



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Product Summary(@ $T_A = +25^\circ\text{C}$)

| V_{RRM} (V) | I_O (mA) | $V_{F(MAX)}$ (mV) | $I_{R(MAX)}$ (mA) |
|---------------|------------|-------------------|-------------------|
| 60 | 500 | 630 | 40 |

Applications

- DC - DC Converters
- Mobile Telecomms
- PC/MIA

Features and Benefits

- High Current Capability ($I_O = 500\text{mA}$)
- Low V_F
- **Totally Lead-Free Finish & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

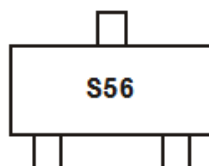
Mechanical Data

- Case: SOT23
- 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 ③
- Weight: 0.0089 grams (approximate)


Ordering Information (Note 4)

| Device | Packaging | Shipping |
|-----------|-----------|------------------|
| ZHCS506TA | SOT23 | 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/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


S56 = Product Type Marking Code

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Units |
|--|------------------|-------|-------|
| Continuous Reverse Voltage | V _R | 60 | V |
| Continuous Forward Current | I _F | 500 | mA |
| Forward Voltage @I _F = 500mA | V _F | 630 | mV |
| Average Peak Forward Current; D.C. = 50% | I _{FAV} | 1000 | mA |
| Non Repetitive Forward Current | t ≤ 100μs | 5.5 | A |
| | t ≤ 10ms | 2.5 | A |

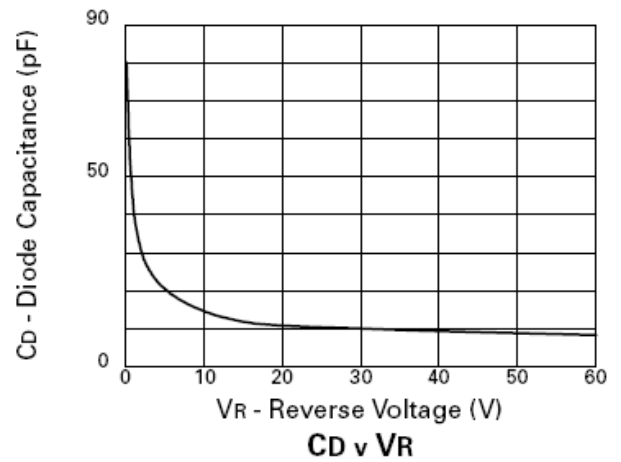
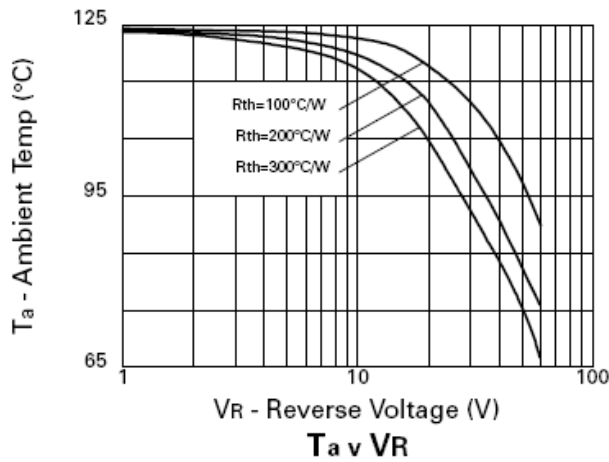
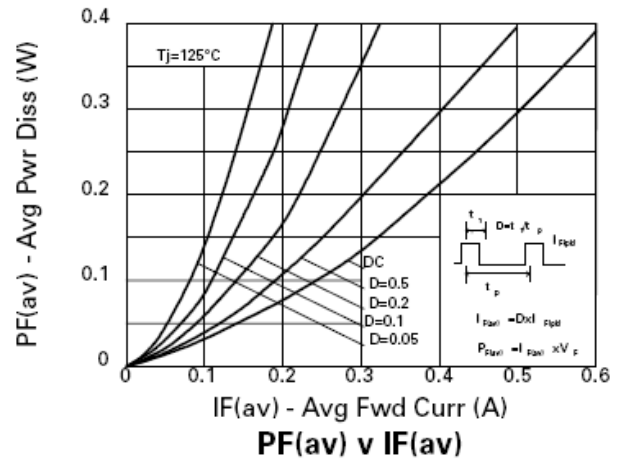
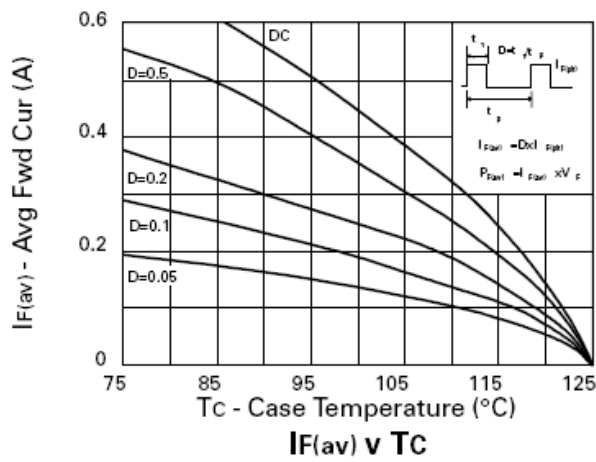
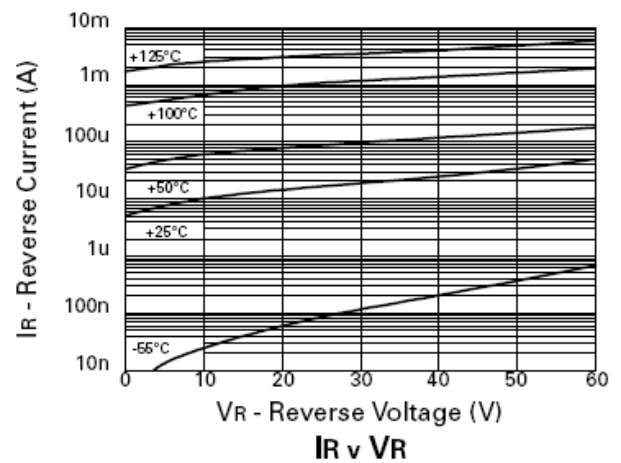
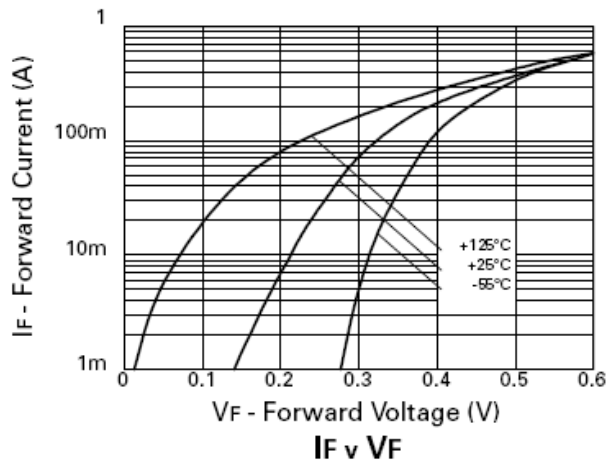
Thermal Characteristics

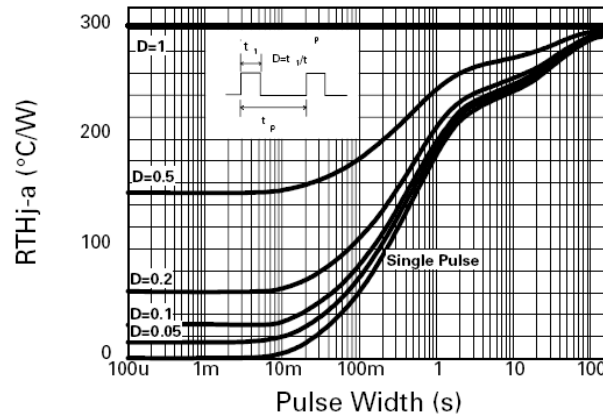
| Characteristic | Symbol | Value | Unit |
|---|------------------|-------------|------|
| Power Dissipation, T _A = +25°C | P _D | 330 | mW |
| Junction Temperature | T _J | +125 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---------------------------|--------------------|-----|------|------|------|--|
| Reverse Breakdown Voltage | V _{(BR)R} | 60 | 80 | — | V | I _R = 200μA |
| Forward Voltage (Note 5) | V _F | — | 275 | 310 | mV | I _F = 50mA |
| | | — | 320 | 360 | | I _F = 100mA |
| | | — | 415 | 470 | | I _F = 250mA |
| | | — | 550 | 630 | | I _F = 500mA |
| | | — | 680 | 800 | | I _F = 750mA |
| | | — | 820 | 960 | | I _F = 1A |
| | | — | 1120 | 1350 | | I _F = 1.5A |
| | | — | 565 | — | | I _F = 500mA, T _A = +100°C |
| Reverse Current | I _R | — | 20 | 40 | μA | V _R = 45V |
| Diode Capacitance | C _D | — | 20 | — | pF | f = 1MHz, V _R = 25V |
| Reverse Recovery Time | trr | — | 10 | — | ns | Switched from I _F = 500mA to I _R = 500mA Measured @ I _R = 50mA |

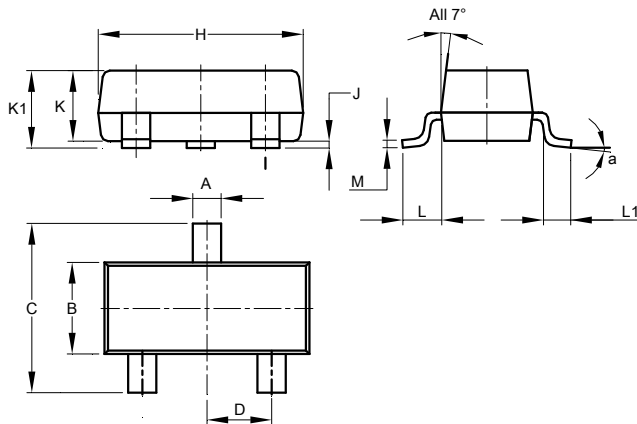
Note: 5. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle 2%.





Package Outline Dimensions

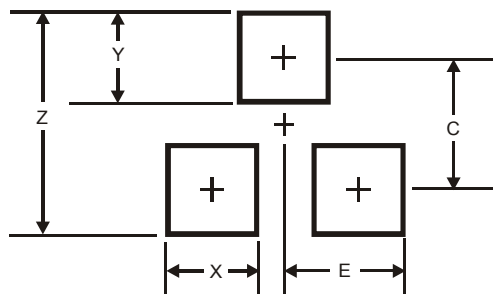
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version



| SOT23 | | | |
|----------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 0.37 | 0.51 | 0.40 |
| B | 1.20 | 1.40 | 1.30 |
| C | 2.30 | 2.50 | 2.40 |
| D | 0.89 | 1.03 | 0.915 |
| F | 0.45 | 0.60 | 0.535 |
| G | 1.78 | 2.05 | 1.83 |
| H | 2.80 | 3.00 | 2.90 |
| J | 0.013 | 0.10 | 0.05 |
| K | 0.890 | 1.00 | 0.975 |
| K1 | 0.903 | 1.10 | 1.025 |
| L | 0.45 | 0.61 | 0.55 |
| L1 | 0.25 | 0.55 | 0.40 |
| M | 0.085 | 0.150 | 0.110 |
| a | 8° | | |
| All Dimensions in mm | | | |

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 2.9 |
| X | 0.8 |
| Y | 0.9 |
| C | 2.0 |
| E | 1.35 |

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