

Features

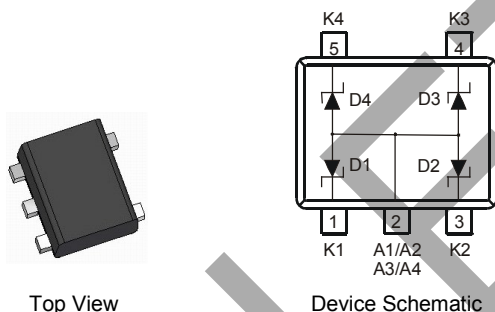
- Quad TVS in Common Anode Configuration
- Ultra-Small Surface Mount Package
- Ideal For Transient Suppression and ESD Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

ESD Capability

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

Mechanical Data

- Case: SOT953
- 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 (E3)
- Weight: 0.002 grams (approximate)



Top View

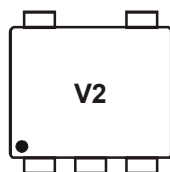
Device Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
DUP45V6P5-7	SOT953	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> 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



V2 = Product type marking code

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)	P_D	300	mW
Peak Power Dissipation, 8x20 μs Waveform (Note 6)	P_{pk}	20	W
Thermal Resistance, Junction-to-Ambient (Note 5)	$R_{\theta JA}$	417	$^\circ\text{C/W}$
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 7)			Leakage Current (Note 7)		Max. Clamping Voltage (Note 6)		Capacitance @0V Bias(pF) (Note 8)		Capacitance @3V Bias(pF) (Note 8)	
		$V_{BR} @ I_T = 1\text{mA}$			$I_{RM} @ V_{RM}$		$V_C @ I_{PP}$		C_T		C_T	
		Min (V)	Nom (V)	Max (V)	Max(μA)	(V)	V_C (V)	I_{PP} (A)	Typ	Max	Typ	Max
DUP45V6P5	V2	5.3	5.6	5.9	1.0	3.0	10.5	1.0	13	17	7.0	11.5

- 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>.
 - Non-repetitive current pulse per Figure 3 and derate above $T_A = +25^\circ\text{C}$ per Figure 3.
 - Short duration pulse test used to minimize self-heating effect.
 - Per element, $f = 1\text{MHz}$, $T_A = +25^\circ\text{C}$

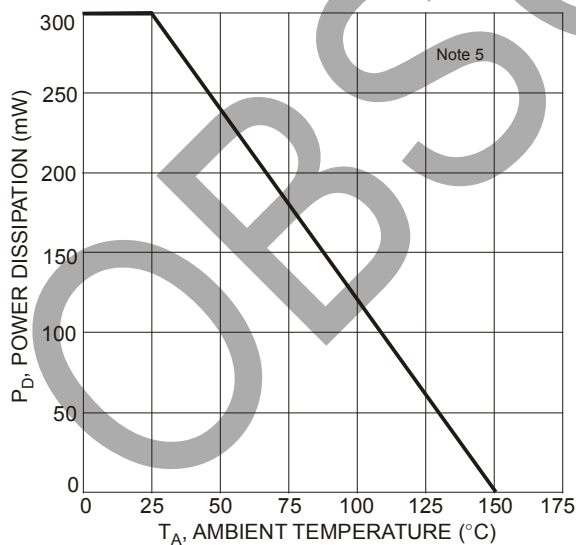


Figure 1 Power Derating Curve

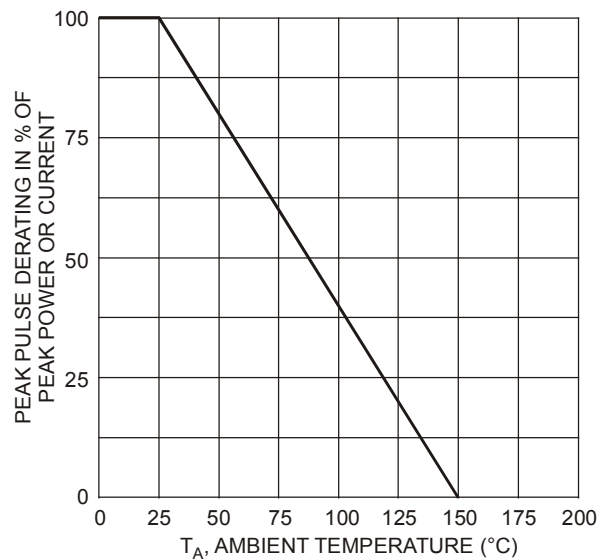


Figure 2 Pulse Derating Curve

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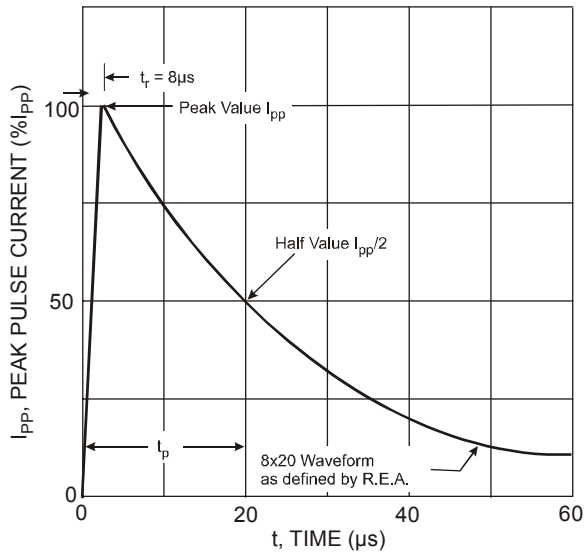


Figure 3 Pulse Waveform

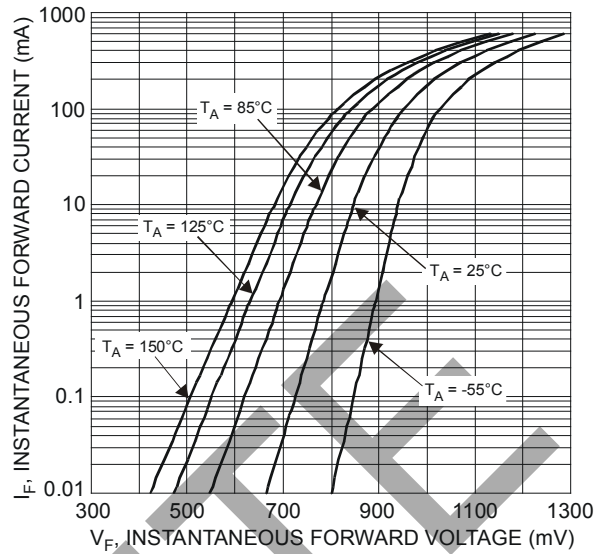


Figure 4 Typical Forward Characteristics

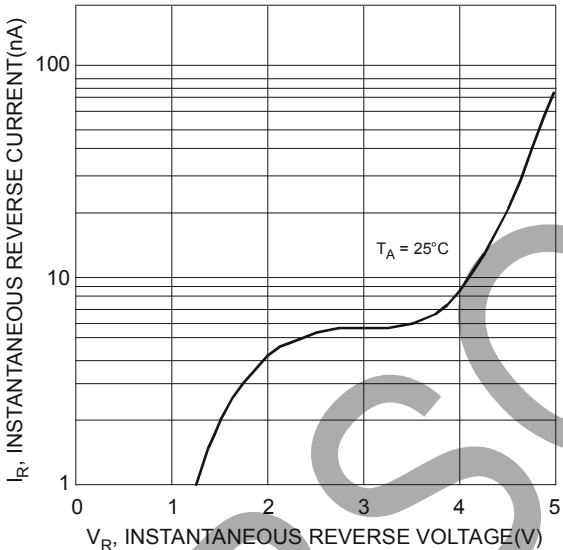


Figure 5 Typical Reverse Characteristics

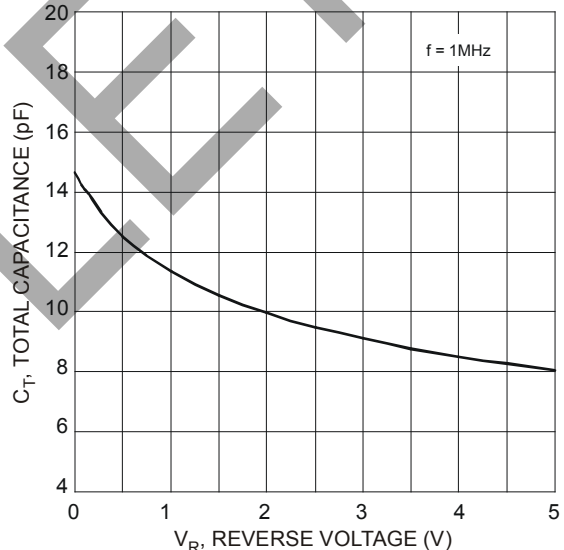
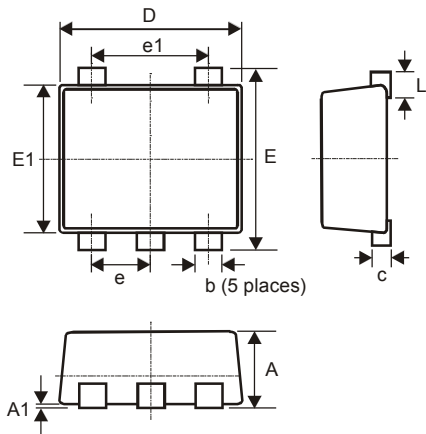


Figure 6 Typical Total Capacitance vs. Reverse Voltage (Per Element)

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Package Outline Dimensions

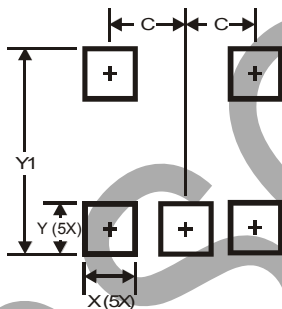
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT953			
Dim	Min	Max	Typ
A	0.40	0.50	0.45
A1	0	0.05	—
b	0.10	0.20	0.15
c	0.12	0.18	0.15
D	0.95	1.05	1.00
E	0.95	1.05	1.00
E1	0.75	0.85	0.80
e	—	—	0.35
e1	—	—	0.70
L	0.05	0.15	0.10
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)
C	0.350
X	0.200
Y	0.200
Y1	1.100

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