



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} (μΑ) @ +25°C |
|--------------------|---------------------|-----------------------------------|------------------------------------|
| 70V | 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:

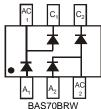
- Polarity Protection Diode
- Rail-to-Rail Data Line Protection for Two Data Lines.
- Multiplexing Circuits.
- High-efficiency, Low-current Bridge Rectifier Circuits
- Re-circulating Diode
- Switching Diode

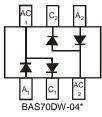
Mechanical Data

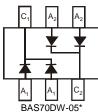
- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Solderable per MIL-STD-202, Method 208@3
- Orientation: See Diagrams Below
- Weight: 0.006 grams (Approximate)



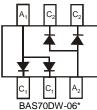


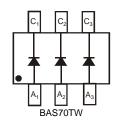












*Symmetrical configuration, no orientation indicator.

Ordering Information (Note 5)

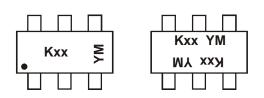
| | | _ | |
|-----------------|------------|---------|------------------|
| Part Number | Compliance | Case | Packaging |
| BAS70DW-04-7-F | AEC-Q101 | SOT-363 | 3000/Tape & Reel |
| BAS70DW-05-7-F | AEC-Q101 | SOT-363 | 3000/Tape & Reel |
| BAS70DW-05Q-7-F | Automotive | SOT-363 | 3000/Tape & Reel |
| BAS70DW-06-7-F | AEC-Q101 | SOT-363 | 3000/Tape & Reel |
| BAS70BRW-7-F | AEC-Q101 | SOT-363 | 3000/Tape & Reel |
| BAS70TW-7-F | AEC-Q101 | SOT-363 | 3000/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. 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 http://www.diodes.com/datasheets/ap02007.pdf.



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: B = 2014)

M = Month (ex: 9 = September)

Date Code Key

| Date Code i | 10, | | | | | | | | | | | | | | |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Year | 2001 | 2002 | 2003 | 2004 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
| Code | М | N | 0 | Р | Α | В | С | D | Е | F | G | Н | I | J | K |
| Month | Jan | Fe | b | Mar | Apr | May | Ju | n | Jul | Aug | Sep | Oc | t l | VoV | Dec |
| Code | 1 | 2 | | 3 | 4 | 5 | 6 | | 7 | 8 | 9 | 0 | | N | D |

| 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 1) | 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 1) | P_{D} | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 1) | $R_{	heta JA}$ | 625 | °C/W |
| Operating and Storage Temperature Range | T _J T _{STG} | -55 to +125 -65 to +125 | °C |

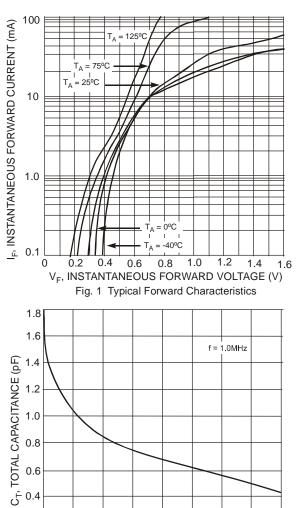
Electrical Characteristics @T_A = +25°C unless otherwise specified

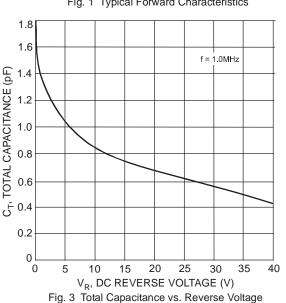
| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|------------------------------------|-----------------|-----|-------------|------|---|
| Reverse Breakdown Voltage (Note 2) | $V_{(BR)R}$ | 70 | _ | V | $I_R = 10\mu A$ |
| Forward Voltage | V _F | _ | 410 1000 | | t_{p} <300µs, I _F = 1.0mA t_{p} <300µs, I _F = 15mA |
| Reverse Current (Note 2) | I _R | _ | 100 | nA | $t_p < 300 \mu s, V_R = 50 V$ |
| Total Capacitance | C _T | _ | 2.0 | pF | $V_R = 0V, f = 1.0MHz$ |
| Reverse Recovery Time | t _{rr} | _ | 5.0 | ns | $I_F = I_R = 10\text{mA} \text{ to } I_R = 1.0\text{mA},$ $I_{rr} = 0.1 \text{ x } I_R, R_L = 100\Omega$ |

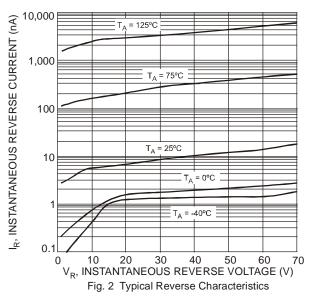
Notes:

- 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/datasheets/ap02001.pdf.









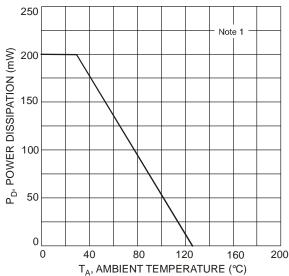
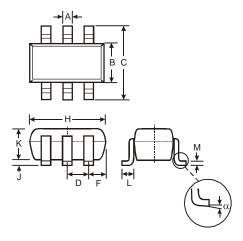


Fig. 4 Power Derating Curve, Total Package



Package Outline Dimensions

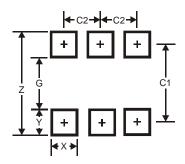
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



| | SOT363 | | | | | | | |
|-----|----------------------|---------|-------|--|--|--|--|--|
| Dim | Min | Max | Тур | | | | | |
| Α | 0.10 | 0.30 | 0.25 | | | | | |
| В | 1.15 | 1.35 | 1.30 | | | | | |
| С | 2.00 | 2.20 | 2.10 | | | | | |
| D | | 0.65 Ty | γp | | | | | |
| F | 0.40 | 0.45 | 0.425 | | | | | |
| Н | 1.80 | 2.20 | 2.15 | | | | | |
| J | 0 | 0.10 | 0.05 | | | | | |
| K | 0.90 | 1.00 | 1.00 | | | | | |
| L | 0.25 | 0.40 | 0.30 | | | | | |
| М | 0.10 | 0.22 | 0.11 | | | | | |
| α | 0° | 8° | - | | | | | |
| All | All Dimensions in mm | | | | | | | |

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 2.5 |
| G | 1.3 |
| Х | 0.42 |
| Y | 0.6 |
| C1 | 1.9 |
| C2 | 0.65 |





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