ESDA6V1AW5

Low Junction Capacitance

Transient Voltage Suppressors for ESD Protection

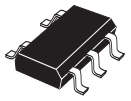
http://www.willsemi.com

Description:

The ESDA6V1AW5 array is 4-Line ESD transient voltage suppressor which provides a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). These devices clamp the voltage just above the logic level supply for positive transient, and to a diode drop below ground for negative transients.

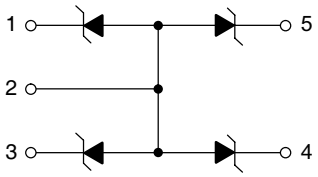
The ESDA6V1AW5 safely dissipates ESD strikes of ±20kV, exceeding the maximum requirement of the IEC 61000-4-2 international standard. Using the MILSTD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the device provides protection for contact discharges to greater than ±16kV.

The ESDA6V1AW5 is available in a SOT-353 package with working voltages of 5 volt.

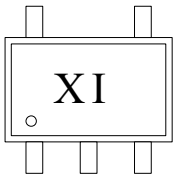


SOT–353

PIN CONFIGURATION



MARKING DIAGRAM



X=Date Code(A~Z is month)

I =Specific Device Code

Specification Features:

- Working Peak Reverse Voltage: 5 V
- Low Leakage current: <1uA@3V
- High ESD protection Level: >20kV per HBM
- IEC61000–4–2 Level 4 ESD Protection
- IEC61000–4–4 Level 4 EFT Protection
- Four separate unidirectional configurations

Mechanical Characteristics

- Void Free, Transfer-Molded, Thermosetting Plastic Case
- Corrosion Resistant Finish, Easily Solderable
- Small Packaging

Order Information

Part Number	Package	Shipping
ESDA6V1AW5-5/TR	SOT-353	3000 Tape & Reel

Applications

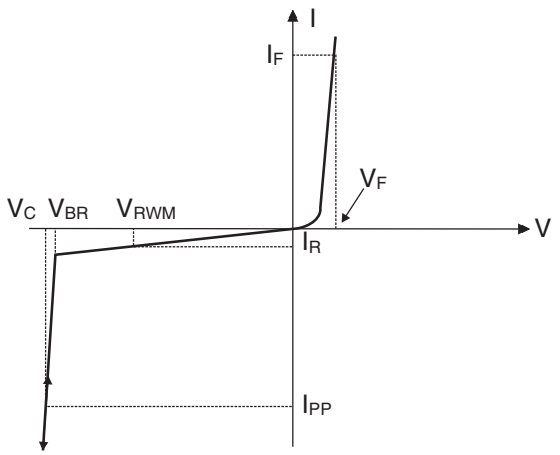
- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDA′s)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power(T_P=8/20us)	P_{PP}	30	W
Maximum Peak Pulse Current(T_P=8/20us)	I_{PP}	1.6	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{PP}	+/-20 +/-16	KV
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{STG}	-55 to+150	°C
Operating Temperature Range	T_{OP}	-55 to+150	°C

Electrical Parameter

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}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics

(T=25℃, Device for 5.0V Working Peak Reverse Voltage)

	Conditions	Minimum	Typical	Maximum	Unit
I_R	V_{RWM}=5V			0.5	uA
V_F	I_F= -10mA	-0.4	-0.8	-1.25	V
V_{BR}	I_T=1mA	6.1	6.6	7.2	V
V_C	I_{PP}=1A, T_P = 8/20us, note1			9.8	V
	I_{PP}=1.6A, T_P = 8/20us, note1			12.5	V
C	Pin1 to 2 V_R = 0V, f = 1MHz		9		pF

Note1: Surge current waveform per Figure 1.

Typical Characteristics

Figure 1. Pulse Waveform

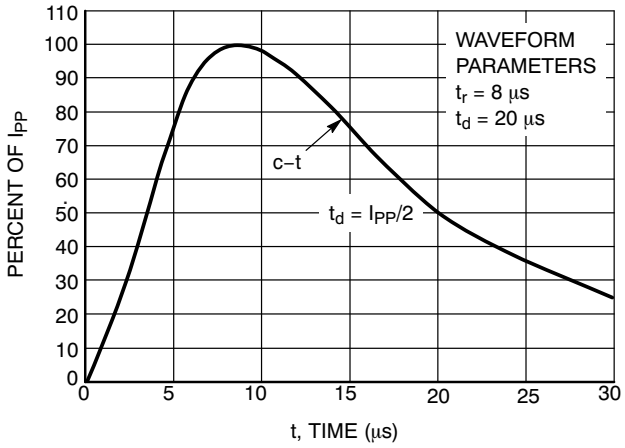


Figure 2. Power Derating Curve

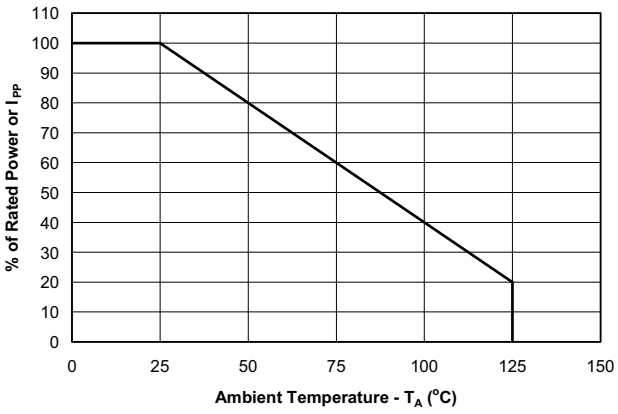


Figure 3. Non-Repetitive Peak Pulse Power vs. Pulse Time

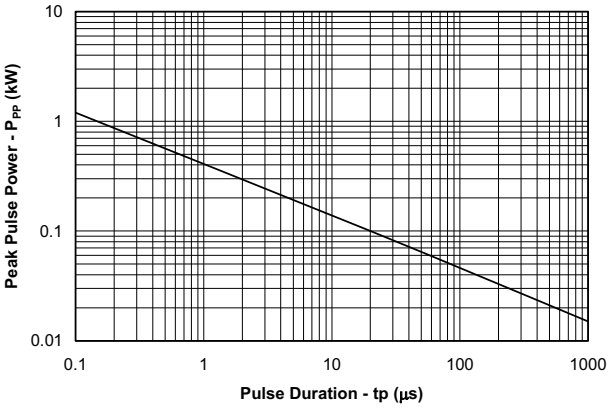
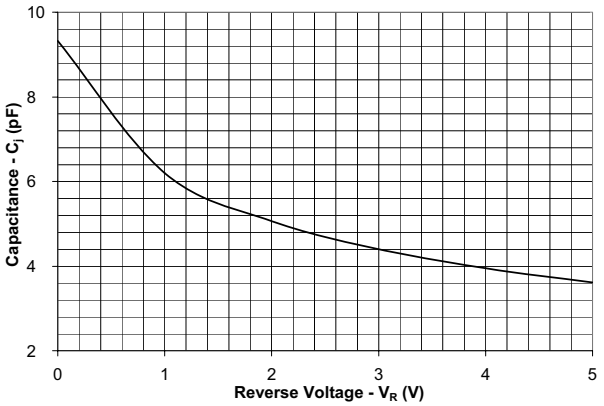
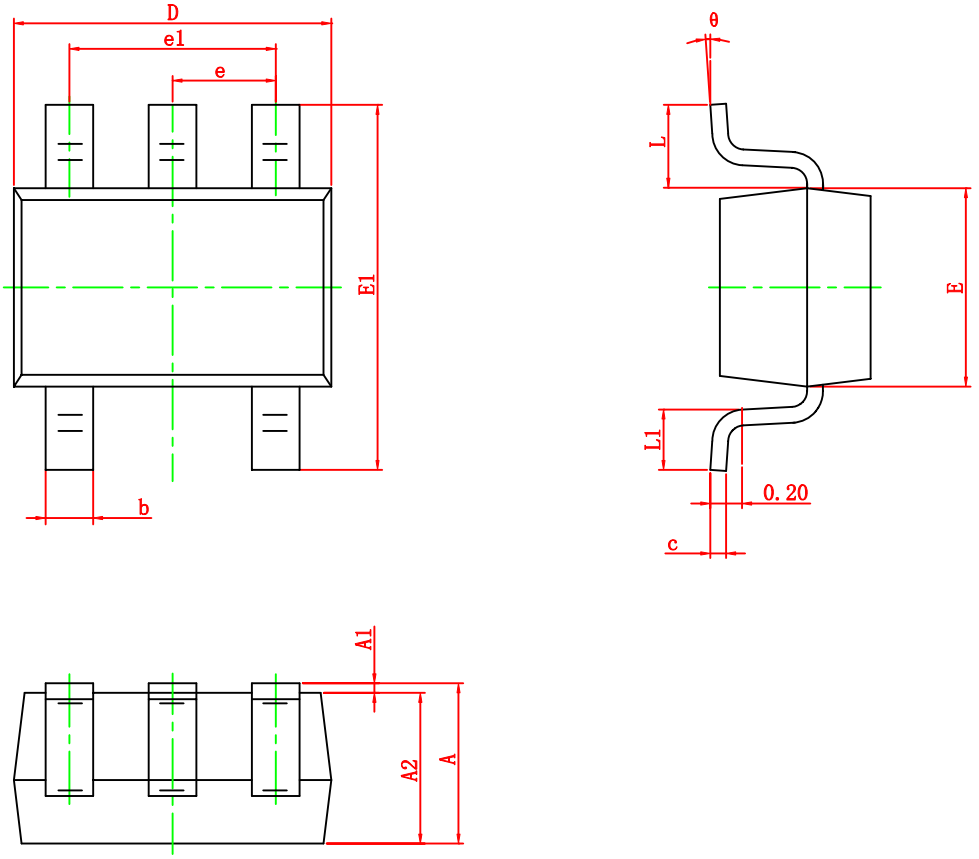


Figure 4. Junction Capacitance vs. Reverse Voltage



Package mechanical data

SOT-353



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°