

Features

- Fast Switching Speed
- High Reverse Breakdown Voltage
- Low Leakage Current
- Low Capacitance
- **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
- An Automotive-Compliant Part is Available Under Separate Datasheet ([BAS16HTWQ](#))

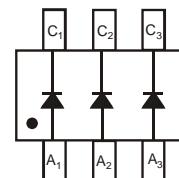
Mechanical Data

- Case: SOT363
- 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^(E3)
- Polarity: See Diagram
- Weight: 0.006 grams (Approximate)

SOT363



Top View



Top View
Internal Schematic

Ordering Information (Note 4)

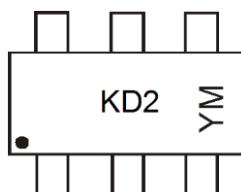
| Part Number | Qualification | Case | Packaging |
|--------------|---------------|--------|--------------------|
| BAS16HTW-13 | AEC-Q101 | SOT363 | 10,000/Tape & Reel |
| BAS16HTW-13R | AEC-Q101 | SOT363 | 10,000/Tape & Reel |

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. The "-13R" suffix indicates that the devices are rotated 180° in the carrier tape as compared with the standard "-13" suffix devices. For exact packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information

SOT363



KD2 = 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 | | | | |
|-------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|
| Code | C | 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 (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|--------------|-------|------|
| Peak Repetitive Reverse Voltage | V_{RRM} | | |
| Working Peak Reverse Voltage | V_{RWM} | 100 | V |
| DC Blocking Voltage | V_R | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 71 | V |
| Forward Continuous Current (Note 5) | I_{FM} | 200 | mA |
| Repetitive Peak Forward Current | I_{FRM} | 500 | mA |
| Non-Repetitive Peak Forward Surge Current | I_{FSM} | 4 | A |
| | | 1.0 | |
| | | 0.5 | |

Thermal Characteristics

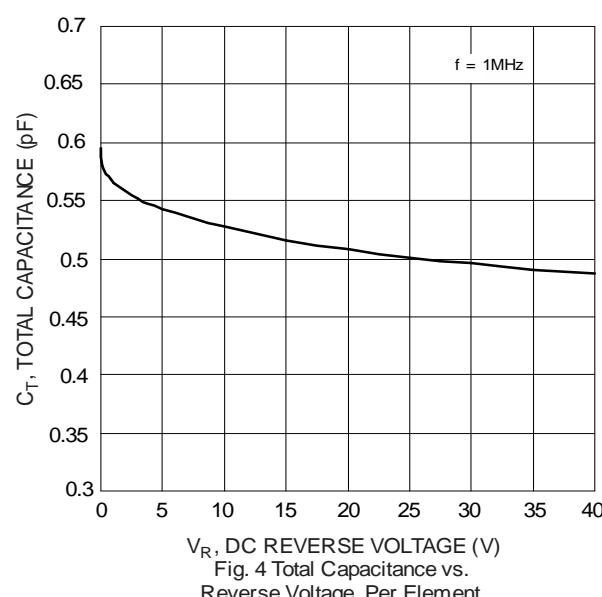
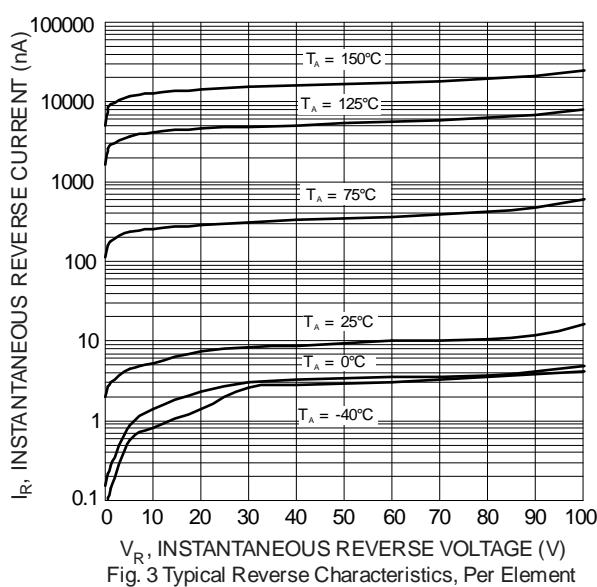
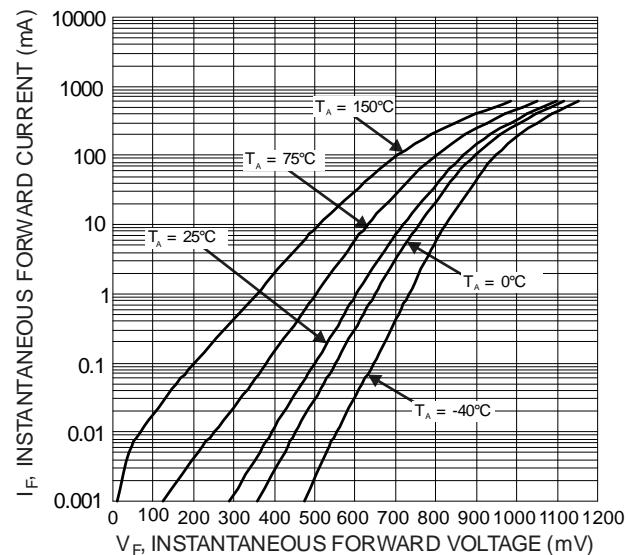
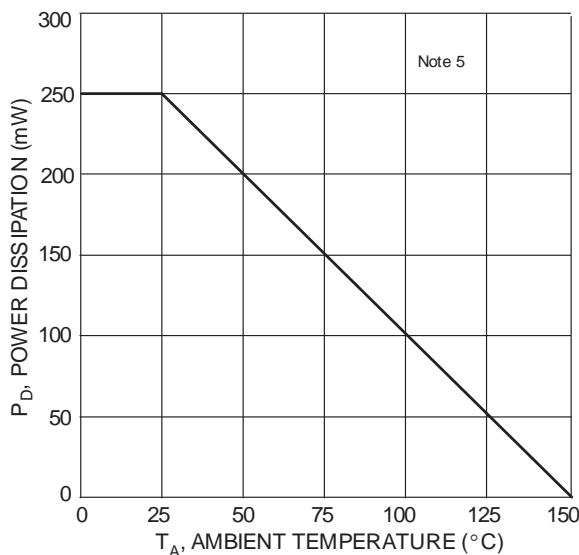
| Characteristic | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Power Dissipation (Note 5) | P_D | 250 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | $R_{\theta JA}$ | 500 | °C/W |
| Thermal Resistance Junction to Solder Point (Note 6) | $R_{\theta JSP}$ | 260 | °C/W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | °C |

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|------------------------------------|-------------|-----|-------|---------------|---|
| Reverse Breakdown Voltage (Note 7) | $V_{(BR)R}$ | 100 | — | V | $I_R = 2.5\mu\text{A}$ |
| Forward Voltage | V_F | — | 0.715 | V | $I_F = 1.0\text{mA}$ |
| | | — | 0.855 | | $I_F = 10\text{mA}$ |
| | | — | 1.0 | | $I_F = 50\text{mA}$ |
| | | — | 1.25 | | $I_F = 150\text{mA}$ |
| | | — | 0.5 | | $V_R = 80\text{V}$ |
| Reverse Current (Note 7) | I_R | — | 50 | μA | $V_R = 80\text{V}, T_J = +150^\circ\text{C}$ |
| | | — | 30 | | $V_R = 25\text{V}, T_J = +150^\circ\text{C}$ |
| | | — | 30 | nA | $V_R = 25\text{V}$ |
| | | — | 1.5 | pF | $V_R = 0, f = 1.0\text{MHz}$ |
| Reverse Recovery Time | t_{RR} | — | 4.0 | ns | $I_F = I_R = 10\text{mA}$, $I_{RR} = 0.1 \times I_R, R_L = 100\Omega$ |
| Forward Recovery Voltage | V_{FR} | — | 1.75 | V | $I_F = 10\text{mA}; t_R = 20\text{ns}$ |

Notes:

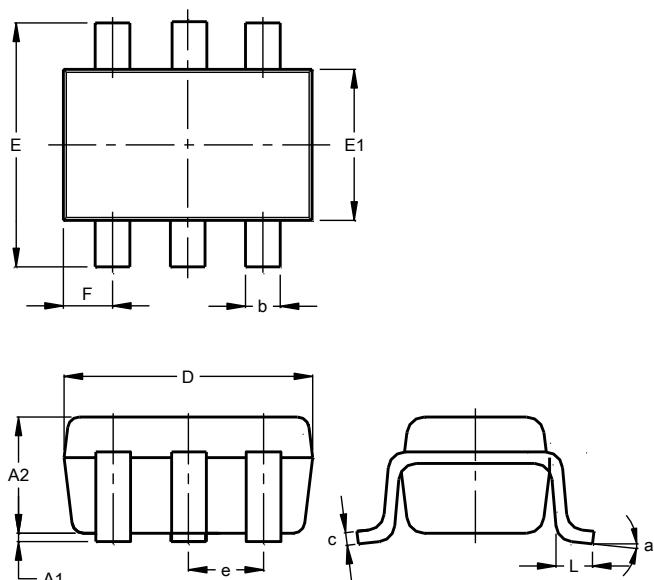
5. Part mounted on FR-4 PC board with recommended pad layout, please see <http://www.diodes.com/package-outlines.html> for the latest version.
6. Soldering points at pins C₁, C₂ and C₃.
7. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

SOT363



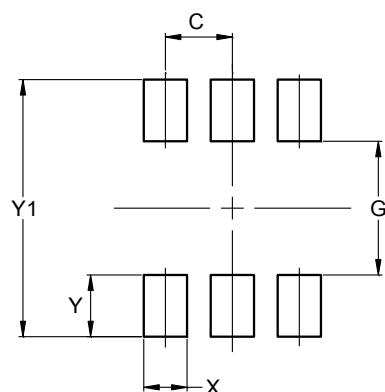
| SOT363 | | | |
|--------|-----------|------|-------|
| Dim | Min | Max | Typ |
| A1 | 0.00 | 0.10 | 0.05 |
| A2 | 0.90 | 1.00 | 1.00 |
| b | 0.10 | 0.30 | 0.25 |
| c | 0.10 | 0.22 | 0.11 |
| D | 1.80 | 2.20 | 2.15 |
| E | 2.00 | 2.20 | 2.10 |
| E1 | 1.15 | 1.35 | 1.30 |
| e | 0.650 BSC | | |
| F | 0.40 | 0.45 | 0.425 |
| L | 0.25 | 0.40 | 0.30 |
| a | 0° | 8° | — |

All Dimensions in mm

Suggested Pad Layout

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

SOT363



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.650 |
| G | 1.300 |
| X | 0.420 |
| Y | 0.600 |
| Y1 | 2.500 |

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