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

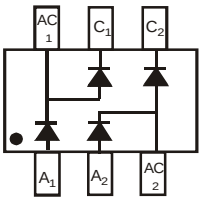
This Schottky Barrier Arrays is designed with low leakage performance in a variety of configurations. This reduces component placement costs by requiring only one component. Designed to meet AEC-Q101 requirements. Configurations are ideally suited to use as:

- 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

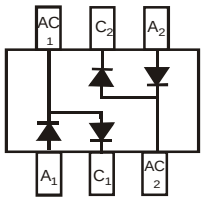
Mechanical Data

- 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)

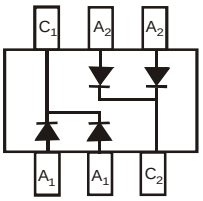
Top View



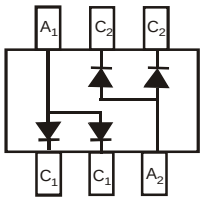
BAS70BRW



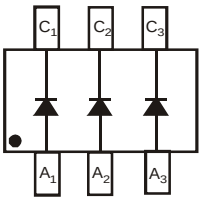
BAS70DW-04*



BAS70DW-05*



BAS70DW-06*



BAS70TW

*Symmetrical configuration, no orientation indicator.

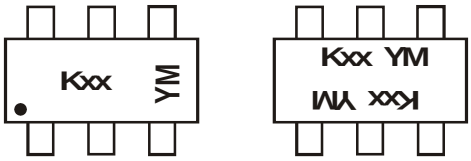
Ordering Information (Notes 5 & 6)

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.

© Diodes Incorporated

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.

© Diodes Incorporated

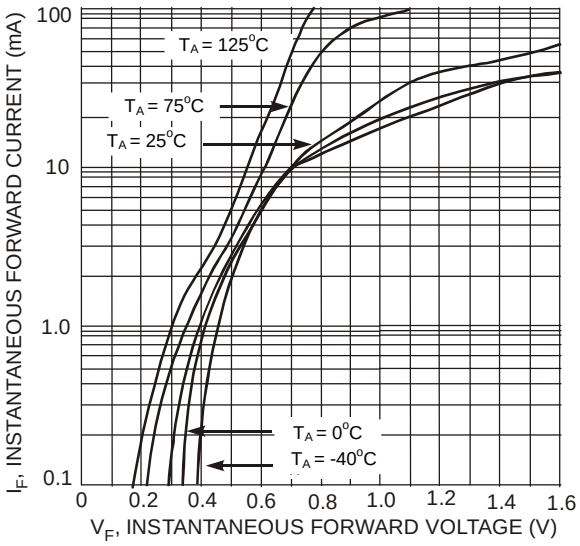


Fig. 1 Typical Forward Characteristics

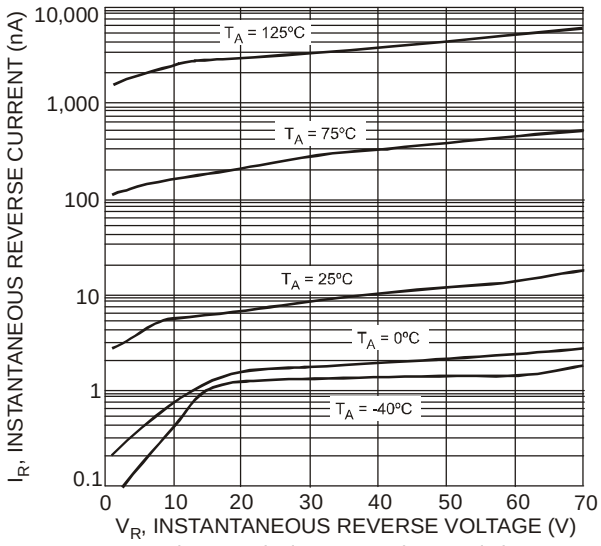


Fig. 2 Typical Reverse Characteristics

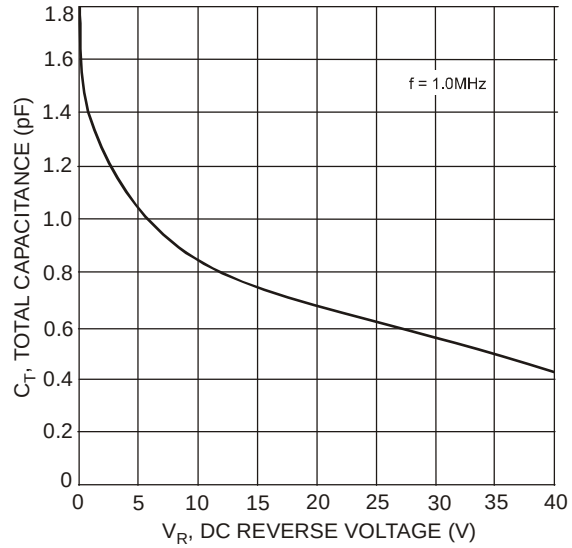


Fig. 3 Total Capacitance vs. Reverse Voltage

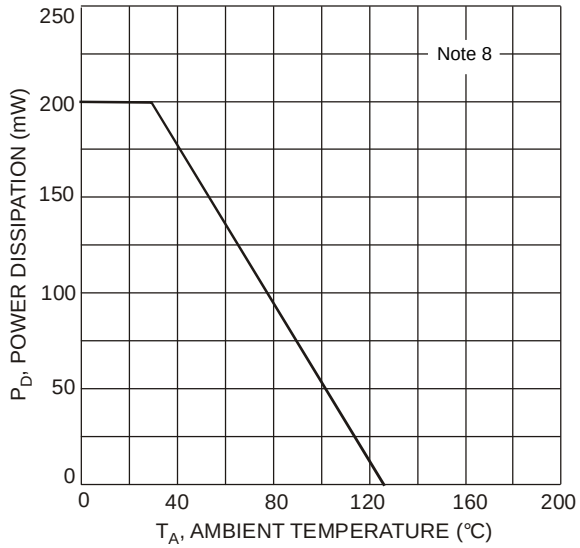


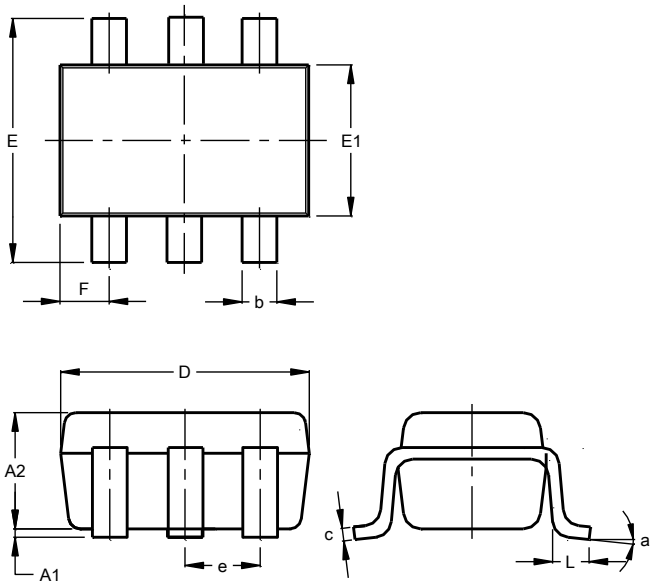
Fig. 4 Power Derating Curve, Total Package

© Diodes Incorporated

Package Outline Dimensions

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

SOT363

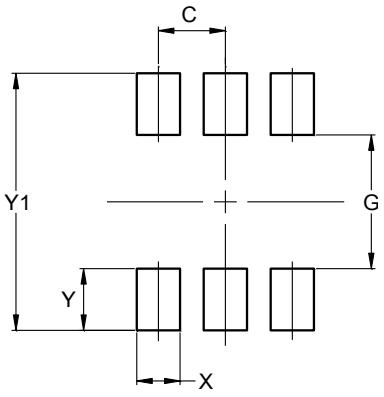


SOT363			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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

© Diodes Incorporated

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2016, Diodes Incorporated

www.diodes.com