

## 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

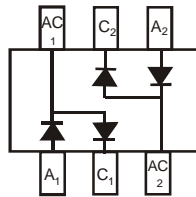
## Description and Applications

This Schottky Barrier Array 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:

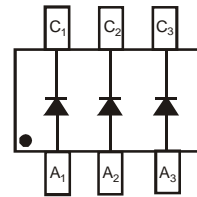
- Polarity protection diodes
- Rail-to-rail data line protections for two data lines
- Multiplexing circuits
- High-efficiency, low-current bridge rectifier circuits
- Re-circulating diodes
- Switching diodes



Top View



BAS70DW-04Q\*



BAS70TWQ

\*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™ BAS70TWQ /DW-04Q are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

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

## Mechanical Data

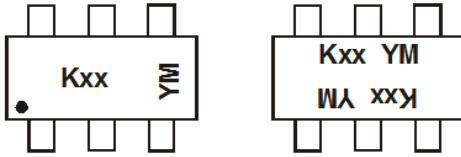
- Package: SOT363
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Solderable per MIL-STD-202, Method 208 (E3)
- Orientation: See Diagrams Below
- Weight: 0.006 grams (Approximate)

## Ordering Information (Notes 4 & 5)

Part Number	Compliance	Package	Packing	
			Qty.	Carrier
BAS70DW-04Q-7-F	Automotive	SOT363	3000	Tape & Reel
BAS70DW-04Q-13-F	Automotive	SOT363	10000	Tape & Reel
BAS70TWQ-7-F	Automotive	SOT363	3000	Tape & Reel
BAS70TWQ-13-F	Automotive	SOT363	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. Product 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



Kxx = Product Type Marking Code  
 For Symmetrical Configuration, No Orientation Indicator  
 K73 = BAS70TWQ, K74 = BAS70DW-04Q  
 YM = Date Code Marking  
 Y = Year (ex: J = 2022)  
 M = Month (ex: 5 = May)

### Date Code Key

<b>Year</b>	2018	...	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Code</b>	F	...	J	K	L	M	N	O	P	R	S	T
<b>Month</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<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>		
Working Peak Reverse Voltage	V <sub>RWM</sub>	70	V
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 @ t < 1.0s	I <sub>FSM</sub>	100	mA

## Thermal Characteristics

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

## 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 1000	mV mV	t <sub>p</sub> < 300μs, I <sub>F</sub> = 1.0mA 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:
- Short duration pulse test used to minimize self-heating effect.
  - 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>.

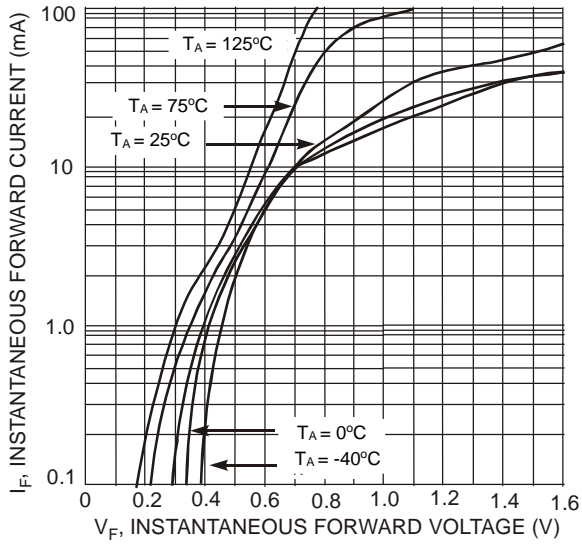


Fig. 1 Typical Forward Characteristics

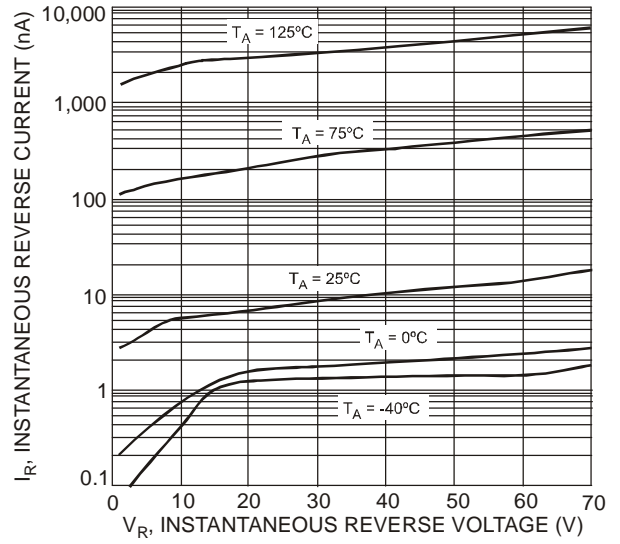


Fig. 2 Typical Reverse Characteristics

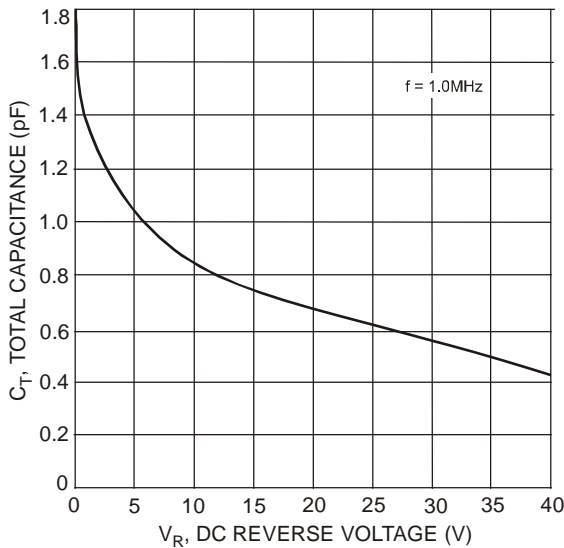


Fig. 3 Total Capacitance vs. Reverse Voltage

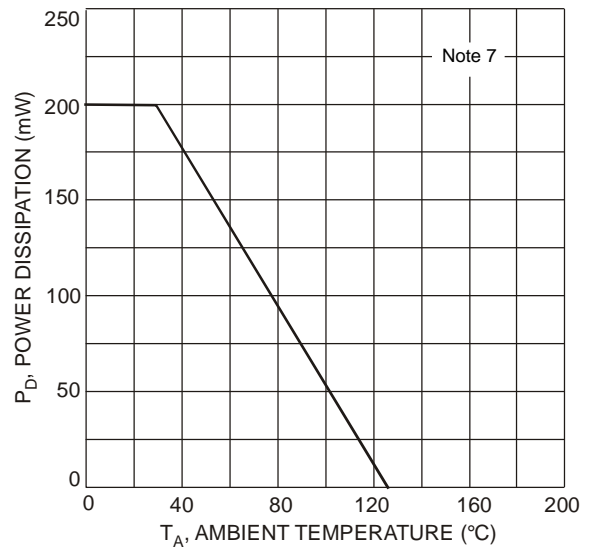
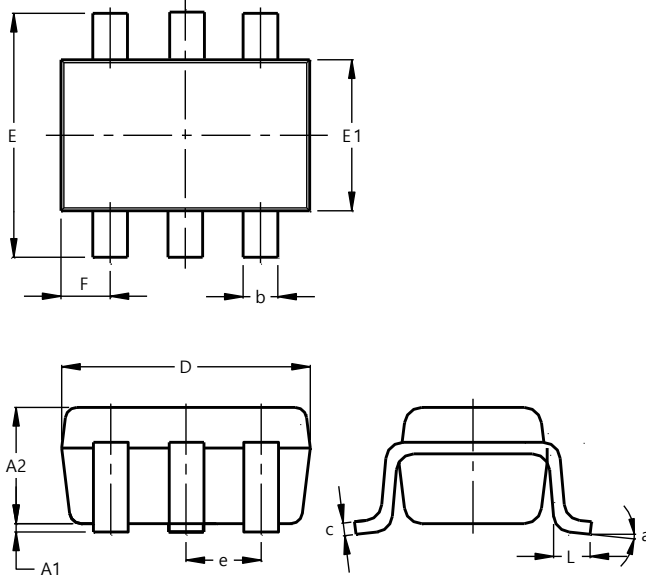


Fig. 4 Power Derating Curve, Total Package

**Package Outline Dimensions**

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

**SOT363**

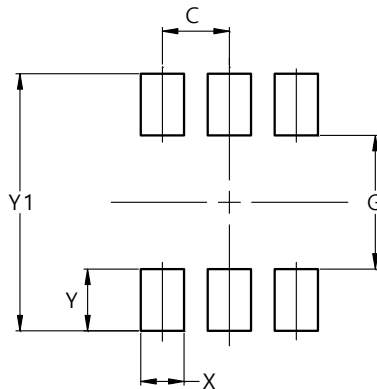


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

**Suggested Pad Layout**

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

**SOT363**



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

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