
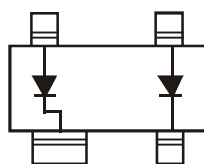


Features

- Fast Switching Speed
- High Reverse Breakdown Voltage
- Two Electrically Isolated Elements in a Single Compact Package
- Low Leakage Current
- **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)**

Mechanical Data

- Case: SOT143
- Case Material: Molded Plastic, "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead-Free Plating). Solderable per MIL-STD-202, Method 208 
- Polarity: See Diagram Below
- Weight: 0.008 grams (Approximate)



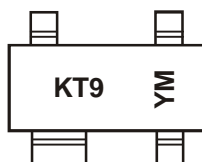
Device Schematic

Ordering Information (Notes 4 & 5)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|--------|-------------------|
| BAW101Q-7 | Automotive | SOT143 | 3,000/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. Refer to http://www.diodes.com/product_compliance_definitions.html.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



KT9 = Product Type Marking Code
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 |
|------|------|------|------|------|------|------|------|
| Code | D | E | F | G | H | I | J |

| 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 |
|-------------------------------------------------------------------|---------------------|-------|------|
| Repetitive Peak Reverse Voltage | V _{RRM} | 300 | V |
| Single Diode | | 600 | |
| Working Peak Reverse Voltage | V _{RWM} | 300 | V |
| DC Blocking Voltage | | 600 | |
| RMS Reverse Voltage | V _{R(RMS)} | 212 | V |
| Forward Current (Note 6) | I _F | 250 | mA |
| Single Diode Loaded | | 140 | |
| Non-Repetitive Peak Forward Surge Current Square Wave @ t = 1.0μs | I _{FSM} | 4.5 | A |
| Repetitive Peak Forward Current (Note 6) | I _{FRM} | 625 | mA |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|-----------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Note 6) | P _D | 400 | mW |
| Thermal Resistance Junction to Ambient Air (Note 6) | R _{θJA} | 312 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °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} | 300 | — | V | I _R = 100μA |
| Forward Voltage | V _F | — | 1.1 | V | I _F = 100mA |
| Reverse Current (Note 7) | I _R | — | 150 75 | nA μA | V _R = 250V V _R = 250V, T _J = +150°C |
| Total Capacitance | C _T | — | 2.0 | pF | V _R = 0, f = 1.0MHz |
| Reverse Recovery Time | t _{RR} | — | 50 | ns | I _F = I _R = 30mA, I _{RR} = 0.1 x I _R , R _L = 100Ω |

Notes: 6. 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>.
 7. Short duration pulse test used to minimize self-heating effect.

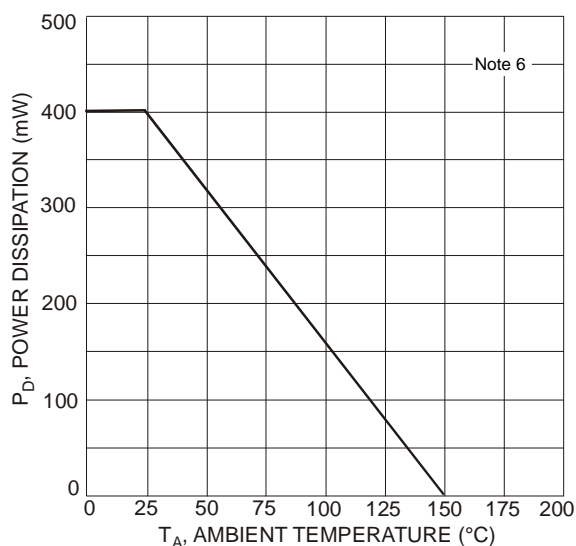


Fig. 1 Power Derating Curve, Total Package

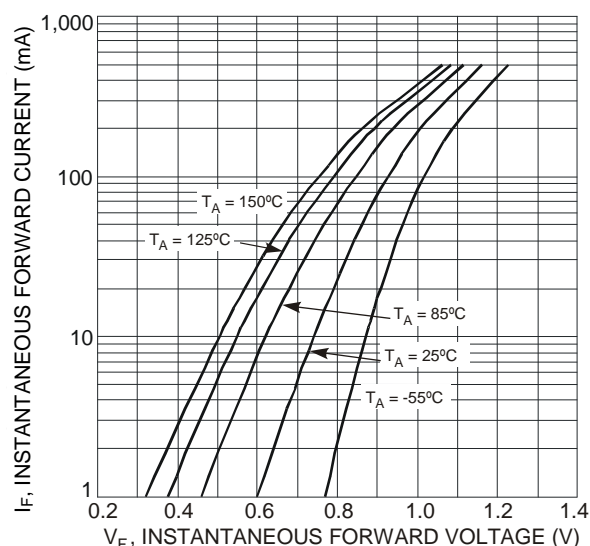


Fig. 2 Typical Forward Characteristics, Per Element

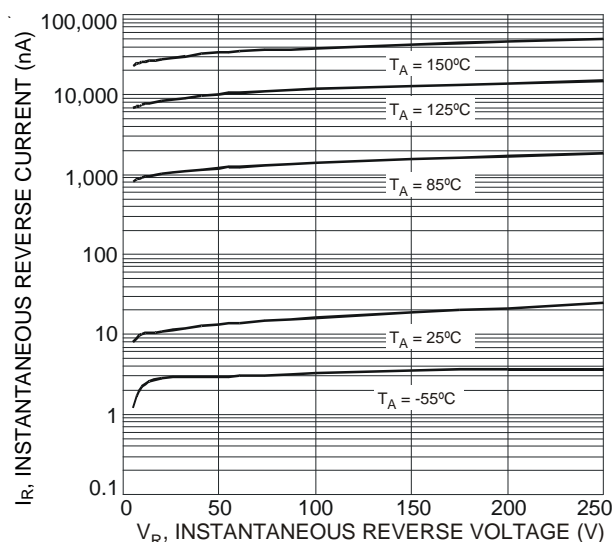


Fig. 3 Typical Reverse Characteristics, Per Element

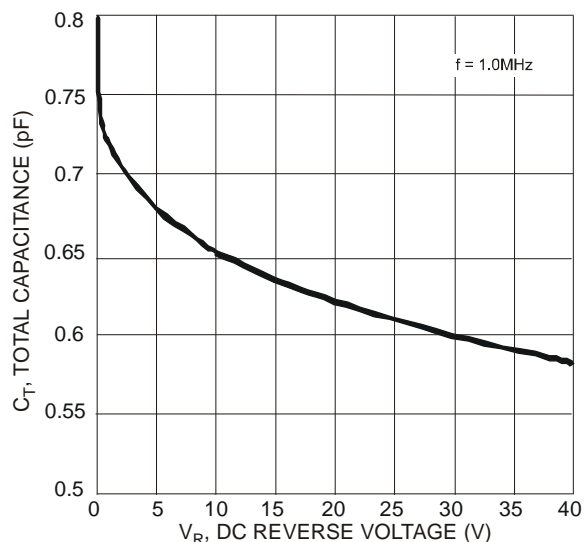
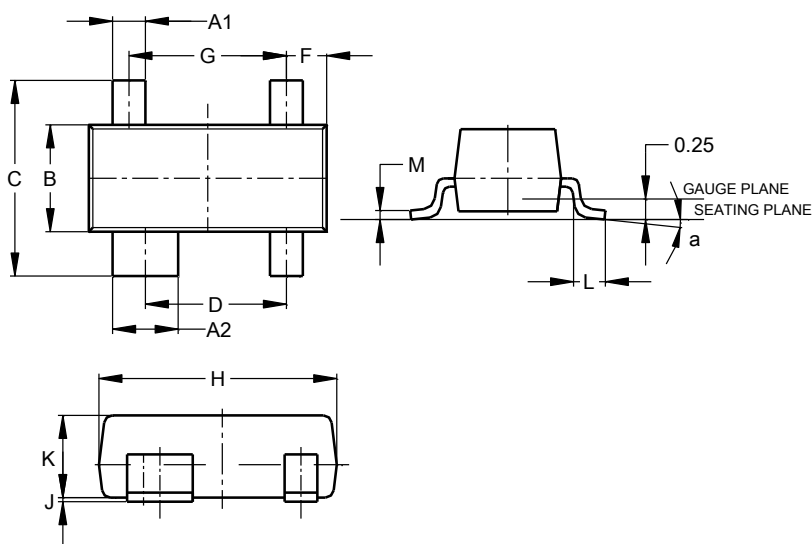


Fig. 4 Typical Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

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

SOT143

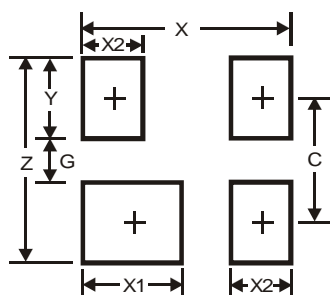


| SOT143 | | | |
|----------------------|-------|------|-------|
| Dim | Min | Max | Typ |
| A1 | 0.37 | 0.51 | 0.400 |
| A2 | 0.77 | 0.93 | 0.800 |
| B | 1.20 | 1.40 | 1.30 |
| C | 2.28 | 2.48 | 2.38 |
| D | 1.58 | 1.83 | 1.72 |
| F | 0.45 | 0.60 | 0.49 |
| G | 1.78 | 2.03 | 1.92 |
| H | 2.80 | 3.00 | 2.90 |
| J | 0.013 | 0.10 | 0.05 |
| K | 0.89 | 1.00 | — |
| L | 0.46 | 0.60 | 0.50 |
| M | 0.085 | 0.18 | 0.11 |
| a | 0° | 8° | — |
| All Dimensions in mm | | | |

Suggested Pad Layout

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

SOT143



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 2.70 |
| G | 1.30 |
| X | 2.50 |
| X1 | 1.00 |
| X2 | 0.60 |
| Y | 0.70 |
| C | 2.00 |

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