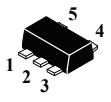
WEITRON

ESDA6V8V5 Series

Quad Array for ESD Protection

Lead(Pb)-Free

Peak Pulse Power
100 Watts
Reverse WorkingVoltage
6.8VOLTS



SOT-553

This quad monolithic silicon voltage suppressor is designed for applications requiring transient overvoltage protection capability. It is intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment, and other applications. Its quad junction common anode design protects four separate lines using only one package. These devices are ideal for situations where board space is at apremium.

Features:

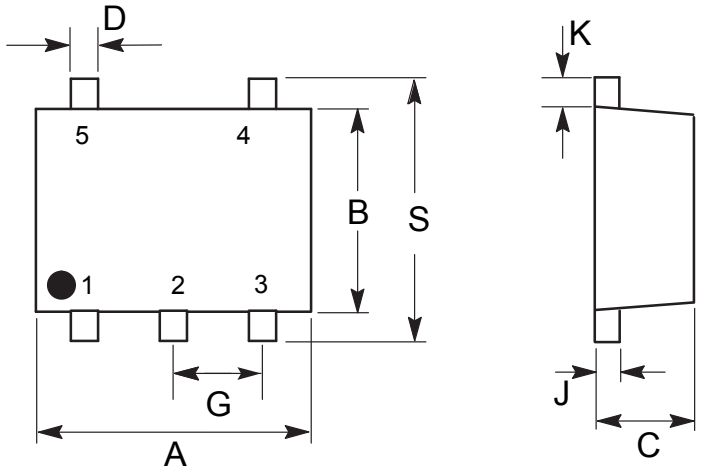
* SOT-553 Package Allows Four Separate Unidirectional Configurations
* Low Leakage < 1μA @ 3 Volt
* Breakdown Voltage: 6.8 Volt @ 1 mA
* ESD Protection Meeting IEC61000-4-2 - Level 4

Mechanical Characteristics:

* Void Free, Transfer-Molded, Thermosetting Plastic Case
* Corrosion Resistant Finish, Easily Solderable
* Package Designed for Optimal Automated Board Assembly
* Small Package Size for High Density Applications

SOT-553 Outline Dimensions

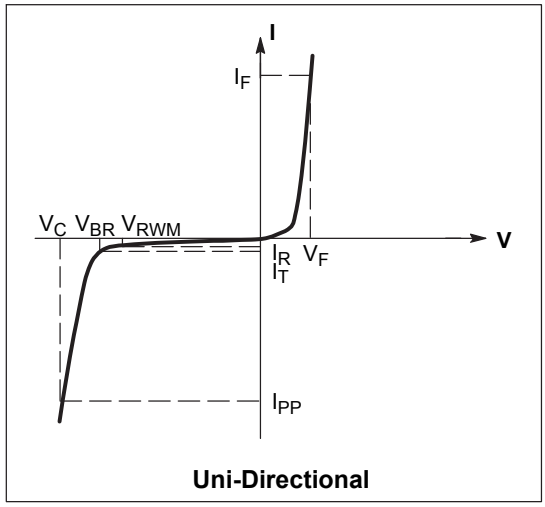
Unit:mm



SOT-553		
Dim	**Min**	**Max**
A	1.50	1.70
B	1.10	1.30
C	0.50	0.60
D	0.17	0.27
G	0.50 REF	
J	0.08	0.16
K	0.10	0.30
S	1.50	1.70

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
V_{BR}	Maximum Temperature Coefficient of V_{BR}
I_F	Forward Current
V_F	Forward Voltage @ I_F
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}



Uni-Directional

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

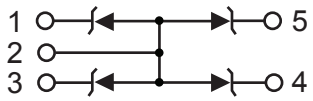
Characteristic	Symbol	Value	Unit
Peak Power Dissipation (8 X 20 μs @ T_A = 25°C) (Note 1)	P_{PK}	100	W
Steady State Power - 1 Diode (Note 2)	P_D	300	mW
Thermal Resistance Junction to Ambient Above 25°C, Derate	$R_{\theta JA}$	370 2.7	°C/W mW/°C
Maximum Junction Temperature	T_{Jmax}	150	°C
Operating Junction and Storage Temperature Range	T_J T_{stg}	-55 to +150	°C
ESD Discharge MIL STD 883C - Method 3015-6 IEC1000-4-2, Air Discharge IEC1000-4-2, Contact Discharge	V_{PP}	16 16 9	kV
Lead Solder Temperature (10 seconds duration)	T_L	260	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Device	Breakdown Voltage V_{BR} @ 1 mA (Volts)			Leakage Current I_{RM} @ V_{RM}		V_C Max @ I_{PP}		Typ Capacitance @ 0 V Bias (Note 3)	Max V_F @ I_F = 200 mA
	Min	Nom	Max	V_{RWM}	I_{RWM} (μA)	V_C (V)	I_{PP} (A)	(pF)	(V)
ESDA5V6V5	5.32	5.6	5.88	3.0	1.0	10.5	10	90	1.3
ESDA6V2V5	5.89	6.2	6.51	4.0	0.5	11.5	9.0	80	1.3
ESDA6V8V5	6.46	6.8	7.14	4.3	0.1	12.5	8.0	70	1.3

1. Non-repetitive current per Figure 1.
2. Only 1 diode under power. For all 4 diodes under power, P_D will be 25%. Mounted on FR-4 board with min pad.
3. Capacitance of one diode at f = 1 MHz, V_R = 0 V, T_A = 25°C

Device Marking

Item	Marking	Eqivalent Circuit diagram
ESDA5V6V5		
ESDA6V2V5		
ESDA6V8V5	VE	

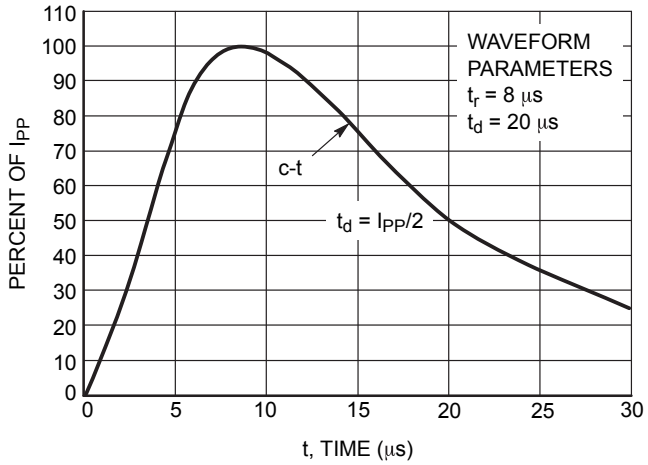


Figure 1. Pulse Waveform

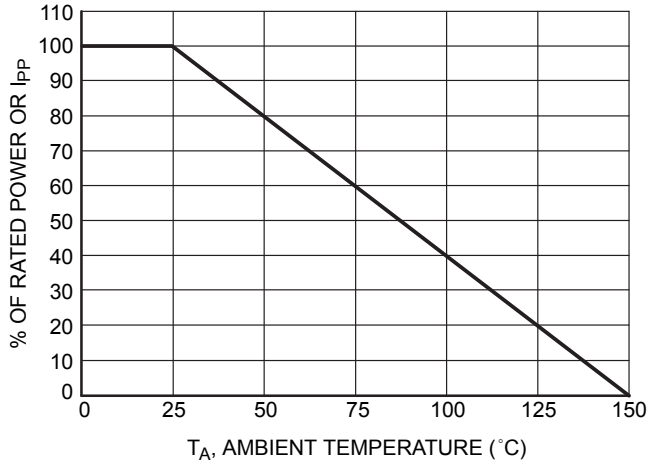


Figure 2. Power Derating Curve

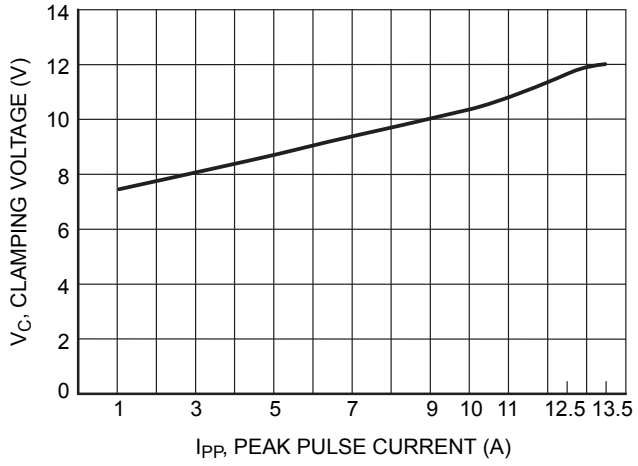


Figure 3. Clamping Voltage versus Peak Pulse Current

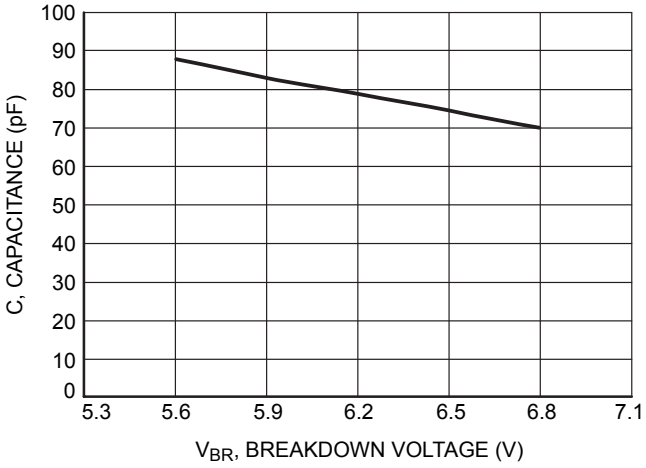


Figure 4. Typical Capacitance