


**Features**

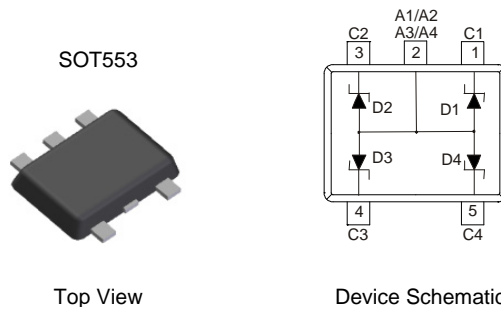
- Quad TVS in Common Anode Configuration
- Ultra-Small Surface Mount Package
- Ideal For Transient Suppression and ESD Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**ESD Capability**

- IEC 61000-4-2 Contact Method  $\pm 8kV$
- IEC 61000-4-2 Air Discharge Method  $\pm 15kV$

**Mechanical Data**

- Case: SOT553
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Finish: Matte Tin, Annealed Over Copper Leadframe. Solderable per MIL-STD-202, Method 208 
- Weight: 0.002 grams (approx.)

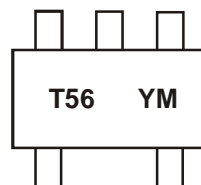


**Ordering Information** (Note 4)

| Part Number   | Case   | Packaging        |
|---------------|--------|------------------|
| DZQA5V6AXV5-7 | SOT553 | 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**



T56 = Product type marking code  
 YM = Date Code Marking  
 Y = Year (ex: W = 2009)  
 M = Month (ex: 9 = September)

Date Code Key

| Year  | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |     |     |
|-------|------|------|------|------|------|------|------|------|------|------|-----|-----|
| Code  | W    | X    | Y    | 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   |

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

| Characteristic                        | Symbol | Value | Unit |
|---------------------------------------|--------|-------|------|
| Forward Voltage @ $I_F = 10\text{mA}$ | $V_F$  | 0.9   | V    |

**Thermal Characteristics**

| Characteristic   | Symbol          | Value       | Unit               |
|--|-----------------|-------------|--------------------|
| Power Dissipation (Notes 5 & 6)                              | $P_D$           | 380         | mW                 |
| Peak Power Dissipation, 8x20 $\mu\text{s}$ Waveform (Note 7) | $P_{pk}$        | 20          | W                  |
| Thermal Resistance, Junction-to-Ambient (Note 5)             | $R_{\theta JA}$ | 327         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                      | $T_J, T_{STG}$  | -55 to +150 | $^\circ\text{C}$   |

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

| Type Number | Marking Code | Breakdown Voltage (Note 8)  |         |         | Leakage Current (Note 8) |     | Max. Clamping Voltage (Note 7) |              | Capacitance @ 0V Bias (pF) (Note 9) |     | Capacitance @ 3V Bias (pF) (Note 9) |      |
|-------------|--------------|-----------------------------|---------|---------|--------------------------|-----|--------------------------------|--------------|-------------------------------------|-----|-------------------------------------|------|
|             |              | $V_{BR} @ I_T = 1\text{mA}$ |         |         | $I_{RM} @ V_{RM}$        |     | $V_C @ I_{PP}$                 |              | $C_T$                               |     | $C_T$                               |      |
|             |              | Min (V)                     | Nom (V) | Max (V) | Max( $\mu\text{A}$ )     | (V) | $V_C$ (V)                      | $I_{PP}$ (A) | Typ                                 | Max | Typ                                 | Max  |
| DZQA5V6AXV5 | T56          | 5.3                         | 5.6     | 5.9     | 1                        | 3.0 | 13                             | 1.6          | 18.7                                | 20  | 11.4                                | 12.3 |

- Notes:
- Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. Suggested Pad Layout Document AP02001, which can be found on our website at <http://www.diodes.com>.
  - Only 1 diode under power. For all 4 diodes under power,  $P_D$  will be 25% of the listed value.
  - Non-repetitive current pulse per Figure 2 and derate above  $T_A = +25^\circ\text{C}$  per Figure 1.
  - Short duration pulse test used to minimize self-heating effect.
  - Per element,  $f = 1\text{MHz}$ ,  $T_A = +25^\circ\text{C}$

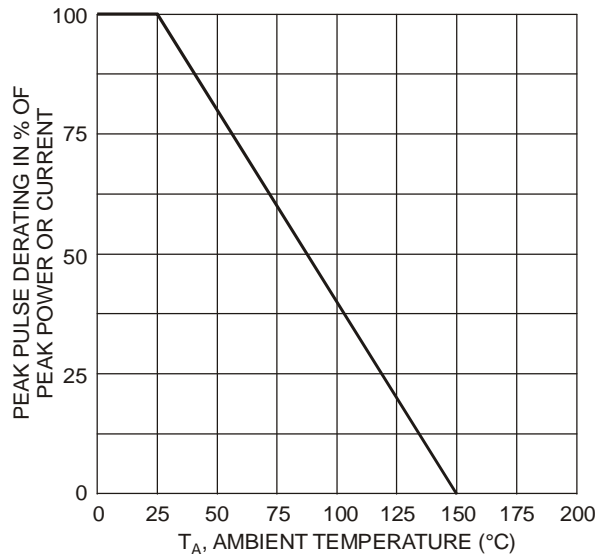


Fig. 1 Pulse Derating Curve

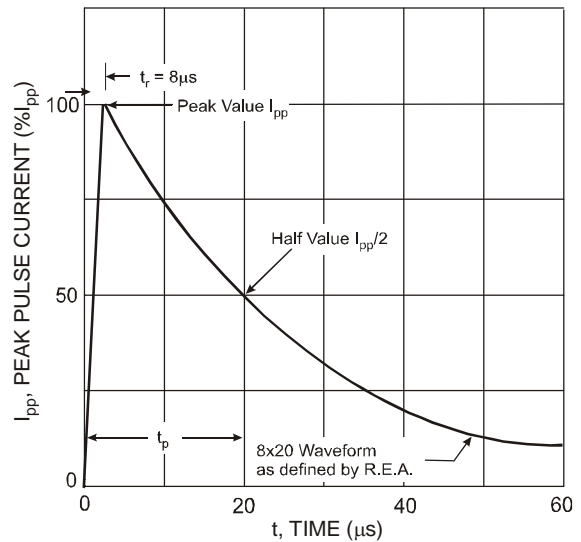


Fig. 2 Pulse Waveform

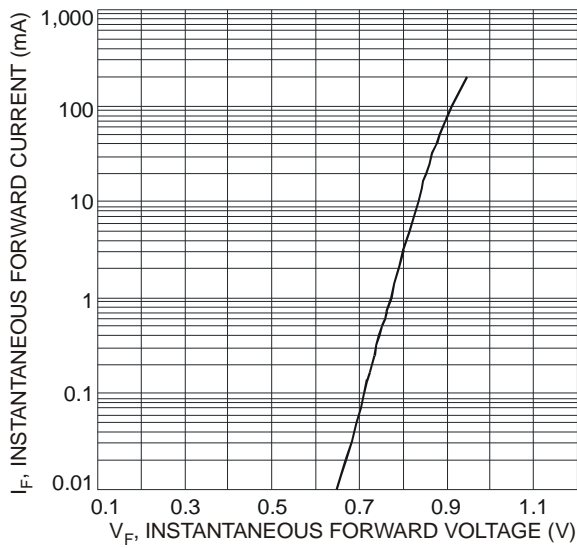


Fig. 3 Typical Forward Characteristics

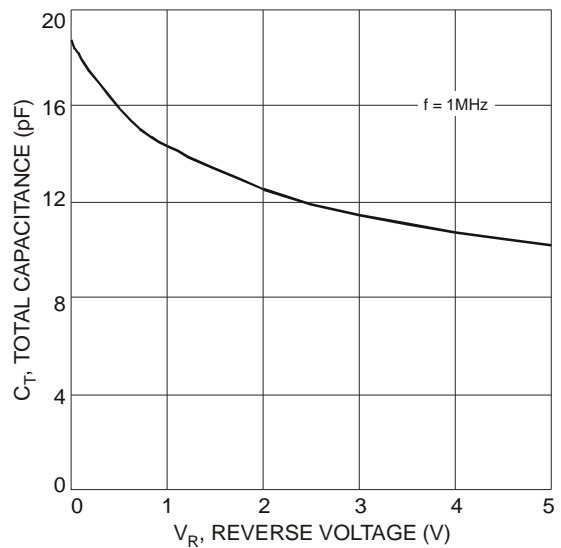
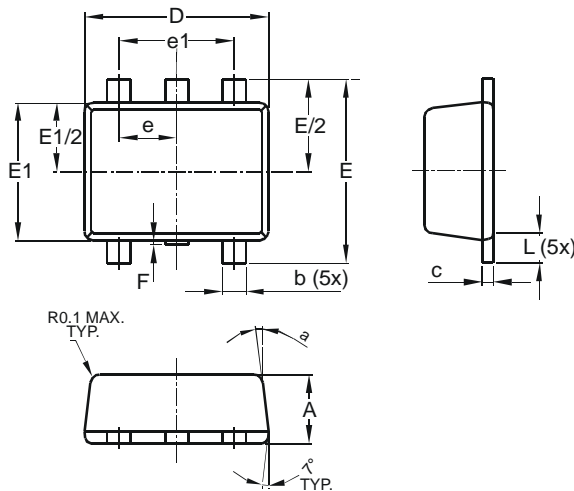


Fig. 4 Typical Total Capacitance vs. Reverse Voltage (Per Element)

## Package Outline Dimensions

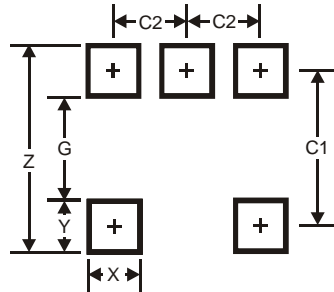
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| SOT553               |          |      |      |
|----------------------|----------|------|------|
| Dim                  | Min      | Max  | Typ  |
| A                    | 0.55     | 0.62 | 0.60 |
| b                    | 0.15     | 0.30 | 0.20 |
| c                    | 0.10     | 0.18 | 0.15 |
| D                    | 1.50     | 1.70 | 1.60 |
| E                    | 1.55     | 1.70 | 1.60 |
| E1                   | 1.10     | 1.25 | 1.20 |
| e                    | 0.50 BSC |      |      |
| e1                   | 1.00 BSC |      |      |
| F                    | 0.00     | 0.10 | —    |
| L                    | 0.10     | 0.30 | 0.20 |
| a                    | 6°       | 8°   | 7°   |
| All Dimensions in mm |          |      |      |

## Suggested Pad Layout

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



| 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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