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)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Description and Applications

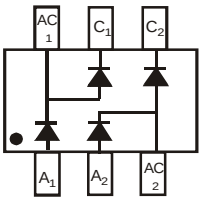
This Schottky Barrier Arrays is designed with low leakage performance in a variety of configurations. This reduces component placement costs by requiring only one component. Designed to meet AEC-Q101 requirements. Configurations are ideally suited to use as:

- Polarity Protection Diode
- Rail-to-Rail Data Line Protection for Two Data Lines
- Multiplexing Circuits
- High-Efficiency, Low-Current Bridge Rectifier Circuits
- Re-Circulating Diode
- Switching Diode

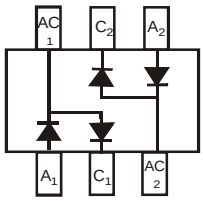
Mechanical Data

- Case: SOT363
- Case 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)

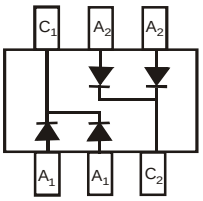
Top View



BAS70BRW



BAS70DW-04*



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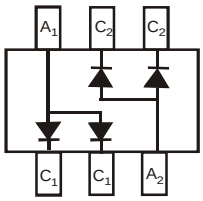

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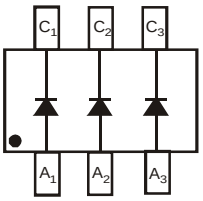


BAS70TW

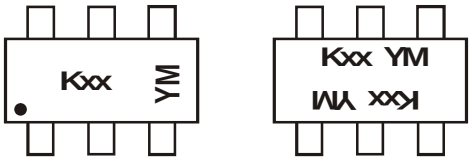
*Symmetrical configuration, no orientation indicator.

Ordering Information (Notes 5 & 6)

Part Number	Compliance	Case	Packaging
BAS70DW-04-7-F	AEC-Q101	SOT363	3000/Tape & Reel
BAS70DW-04-13-F	AEC-Q101	SOT363	10000/Tape & Reel
BAS70DW-05-7-F	AEC-Q101	SOT363	3000/Tape & Reel
BAS70DW-05Q-7-F	Automotive	SOT363	3000/Tape & Reel
BAS70DW-06-7-F	AEC-Q101	SOT363	3000/Tape & Reel
BAS70BRW-7-F	AEC-Q101	SOT363	3000/Tape & Reel
BAS70TW-7-F	AEC-Q101	SOT363	3000/Tape & Reel
BAS70TW-13-F	AEC-Q101	SOT363	10000/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/product_compliance_definitions.html.
5. 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.
6. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



Kxx = Product Type Marking Code
For Symmetrical Configuration, No Orientation Indicator
K75 = BAS70BRW
K74 = BAS70DW-04
K71 = BAS70DW-05
K76 = BAS70DW-06
K73 = BAS70TW
YM = Date Code Marking
Y = Year (ex: D = 2016)
M = Month (ex: 9 = September)

Date Code Key

Year	2016	2017	2018	2019	2020	2021	2022	2023
Code	D	E	F	G	H	I	J	K

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 7)	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 8)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 8)	$R_{\theta JA}$	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 7)	$V_{(BR)R}$	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 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, I_{RR}= 0.1 x I_R, R_L = 100Ω

Notes: 7. Short duration pulse test used to minimize self-heating effect.
8. 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.

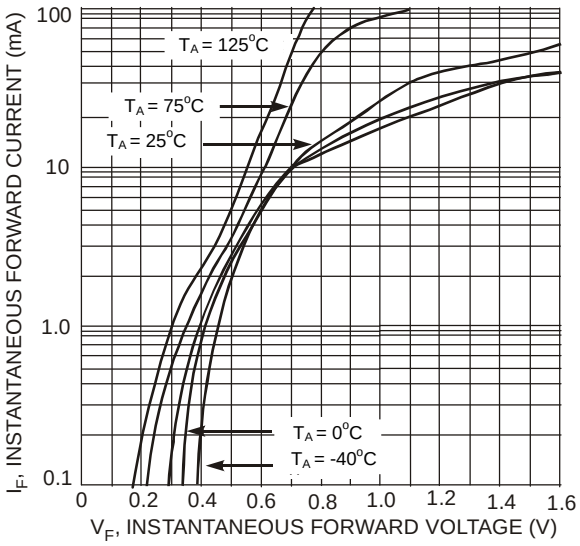


Fig. 1 Typical Forward Characteristics

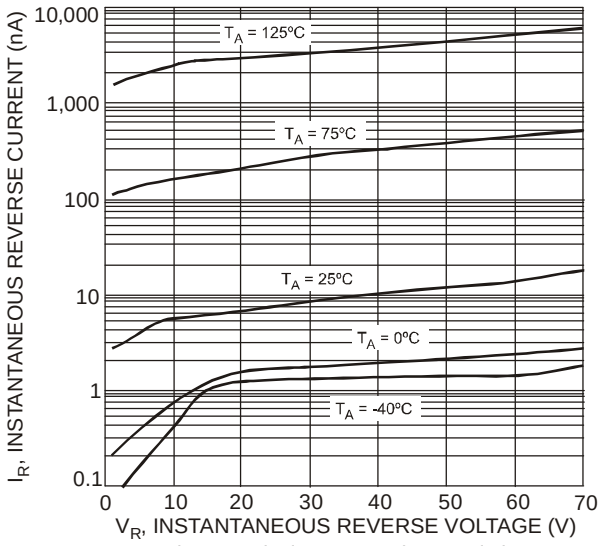


Fig. 2 Typical Reverse Characteristics

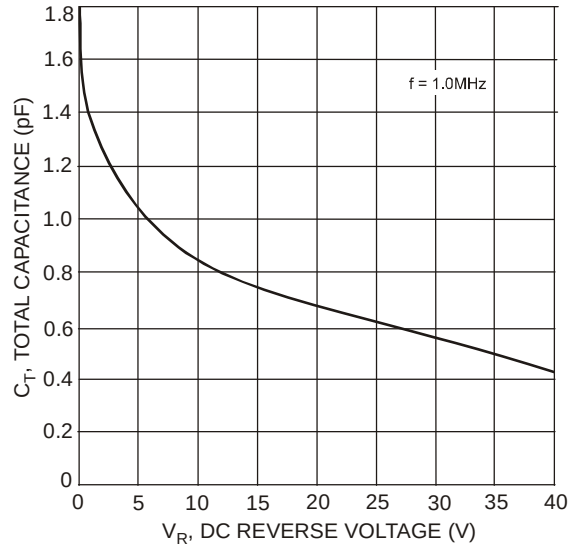


Fig. 3 Total Capacitance vs. Reverse Voltage

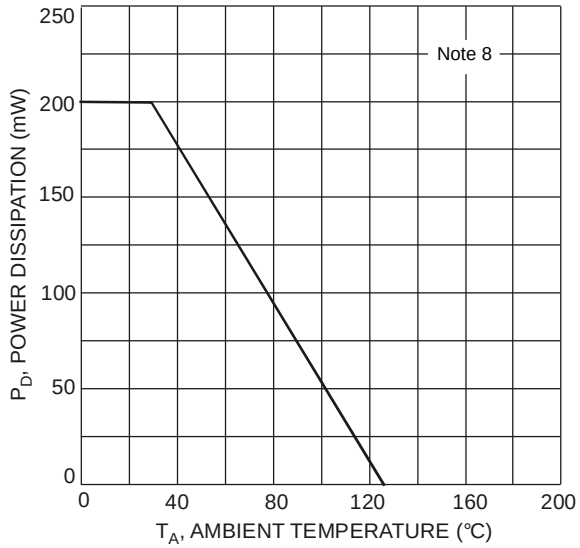
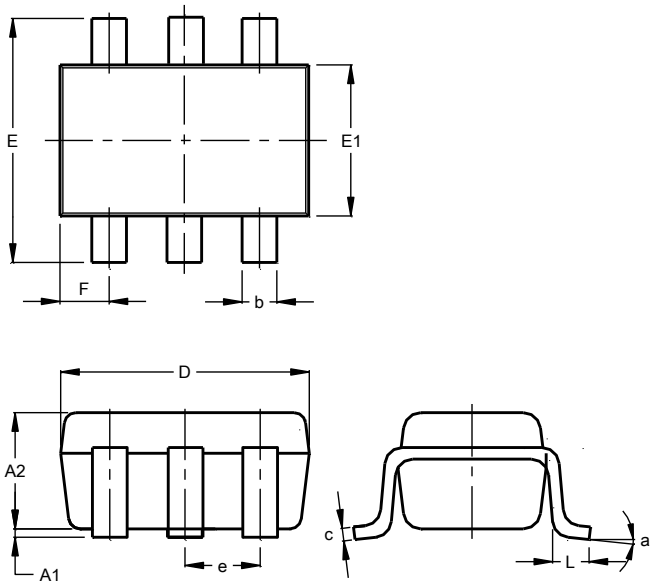


Fig. 4 Power Derating Curve, Total Package

Package Outline Dimensions

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

SOT363

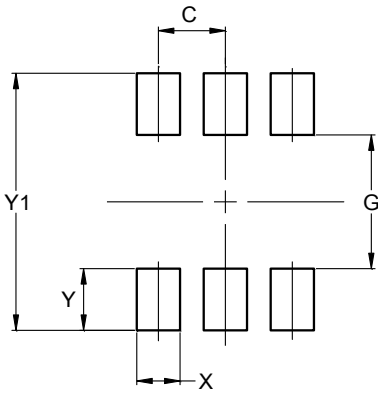


SOT363			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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