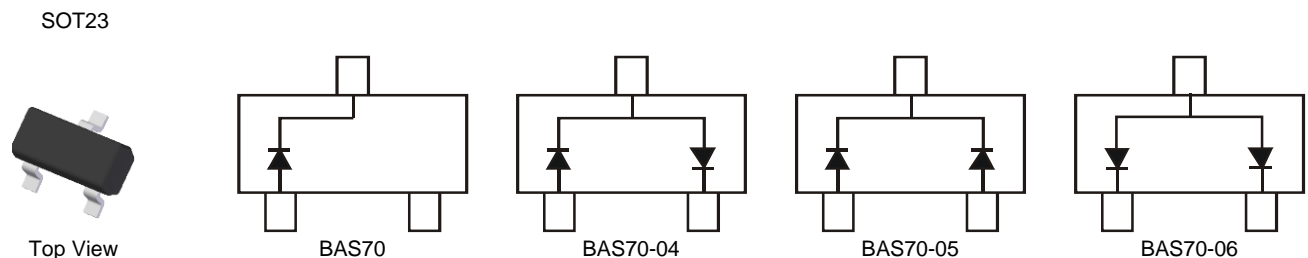
Features and Benefits

- 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)**
- **The BAS70-04Q is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: SOT23
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208. Lead Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe) e3
- Polarity: See Diagrams Below
- Weight: 0.008 grams (Approximate)

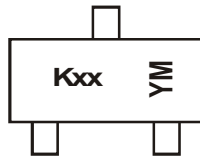
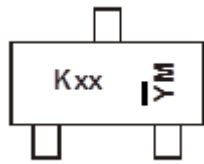

Ordering Information (Notes 4 & 5)

Part Number	Package	Packing	
		Qty.	Carrier
BAS70-7-F	SOT23	3000	Tape & Reel
BAS70-04-7-F	SOT23	3000	Tape & Reel
BAS70-04Q-7-F	SOT23	3000	Tape & Reel
BAS70-04Q-13-F	SOT23	10000	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) & 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/>.
 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.


BAS70/ -04/ -05/ -06

Marking Information



Kxx = Product Type Marking Code:

K7C = BAS70

K7D = BAS70-04&BAS70-04Q

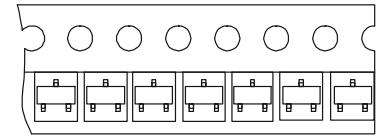
K7E = BAS70-05

K7F = BAS70-06

YM & Y̅M = Date Code Marking

Y = Year (ex: K = 2023)

M = Month (ex: 2 = Feb)



Date Code Key

Year	2007	...	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Code	U	...	K	L	M	N	P	R	S	T	U	V

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 _{RRM}	70	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
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 _{θJA}	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
Reverse Recovery Time (For BAS70-04 Only)	t _{RR}	—	2.0	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/package-outlines.html>.

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



BAS70/ -04/ -05/ -06

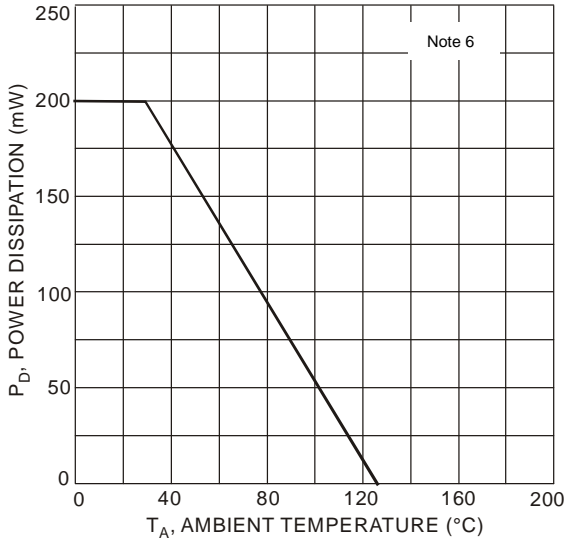


Figure 1 Power Derating Curve, Total Package

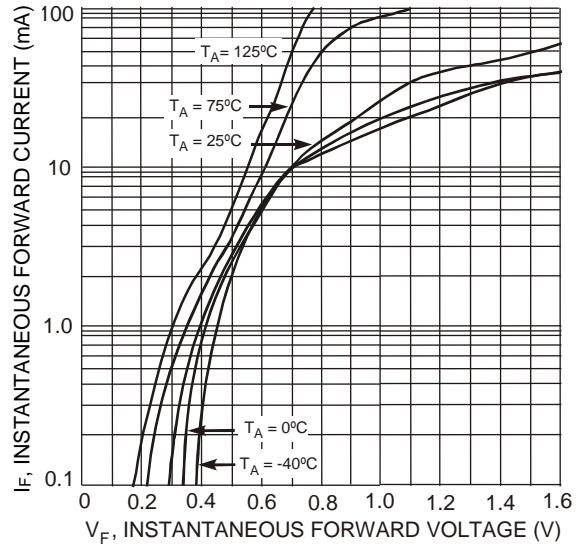


Figure 2 Typical Forward Characteristics

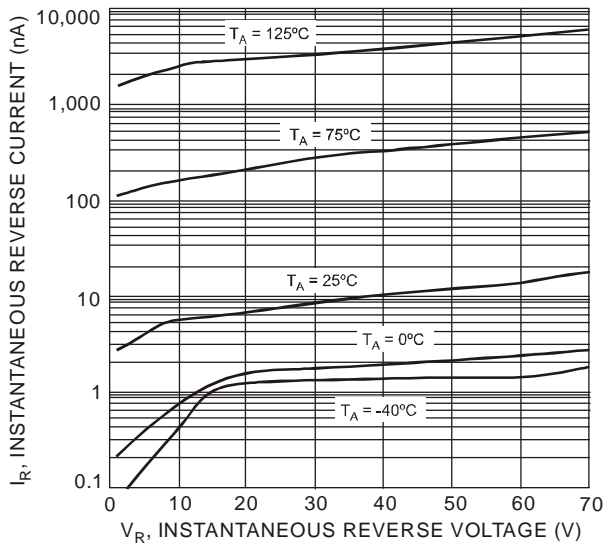


Figure 3 Typical Reverse Characteristics

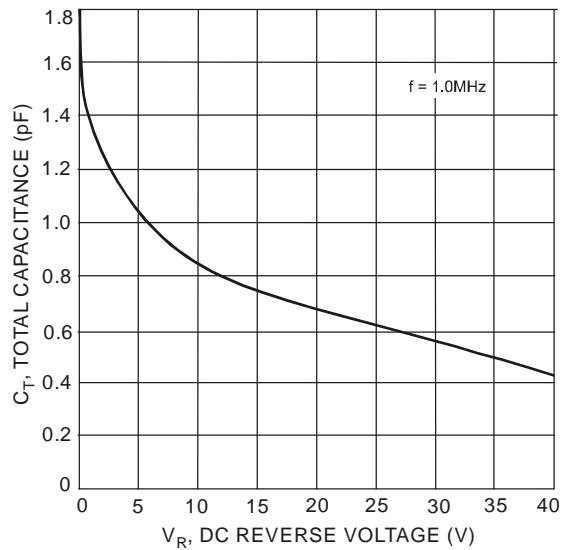
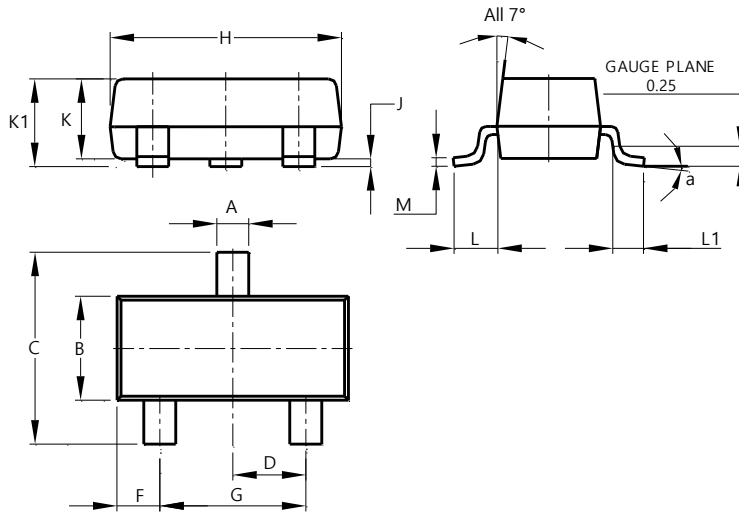


Figure 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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

SOT23

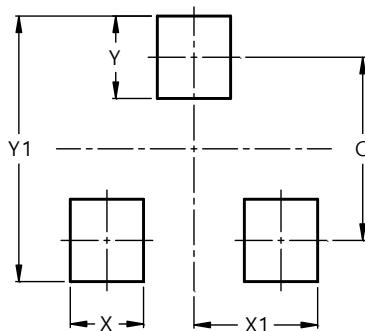


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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