

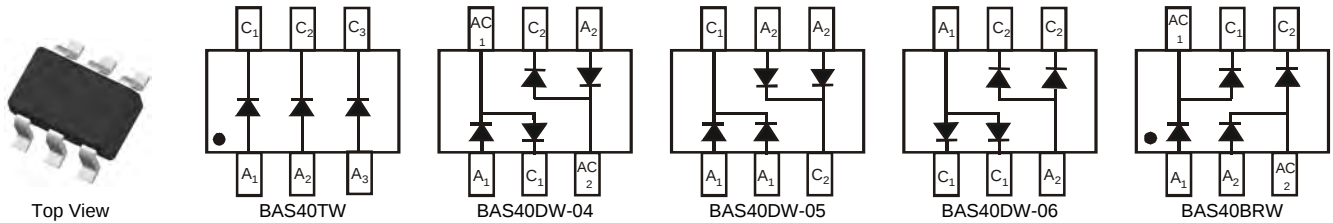
## SURFACE MOUNT SCHOTTKY BARRIER DIODE ARRAYS

### 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)



### 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>    | 40    | V    |
| DC Blocking Voltage                                  | V <sub>R</sub>      |       |      |
| RMS Reverse Voltage                                  | V <sub>R(RMS)</sub> | 28    | V    |
| Forward Continuous Current (Note 1)                  | I <sub>FM</sub>     | 200   | mA   |
| Non-Repetitive Peak Forward Surge Current @ t < 1.0s | I <sub>FSM</sub>    | 600   | mA   |

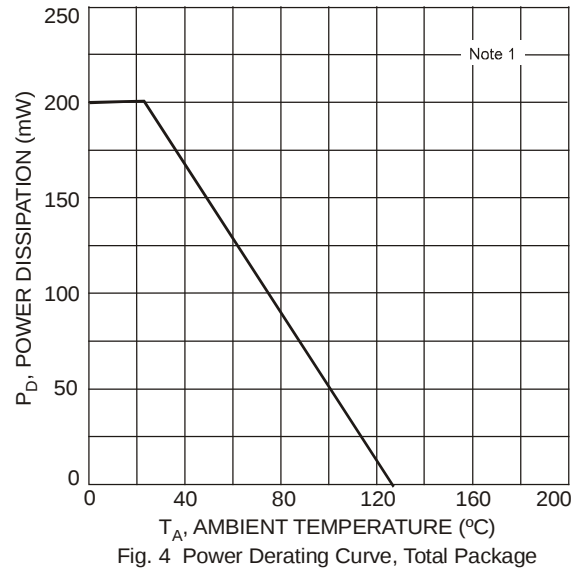
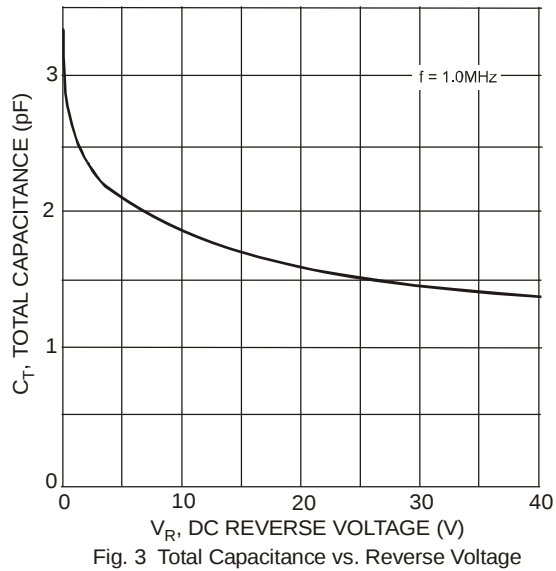
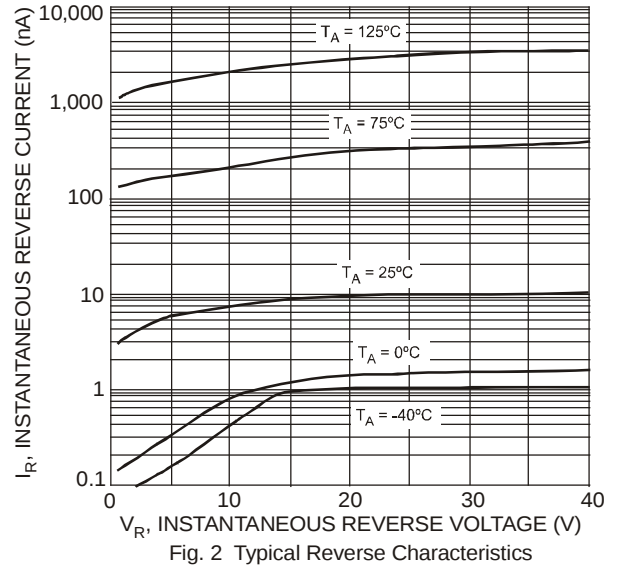
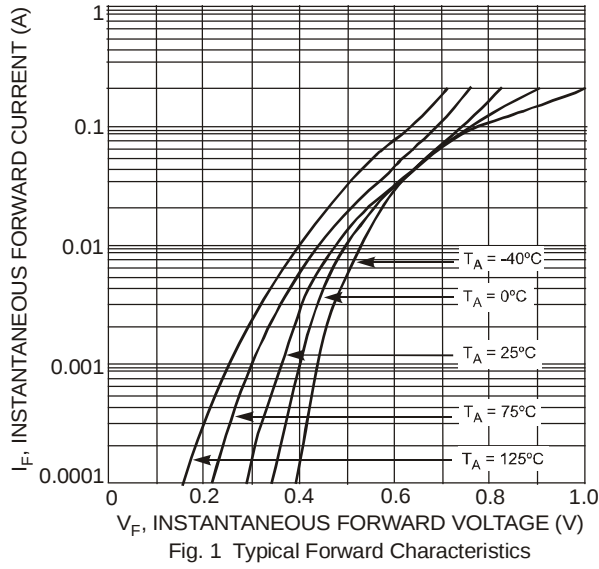
### Thermal Characteristics

| Characteristic                                      | Symbol           | Value       | Unit |
|-----------------------------------------------------|------------------|-------------|------|
| Power Dissipation (Note 1)                          | P <sub>D</sub>   | 200         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 1) | R <sub>θJA</sub> | 625         | °C/W |
| Operating Temperature Range                         | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range                           | T <sub>STG</sub> | -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 2) | V <sub>(BR)R</sub> | 40  | —           | V    | I <sub>R</sub> = 10μA                                                                                     |
| Forward Voltage                    | V <sub>F</sub>     | —   | 380<br>1000 | mV   | I <sub>F</sub> = 1.0mA, t <sub>p</sub> < 300μs<br>I <sub>F</sub> = 40mA, t <sub>p</sub> < 300μs           |
| Reverse Current (Note 2)           | I <sub>R</sub>     | —   | 200         | nA   | V <sub>R</sub> = 30V                                                                                      |
| Total Capacitance                  | C <sub>T</sub>     | —   | 5.0         | pF   | V <sub>R</sub> = 0, f = 1.0MHz                                                                            |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | 5.0         | ns   | I <sub>F</sub> = I <sub>R</sub> = 10mA,<br>I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 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](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

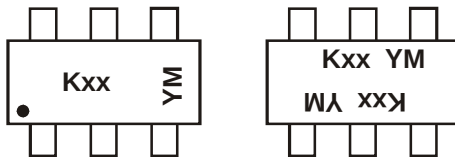


## Ordering Information (Note 6)

| 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 Asymmetrical 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)

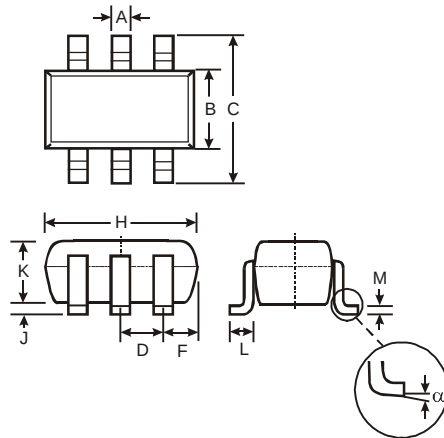
Date Code Key

| 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    |

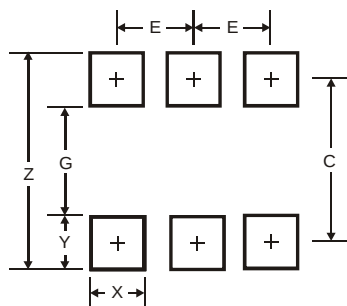
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

## 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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