Lead-free Green

## SURFACE MOUNT SCHOTTKY BARRIER DIODE ARRAYS

Please click here to visit our online spice models database.

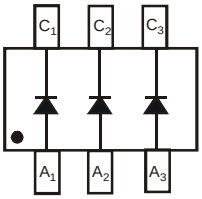
## Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- **Lead Free/RoHS Compliant (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **"Green" Device (Notes 4 and 5)**

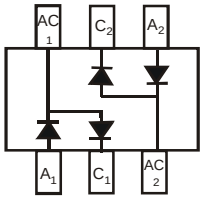
## Mechanical Data

- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)

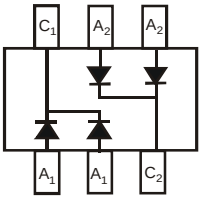
Top View



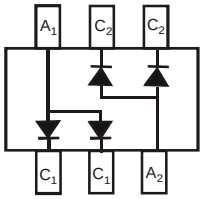

BAS40TW



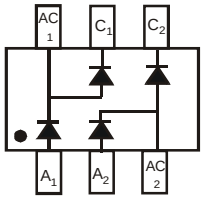

BAS40DW-04




BAS40DW-05




BAS40DW-06




BAS40BRW

## Maximum Ratings @$T_A$ = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 40 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 28 | V |
| Forward Continuous Current (Note 1) | $I_{FM}$ | 200 | mA |
| Non-Repetitive Peak Forward Surge Current @ t < 1.0s | $I_{FSM}$ | 600 | mA |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Power Dissipation (Note 1) | $P_D$ | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 625 | °C/W |
| Operating Temperature Range | $T_J$ | -55 to +125 | °C |
| Storage Temperature Range | $T_{STG}$ | -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) | $V_{(BR)R}$ | 40 | — | V | $I_R$ = 10μA |
| Forward Voltage | $V_F$ | — | 380<br>1000 | mV<br>mV | $I_F$ = 1.0mA, $t_p$ < 300μs<br>$I_F$ = 40mA, $t_p$ < 300μs |
| Reverse Current (Note 2) | $I_R$ | — | 200 | nA | $V_R$ = 30V |
| Total Capacitance | $C_T$ | — | 5.0 | pF | $V_R$ = 0, f = 1.0MHz |
| Reverse Recovery Time | $t_{rr}$ | — | 5.0 | ns | $I_F$ = $I_R$ = 10mA,<br>$I_{rr}$ = 0.1 x $I_R$, $R_L$ = 100Ω |

Notes:
1. 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.
2. Short duration pulse test used to minimize self-heating effect.
3. No purposefully added lead.
4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
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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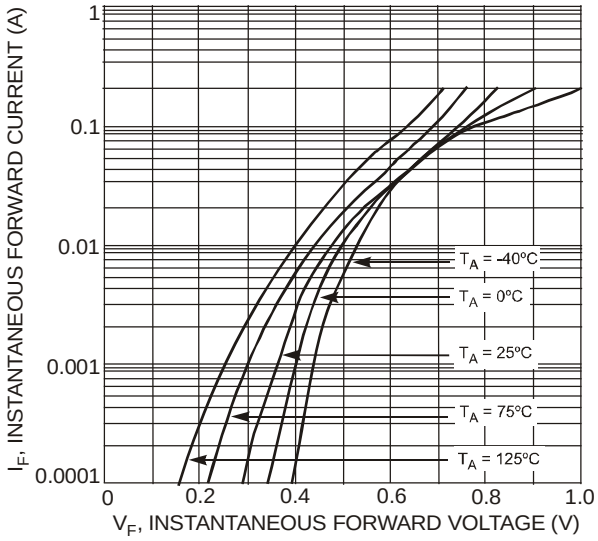


Fig. 1 Typical Forward Characteristics

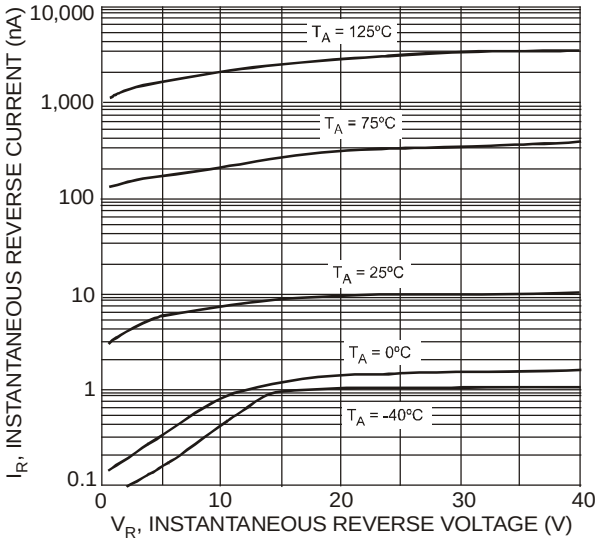


Fig. 2 Typical Reverse Characteristics

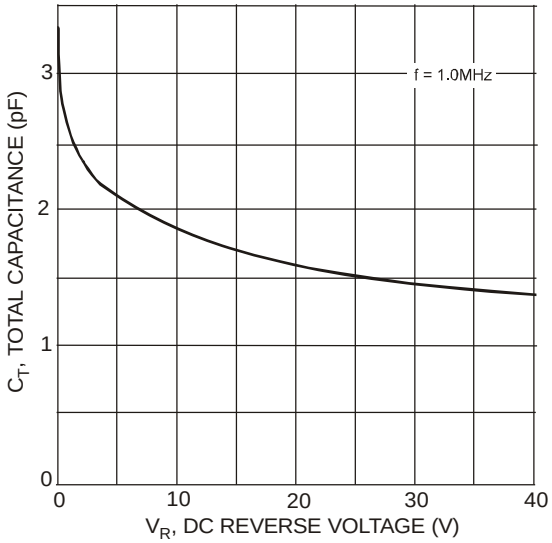


Fig. 3 Total Capacitance vs. Reverse Voltage

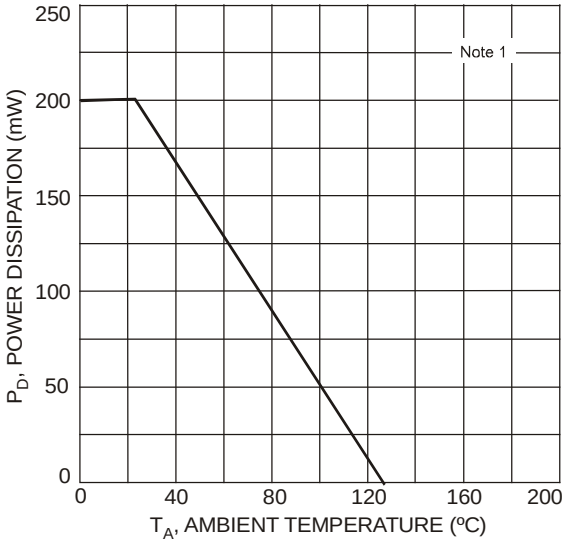


Fig. 4 Power Derating Curve, Total Package


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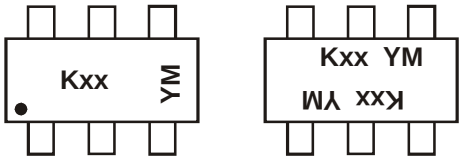
## Ordering Information (Note 6)

| Part Number | Case | Packaging |
|---|---|---|
| BAS40TW-7-F | SOT-363 | 3000/Tape & Reel |
| BAS40DW-04-7-F | SOT-363 | 3000/Tape & Reel |
| BAS40DW-05-7-F | SOT-363 | 3000/Tape & Reel |
| BAS40DW-06-7-F | SOT-363 | 3000/Tape & Reel |
| BAS40BRW-7-F | SOT-363 | 3000/Tape & Reel |

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## Marking Information




Kxx = Product Type Marking Code
- K43 = BAS40TW
- K44 = BAS40DW-04
- K45 = BAS40DW-05
- K46 = BAS40DW-06
- K47 = BAS40BRW

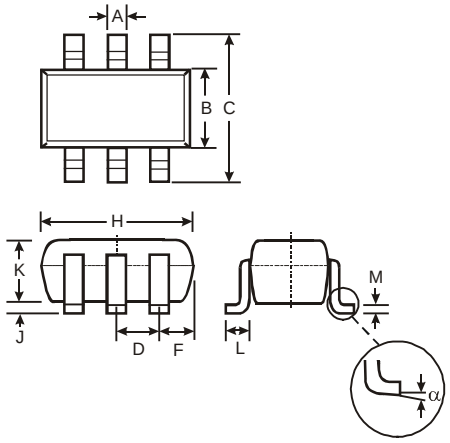
For Assymetrical Configuration, orientation indicator as shown
For Symmetrical Configuration, no orientation indicator
YM = Date Code Marking
Y = Year (ex: N = 2002)
M = Month (ex: 9 = September)

Date Code Key

| Year | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | L | M | N | P | R | S | T | U | V | W | X | Y | Z | A | B | C |

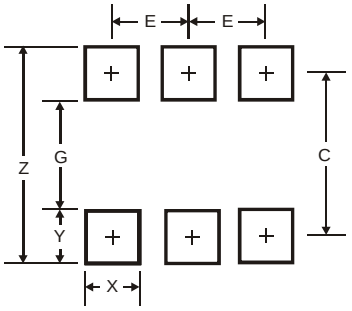
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

## Package Outline Dimensions




| SOT-363 | | |
|---|---|---|
| Dim | Min | Max |
| A | 0.10 | 0.30 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.20 |
| D | 0.65 Nominal | |
| F | 0.40 | 0.45 |
| H | 1.80 | 2.20 |
| J | 0 | 0.10 |
| K | 0.90 | 1.00 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.22 |
| α | 0° | 8° |
| All Dimensions in mm | | |

## Suggested Pad Layout




| Dimensions | Value (in mm) |
|---|---|
| Z | 2.5 |
| G | 1.3 |
| X | 0.42 |
| Y | 0.6 |
| C | 1.9 |
| E | 0.65 |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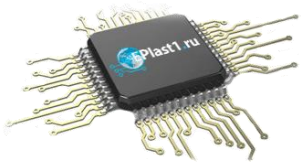
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

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