# Excellent Integrated System Limited

Stocking Distributor

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Diodes Incorporated
BAS16VV-7

For any questions, you can email us directly:
sales@integrated-circuit.com

Lead-free Green

**BAS16VV**

**SURFACE MOUNT SWITCHING DIODE ARRAY**

## Features

- Fast Switching Speed
- Low Forward Voltage: Maximum of 0.715V at 1mA
- Fast Reverse Recovery: Maximum of 4ns
- Low Capacitance: Maximum of 1.5pF
- Low Leakage Current
- Ultra-Small Surface Mount Package
- Thermally Efficient Copper Alloy leadframe for High Power Dissipation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

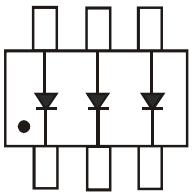
## Mechanical Data

- Case: SOT563
- 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 Copper Alloy leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.003 grams (approximate)

SOT563

Top View

Bottom View



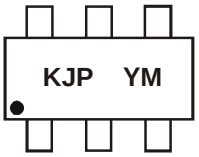
Top View

## Ordering Information (Note 4)

| Part Number | Case | Packaging |
|---|---|---|
| BAS16V V-7 | SOT563 | 3000/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 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.

## Marking Information




KJP = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Z = 2012)
M = Month (ex: 9 = September)

Date Code Key

| Year | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|
| Code | Z | A | B | C | D | E | F |

| 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 |

**BAS16VV**

## Maximum Ratings (@$T_A$ = 25°C unless otherwise specified.)

| Characteristic | | Symbol | Value | Unit |
|---|---|---|---|---|
| Non-Repetitive Peak Reverse Voltage | | $V_{RM}$ | 100 | V |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 100 | V |
| RMS Reverse Voltage | | $V_{R(RMS)}$ | 71 | V |
| Forward Continuous Current (Note 5) | | $I_{FM}$ | 200 | mA |
| Non-Repetitive Peak Forward Surge Current | @ t = 1.0μs<br>@ t = 1.0ms<br>@ t = 1.0s | $I_{FSM}$ | 4.0<br>1.0<br>0.5 | A |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Power Dissipation (Note 5) | $P_D$ | 350 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | $R_{\theta JA}$ | 357 | °C/W |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -55 to +150 | °C |

## Electrical Characteristics (@$T_A$ = 25°C unless otherwise specified.)

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|---|---|---|---|---|---|
| Reverse Breakdown Voltage (Note 6) | $V_{(BR)R}$ | 100 | — | 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 |
| Leakage Current (Note 6) | $I_R$ | — | 0.5 | μA | $V_R$ = 80V |
| | | — | 50 | μA | $V_R$ = 80V, $T_J$ = 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 | $t_{rr}$ | — | 4.0 | ns | $I_F$ = $I_R$ = 10mA,<br>$I_{rr}$ = 0.1 x $I_R$, $R_L$ = 100Ω |

Notes: 5. Device mounted on FR-4 PCB, on minimum recommended, 2oz copper pad layout.
6. Short duration pulse test used to minimize self-heating effect.

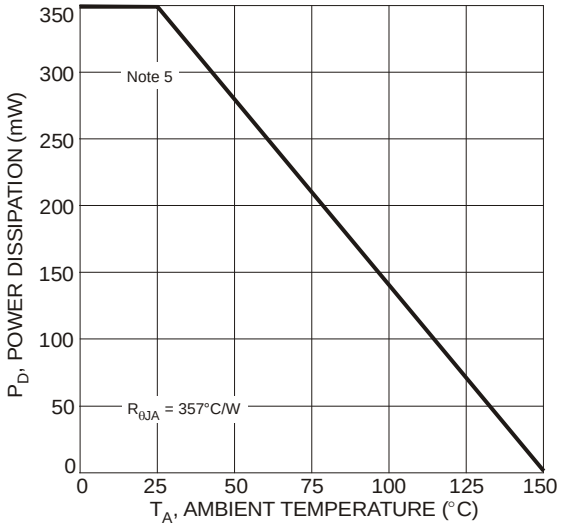



Fig. 1 Power Derating Curve, Total Package

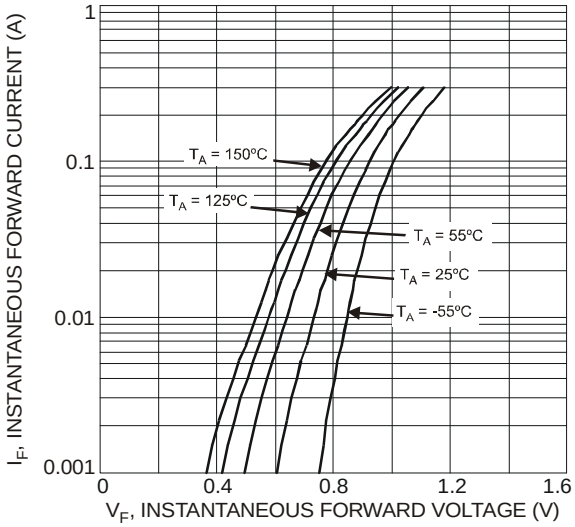



Fig. 2 Typical Forward Characteristics, Per Element

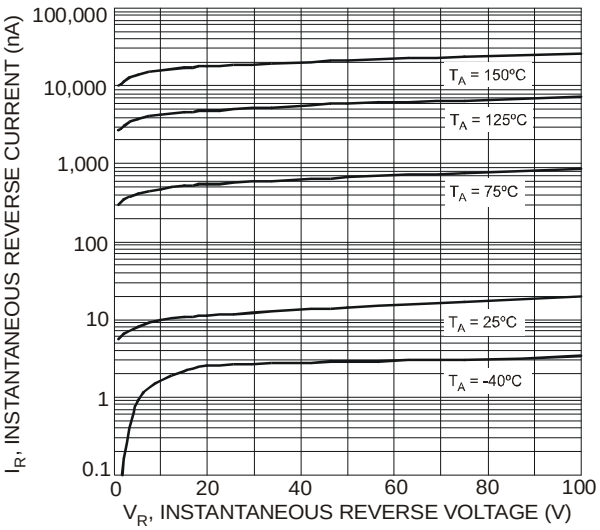


Fig. 3 Typical Reverse Characteristics, Per Element

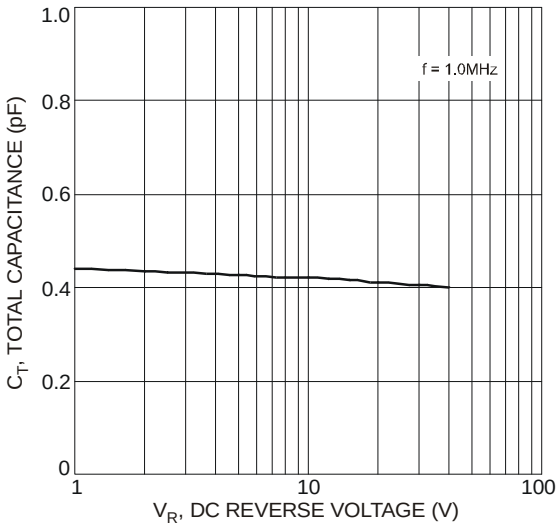
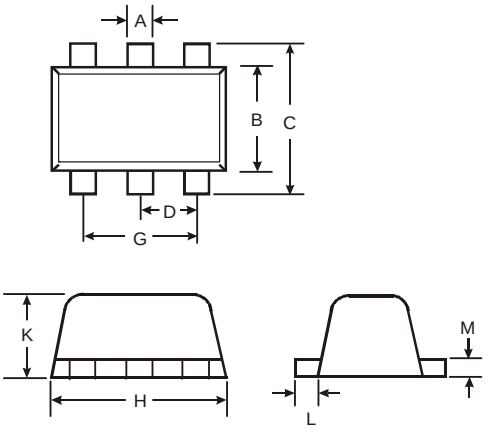


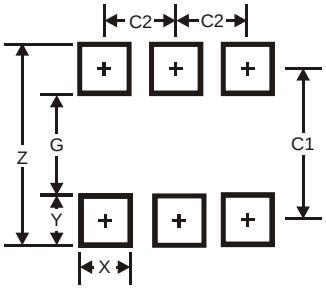
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

## Package Outline Dimensions




| SOT563 | | | |
|---|---|---|---|
| **Dim** | **Min** | **Max** | **Typ** |
| **A** | 0.15 | 0.30 | 0.20 |
| **B** | 1.10 | 1.25 | 1.20 |
| **C** | 1.55 | 1.70 | 1.60 |
| **D** | - | - | 0.50 |
| **G** | 0.90 | 1.10 | 1.00 |
| **H** | 1.50 | 1.70 | 1.60 |
| **K** | 0.55 | 0.60 | 0.60 |
| **L** | 0.10 | 0.30 | 0.20 |
| **M** | 0.10 | 0.18 | 0.11 |
| **All Dimensions in mm** | | | |

## Suggested Pad Layout




| Dimensions | Value (in mm) |
|---|---|
| **Z** | 2.2 |
| **G** | 1.2 |
| **X** | 0.375 |
| **Y** | 0.5 |
| **C1** | 1.7 |
| **C2** | 0.5 |

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