

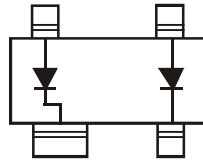
Features

- Fast Switching Speed
- For General Purpose Switching Applications
- Two Electrically Isolated Elements in a Single Compact Package
- **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**

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: Finish – Matte Tin Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: See Diagram Below
- Weight: 0.009 grams (Approximate)

SOT143



Device Schematic

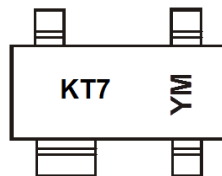
Ordering Information (Note 4)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|--------|-------------------|
| BAS28-7 | AEC-Q101 | 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information

SOT143



KT7 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: C = 2015)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------|------|------|------|------|------|------|------|------|------|------|
| Code | C | D | E | F | G | H | I | J | K | L |

| 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} | 85 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _R | | |
| RMS Reverse Voltage | V _{R(RMS)} | 60 | V |
| Forward Current (Note 5) | I _F | 215 | mA |
| Non-Repetitive Peak Forward Surge Current | I _{FSM} | @ t = 1.0μs | 4.0 |
| | | @ t = 1.0ms | 1.0 |
| | | @ t = 1s | 0.5 |
| Repetitive Peak Forward Current (Note 5) | I _{FRM} | 500 | mA |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 5) | P _D | 250 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | R _{θJA} | 500 | °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 6) | V _{(BR)R} | 85 | — | V | I _R = 100μA |
| Forward Voltage | V _F | — | 0.715 | V | I _F = 1.0mA |
| | | | 0.855 | | I _F = 10mA |
| | | | 1.0 | | I _F = 50mA |
| | | | 1.25 | | I _F = 150mA |
| Reverse Current (Note 6) | I _R | — | 1.0 | μA | V _R = 75V |
| | | | 50 | μA | V _R = 75V, T _J = +150°C |
| | | | 30 | μA | V _R = 25V, T _J = +150°C |
| | | | 30 | nA | V _R = 25V |
| Total Capacitance | C _T | — | 1.5 | pF | V _R = 0, f = 1.0MHz |
| Reverse Recovery Time | t _{RR} | — | 4 | ns | I _F = I _R = 10mA, I _{RR} = 0.1 x I _R , R _L = 100Ω |

Notes: 5. 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>.
6. Short duration pulse test used to minimize self-heating effect.

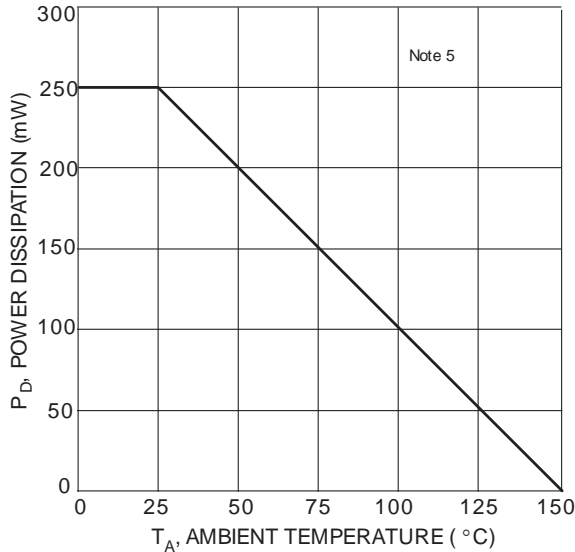


Figure 1 Power Derating Curve, Total Package

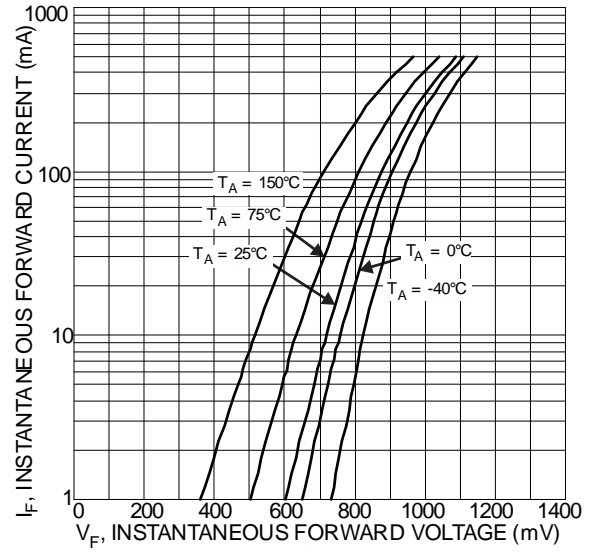


Figure 2 Typical Forward Characteristics, Per Element

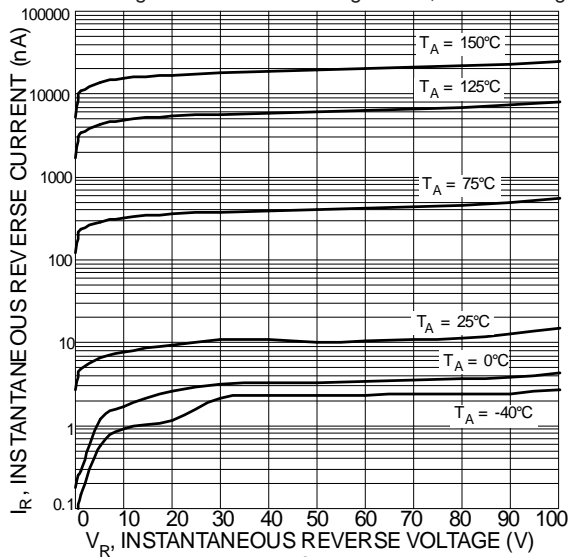


Figure 3 Typical Reverse Characteristics, Per Element

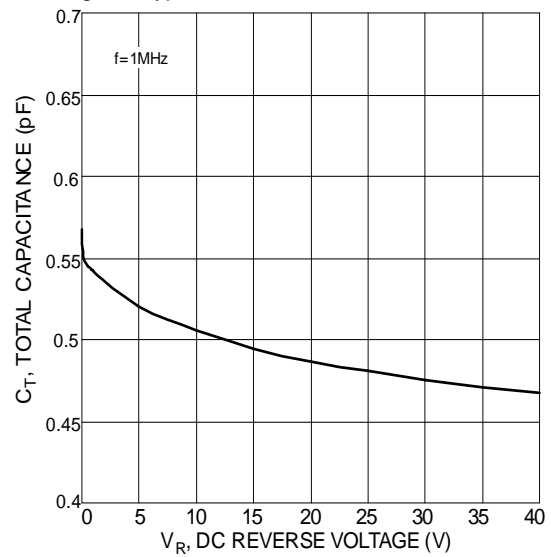
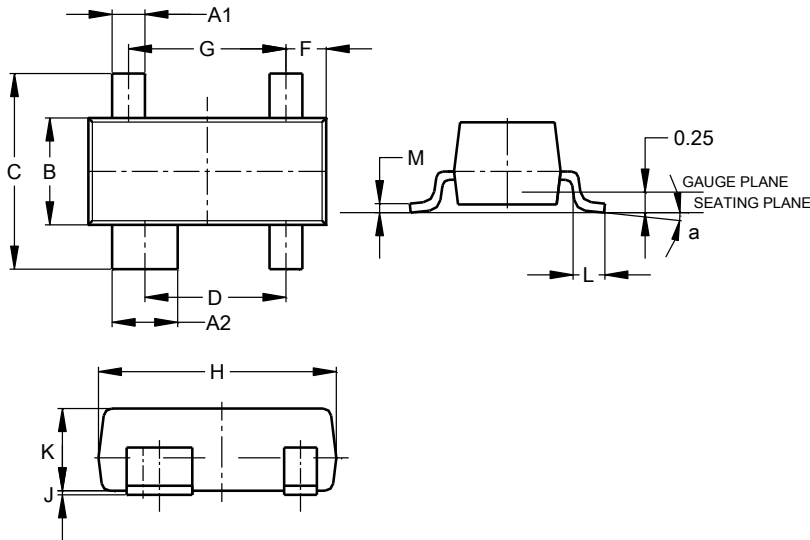


Figure 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

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

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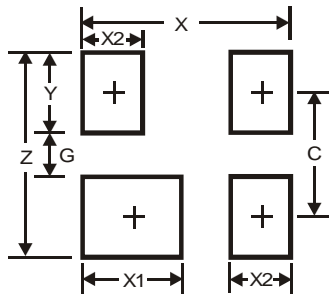


| SOT143 | | | |
|----------------------|-------|------|-------|
| Dim | Min | Max | Typ |
| A1 | 0.37 | 0.51 | 0.400 |
| A2 | 0.77 | 0.93 | 0.800 |
| B | 1.20 | 1.40 | 1.30 |
| C | 2.28 | 2.48 | 2.38 |
| D | 1.58 | 1.83 | 1.72 |
| F | 0.45 | 0.60 | 0.49 |
| G | 1.78 | 2.03 | 1.92 |
| H | 2.80 | 3.00 | 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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