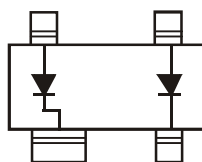


## Features

- Fast Switching Speed
- High Reverse Breakdown Voltage
- Two Electrically Isolated Elements in a Single Compact Package
- Low Leakage Current
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

## Mechanical Data

- Case: SOT143
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagram Below
- Weight: 0.008 grams (approximate)



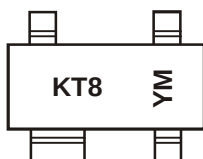
Device Schematic

## Ordering Information (Note 3)

| Part Number | Case   | Packaging        |
|-------------|--------|------------------|
| BAV23-7     | SOT143 | 3000/Tape & Reel |

- Notes:
1. No purposefully added lead. Halogen and Antimony free.
  2. Diodes Inc.'s "Green" Policy can be found on our website at <http://www.diodes.com>
  3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



KT8 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: Y = 2011)  
 M = Month (ex: 9 = September)

### Date Code Key

| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|------|------|------|
| Code | Y    | Z    | A    | B    | C    | D    | E    |

| 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<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                      | Symbol                             | Value | Unit |
|-----------------------------------------------------|------------------------------------|-------|------|
| Repetitive Peak Reverse Voltage                     | V <sub>RRM</sub>                   | 250   | V    |
| Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RWM</sub><br>V <sub>R</sub> | 200   | V    |
| RMS Reverse Voltage                                 | V <sub>R(RMS)</sub>                | 141   | V    |
| Forward Current (Note 4)                            | I <sub>F</sub>                     | 400   | mA   |
| Non-Repetitive Peak Forward Surge Current           | I <sub>FSM</sub>                   | 9.0   | A    |
| @ t = 1.0μs                                         |                                    | 3.0   |      |
| @ t = 100μs                                         |                                    | 1.7   |      |
| Repetitive Peak Forward Current (Note 4)            | I <sub>FRM</sub>                   | 625   | mA   |

**Thermal Characteristics**

| Characteristic                                      | Symbol                            | Value       | Unit |
|-----------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Note 4)                          | P <sub>D</sub>                    | 400         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 4) | R <sub>θJA</sub>                  | 312         | °C/W |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                     | Symbol             | Min | Max         | Unit     | Test Condition                                                                                            |
|------------------------------------|--------------------|-----|-------------|----------|-----------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 5) | V <sub>(BR)R</sub> | 250 | —           | V        | I <sub>R</sub> = 100μA                                                                                    |
| Forward Voltage                    | V <sub>F</sub>     | —   | 1.0<br>1.25 | V        | I <sub>F</sub> = 100mA<br>I <sub>F</sub> = 200mA                                                          |
| Reverse Current (Note 5)           | I <sub>R</sub>     | —   | 100<br>100  | nA<br>μA | V <sub>R</sub> = 200V<br>V <sub>R</sub> = 200V, T <sub>J</sub> = 150°C                                    |
| Total Capacitance                  | C <sub>T</sub>     | —   | 2.0         | pF       | V <sub>R</sub> = 0, f = 1.0MHz                                                                            |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | 50          | ns       | I <sub>F</sub> = I <sub>R</sub> = 30mA,<br>I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

Notes: 4. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
 5. Short duration pulse test used to minimize self-heating effect.

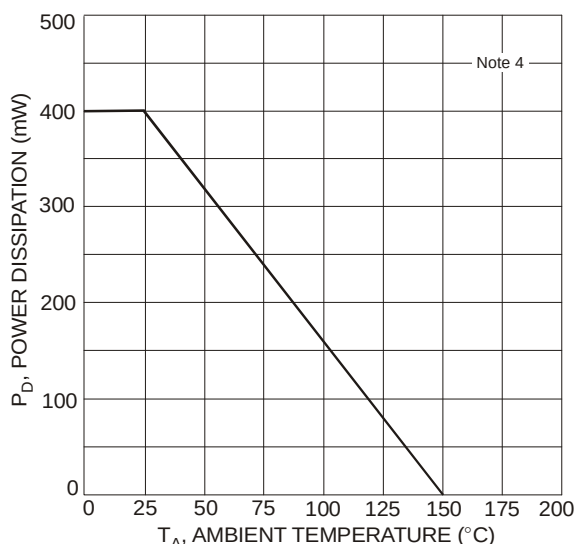


Fig. 1 Power Derating Curve, Total Package

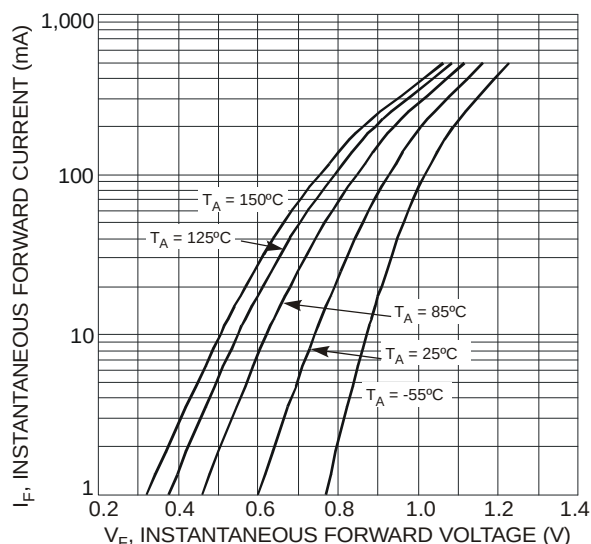


Fig. 2 Typical Forward Characteristics, Per Element

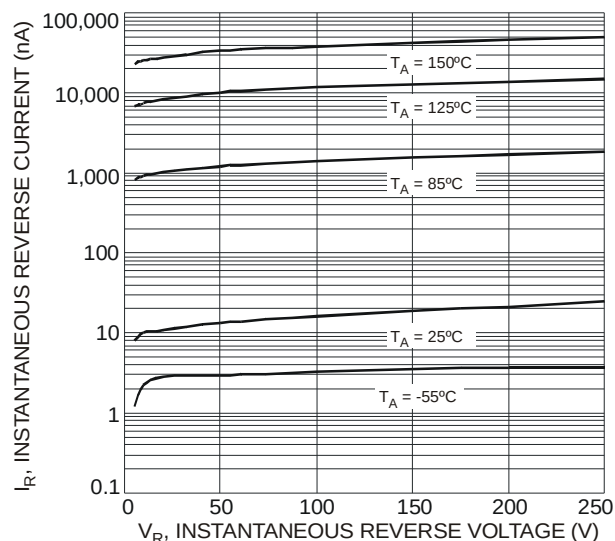


Fig. 3 Typical Reverse Characteristics, Per Element

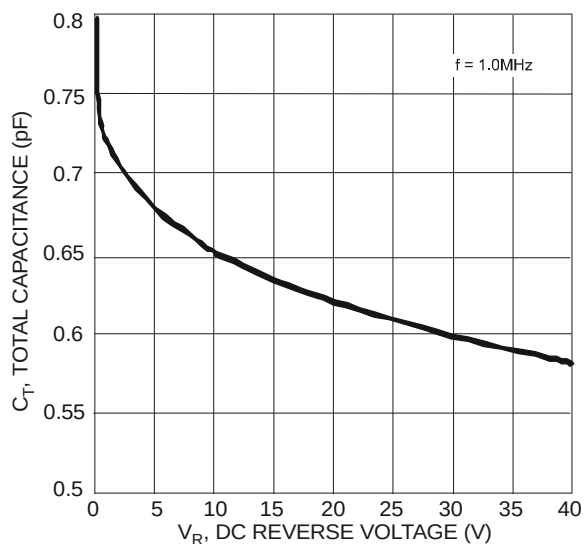
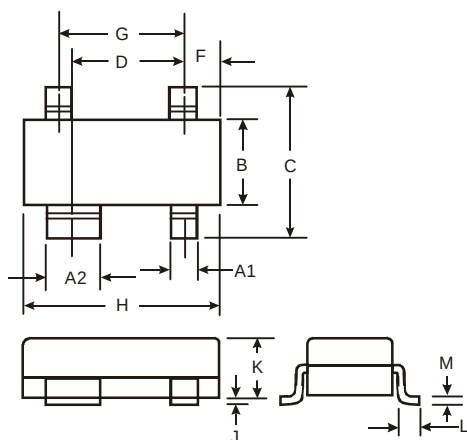


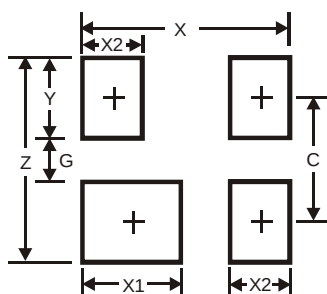
Fig. 4 Typical Total Capacitance vs. Reverse Voltage, Per Element

## Package Outline Dimensions



| SOT143               |       |      |
|----------------------|-------|------|
| Dim                  | Min   | Max  |
| A1                   | 0.37  | 0.51 |
| A2                   | 0.77  | 0.93 |
| B                    | 1.20  | 1.40 |
| C                    | 2.28  | 2.48 |
| D                    | 1.58  | 1.83 |
| F                    | 0.45  | 0.60 |
| G                    | 1.78  | 2.03 |
| H                    | 2.80  | 3.00 |
| J                    | 0.013 | 1.00 |
| K                    | 0.89  | 0.10 |
| L                    | 0.46  | 0.60 |
| M                    | 0.085 | 0.18 |
| All Dimensions in mm |       |      |

## Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 2.70          |
| G          | 1.30          |
| X          | 2.50          |
| X1         | 1.0           |
| X2         | 0.60          |
| Y          | 0.70          |
| C          | 2.0           |

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