



# THE DATASHEET OF BAS70TW-7



## Product Summary

$V_R$ (V)	$I_F$ (mA)	$V_{F\text{ MAX}}$ (V) @ +25°C	$I_{R\text{ MAX}}$ (μA) @ +25°C
70	1.0	0.41	0.10

## Description and Applications

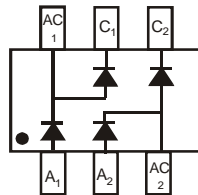
This Schottky Barrier Arrays is designed with low leakage performance in a variety of configurations. This reduces component placement costs by requiring only one component. Designed to meet AEC-Q101 requirements. Configurations are ideally suited to use as:

- 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

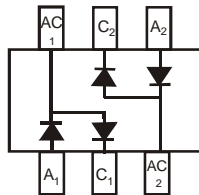
SOT363 (Standard)



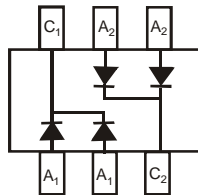
Top View



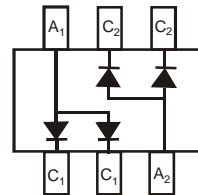
BAS70BRW



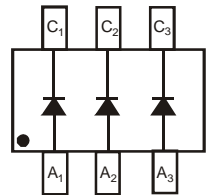
BAS70DW-04\*



BAS70DW-05\*



BAS70DW-06\*



BAS70TW

\*Symmetrical configuration, no orientation indicator.

## 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](#))**

## 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)

## 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		<p>Kxx = Product Type Marking Code                      K75 = BAS70BRW                      K73 = BAS70TW                      YM &amp; ȲM = Date Code Marking                      Y &amp; Ȳ = Year (ex: J = 2022)                      M = Month (ex: 9 = September)</p>
BAS70DW-04-7-F BAS70DW-04-13-F BAS70DW-05-7-F BAS70DW-05Q-7-F BAS70DW-06-7-F		<p>Kxx = Product Type Marking Code                      K74 = BAS70DW-04                      K71 = BAS70DW-05                      K76 = BAS70DW-06                      YM &amp; ȲM = Date Code Marking                      Y &amp; Ȳ = Year (ex: J = 2022)                      M = Month (ex: 9 = September)</p>

### Date Code Key

<b>Year</b>	<b>2002</b>	...	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
<b>Code</b>	O	...	J	K	L	M	N	O	P	R	S	T
<b>Month</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>Code</b>	1	2	3	4	5	6	7	8	9	O	N	D

## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	70	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	49	V
Forward Continuous Current (Note 6)	I <sub>FM</sub>	70	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	100	mA
		@ t < 1.0s	

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 7)	P <sub>D</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 7)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>J</sub>	-55 to +125	°C
	T <sub>STG</sub>	-65 to +125	

## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	70	—	V	I <sub>R</sub> = 10μA
Forward Voltage	V <sub>F</sub>	—	410	mV	t <sub>p</sub> < 300μs, I <sub>F</sub> = 1.0mA
			1000	mV	t <sub>p</sub> < 300μs, I <sub>F</sub> = 15mA
Reverse Current (Note 6)	I <sub>R</sub>	—	100	nA	t <sub>p</sub> < 300μs, V <sub>R</sub> = 50V
Total Capacitance	C <sub>T</sub>	—	2.0	pF	V <sub>R</sub> = 0V, f = 1.0MHz
Reverse Recovery Time	t <sub>RR</sub>	—	5.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA to I <sub>R</sub> = 1.0mA, I <sub>RR</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 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>.

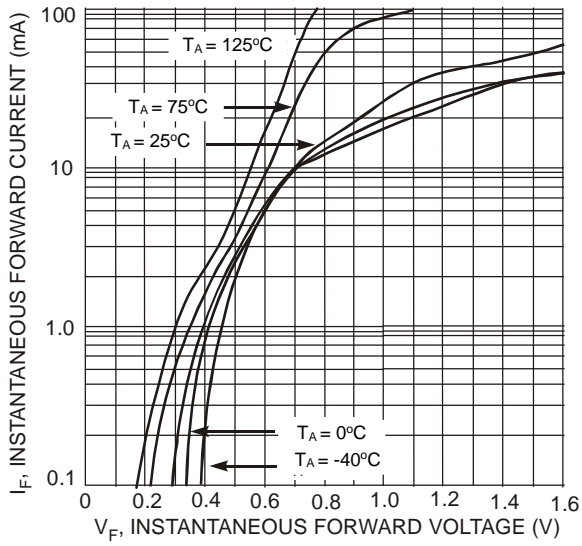


Fig. 1 Typical Forward Characteristics

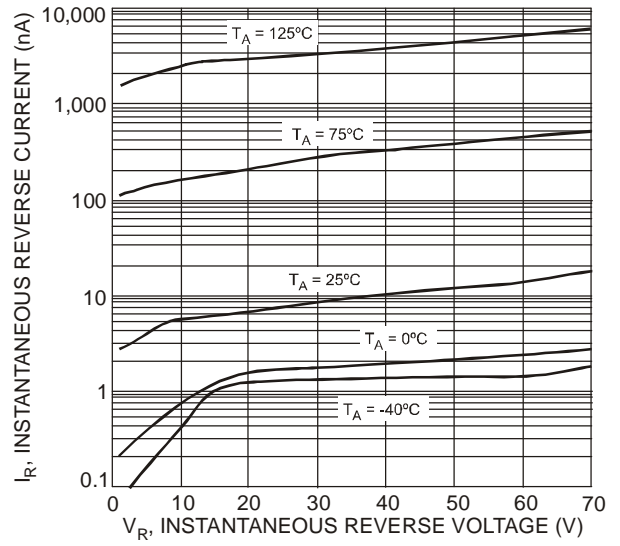


Fig. 2 Typical Reverse Characteristics

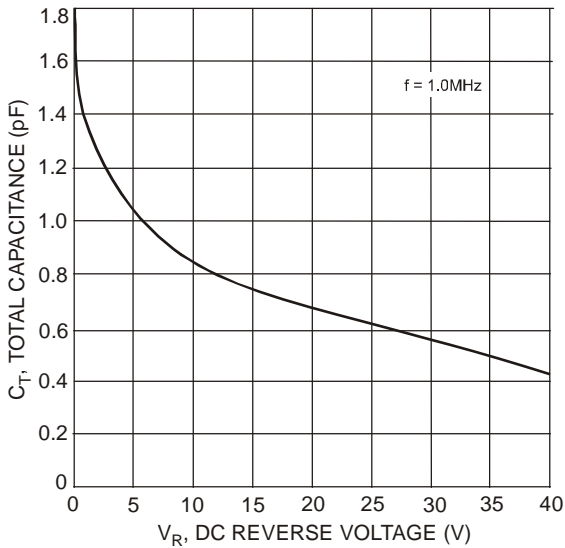


Fig. 3 Total Capacitance vs. Reverse Voltage

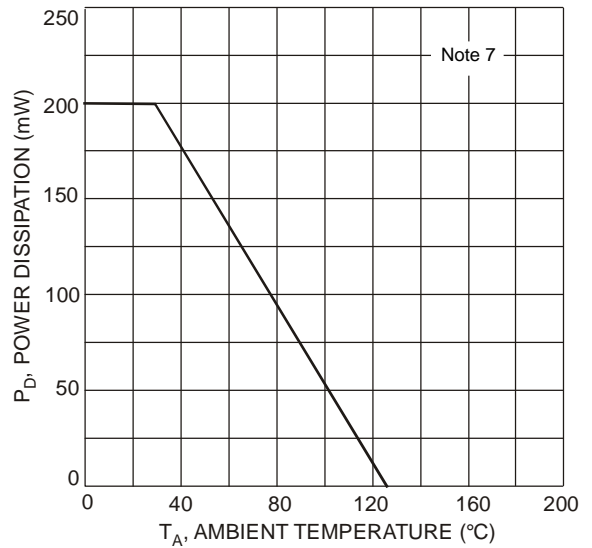
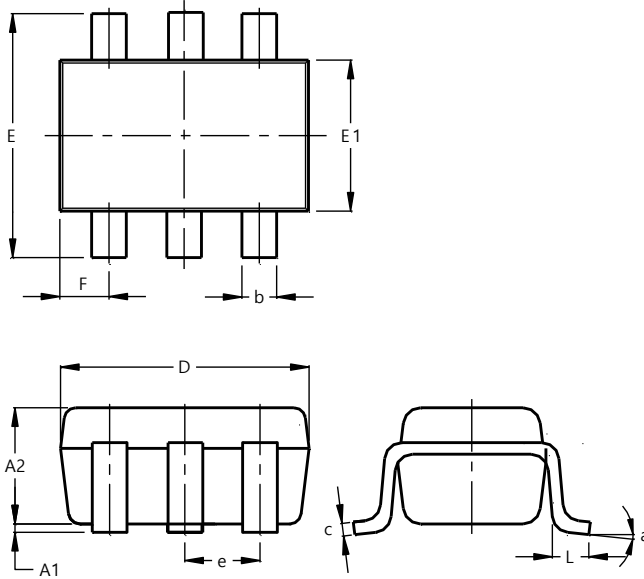


Fig. 4 Power Derating Curve, Total Package

**Package Outline Dimensions**

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

**SOT363 (Standard)**

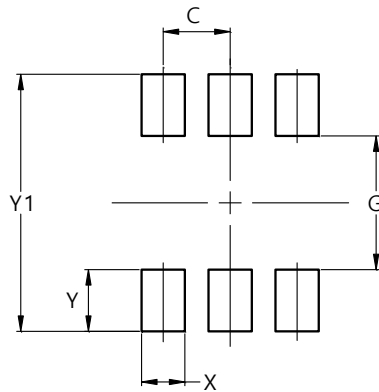


SOT363 (Standard)			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.80	1.00	0.90
b	0.10	0.35	0.225
c	0.08	0.22	0.15
D	1.80	2.20	2.00
E	2.00	2.45	2.225
E1	1.15	1.35	1.25
e	--	--	0.65
F	0.25	0.45	0.35
L	0.25	0.46	0.355
a	0°	8°	--
All Dimensions in mm			

**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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