BAS70TW /DW-04 /DW-05 /DW-06 /BRW

SURFACE MOUNT SCHOTTKY BARRIER DIODE ARRAYS

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	0.10

Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- 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 DIODES™ BAS70DW-05Q 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/
- **An Automotive-Compliant Part is Available Under Separate Datasheet (BAS70TWQ_BAS70DW-04Q)**

Description and Applications

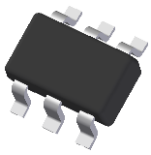
This Schottky Barrier Arrays is designed with low leakage performance in a variety of configurations. This reduces component placement costs by requiring only one component. Designed to meet AEC-Q101 requirements. Configurations are ideally suited to use as:

- Polarity protection diodes
- Rail-to-rail data line protection for two data lines
- Multiplexing circuits
- High-efficiency, low-current bridge rectifier circuits
- Re-circulating diodes
- Switching diodes

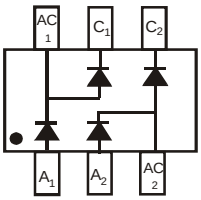
Mechanical Data

- Package: SOT363
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Orientation: See Diagrams Below
- Weight: 0.006 grams (Approximate)

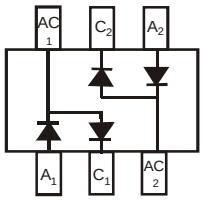
SOT363 (Standard)



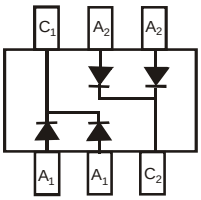
Top View



BAS70BRW



BAS70DW-04*



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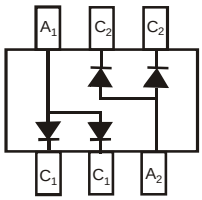

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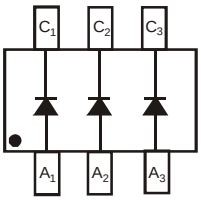


BAS70TW

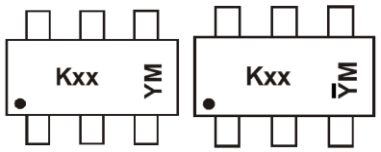
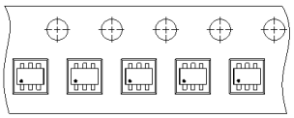
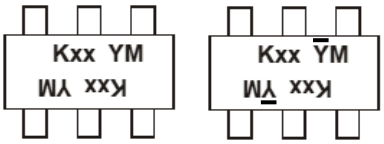
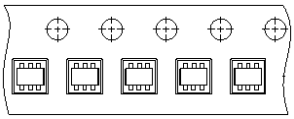
*Symmetrical configuration, no orientation indicator.

Ordering Information (Notes 4 & 5)

Part Number	Package	Packing	
		Qty.	Carrier
BAS70DW-04-7-F	SOT363 (Standard)	3000	Tape & Reel
BAS70DW-04-13-F	SOT363 (Standard)	10000	Tape & Reel
BAS70DW-05-7-F	SOT363 (Standard)	3000	Tape & Reel
BAS70DW-05Q-7-F	SOT363 (Standard)	3000	Tape & Reel
BAS70DW-06-7-F	SOT363 (Standard)	3000	Tape & Reel
BAS70BRW-7-F	SOT363 (Standard)	3000	Tape & Reel
BAS70TW-7-F	SOT363 (Standard)	3000	Tape & Reel
BAS70TW-13-F	SOT363 (Standard)	10000	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. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Products manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
5. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information

Part Number	Marking Information
BAS70BRW-7-F BAS70TW-7-F BAS70TW-13-F	 Kxx = Product Type Marking Code K75 = BAS70BRW K73 = BAS70TW YM & $\overline{Y}$M = Date Code Marking Y & $\overline{Y}$ = Year (ex: J = 2022) M = Month (ex: 9 = September) 
BAS70DW-04-7-F BAS70DW-04-13-F BAS70DW-05-7-F BAS70DW-05Q-7-F BAS70DW-06-7-F	 Kxx = Product Type Marking Code K74 = BAS70DW-04 K71 = BAS70DW-05 K76 = BAS70DW-06 YM & $\overline{Y}$M = Date Code Marking Y & $\overline{Y}$ = Year (ex: J = 2022) M = Month (ex: 9 = September) 

Date Code Key

Year	2002	…	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	O	…	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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	70	V
RMS Reverse Voltage	$V_{R(RMS)}$	49	V
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 7)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 7)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J T_{STG}	-55 to +125 -65 to +125	°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	—	V	I_R = 10μA
Forward Voltage	V_F	— —	410 1000	mV 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: 6. Short duration pulse test used to minimize self-heating effect.
7. 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.

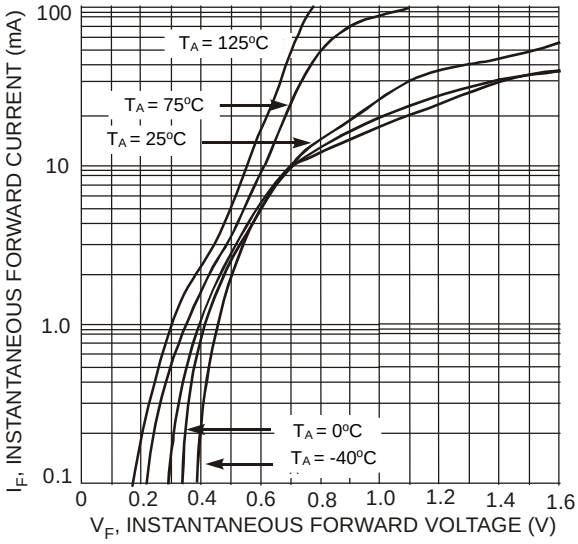


Fig. 1 Typical Forward Characteristics

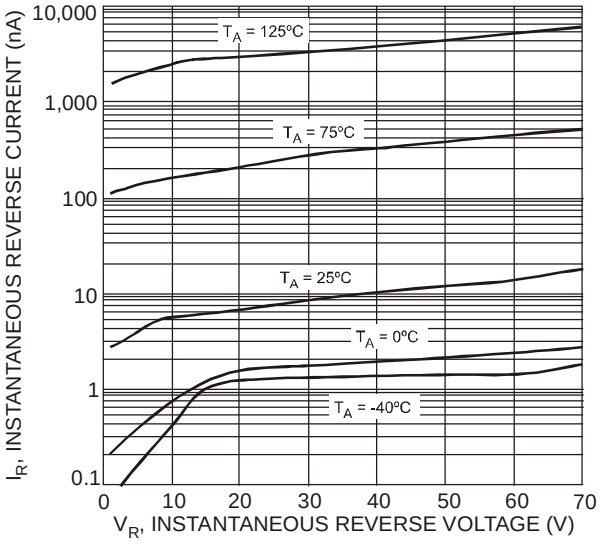


Fig. 2 Typical Reverse Characteristics

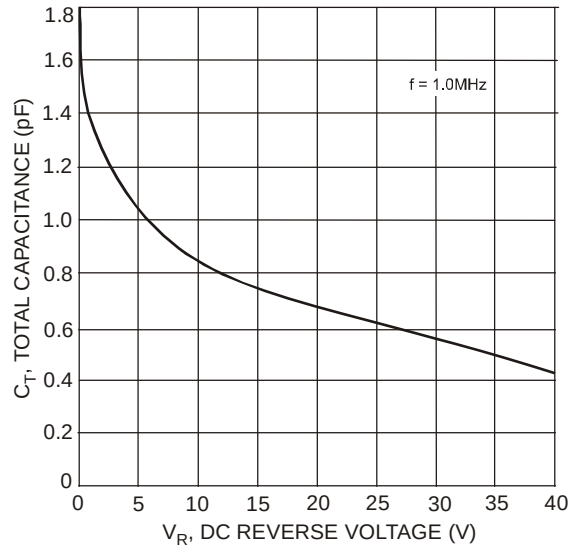


Fig. 3 Total Capacitance vs. Reverse Voltage

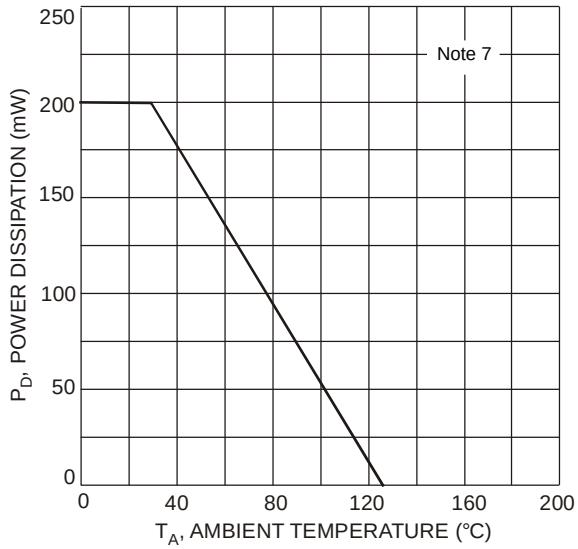
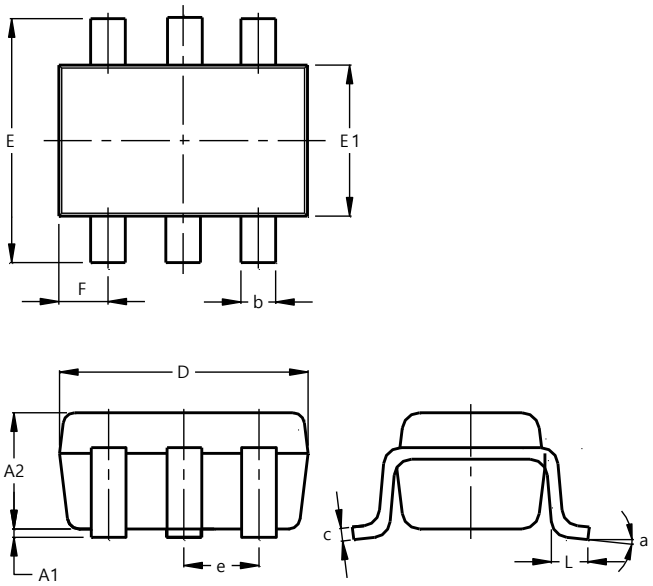


Fig. 4 Power Derating Curve, Total Package

Package Outline Dimensions

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

SOT363 (Standard)

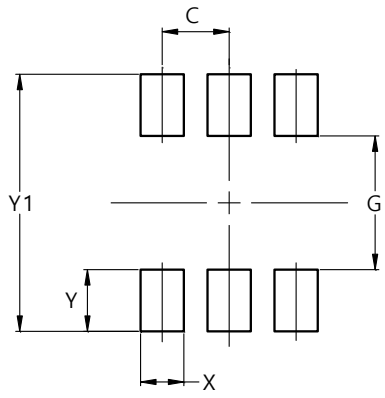


SOT363 (Standard)			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.80	1.00	0.90
b	0.10	0.35	0.225
c	0.08	0.22	0.15
D	1.80	2.20	2.00
E	2.00	2.45	2.225
E1	1.15	1.35	1.25
e	--	--	0.65
F	0.25	0.45	0.35
L	0.25	0.46	0.355
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT363 (Standard)



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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