

ESDA6V8V6

Transient Voltage Suppressors for ESD Protection

Description:

The ESDA6V8V6 array is 5-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 ESDA6V8V6 safely dissipates ESD strikes of $\pm 20\text{kV}$, 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 $\pm 20\text{kV}$. The ESDA6V8V6 is available in a SOT-563 SMT package with working voltages of 5 volt.

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
- Five separate unidirectional configurations

Mechanical Characteristics

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

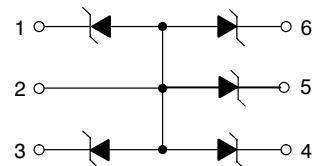
Applications

- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Digital Cameras
- Peripherals
- MP3 Players

<http://www.willsemi.com>



SOT-563



MARKING DIAGRAM



xx = Specific Device Code
M = Date Code

Ordering Information

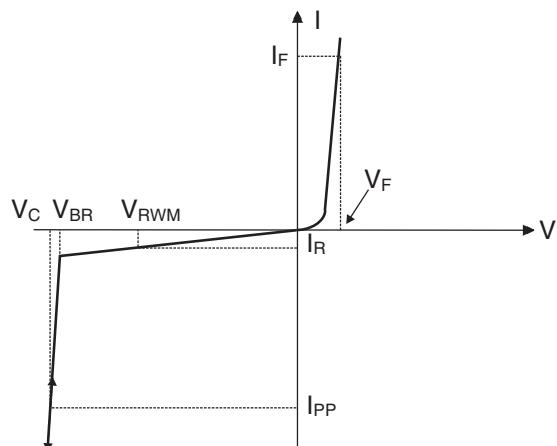
Device	Package	Shipping
ESDA6V8V6 - 6/TR	SOT-563	3000 Tape & Reel

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power(tp=8/20us)	P _{pp}	300	W
Maximum Peak Pulse Current(tp=8/20us)	I _{pp}	16	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{pp}	±20 ±20	KV
Maximum lead temperature for soldering during 10s	T _L	260	°C
Storage Temperature Range	T _{stg}	-55~+150	°C
Operating Temperature Range	T _{op}	-55~+125	°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°C, 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	6.2	6.8	7.2	V
V _C	I _{PP} =1A, t _p = 8/20us, note1			10	V
	I _{PP} =20A, t _p = 8/20us, note1			12.5	V
C	Pin1 to 2 V _R = 0V, f = 1MHz		50		pF

Note1: Surge current waveform per Figure 1.

Typical Characteristics

Figure 1. Pulse Waveform

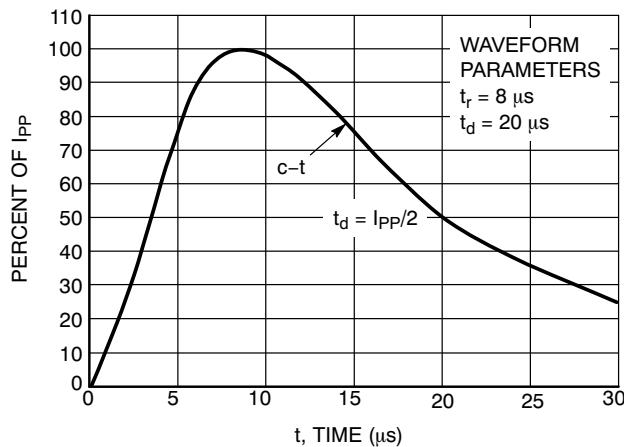


Figure 2. Power Derating Curve

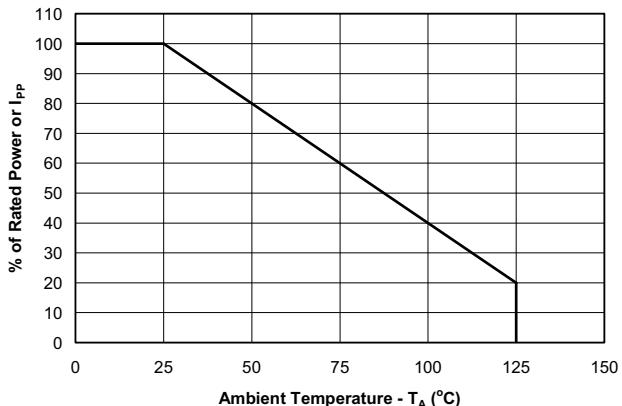


Figure 3. Non-Repetitive Peak Pulse Power vs. Pulse Time

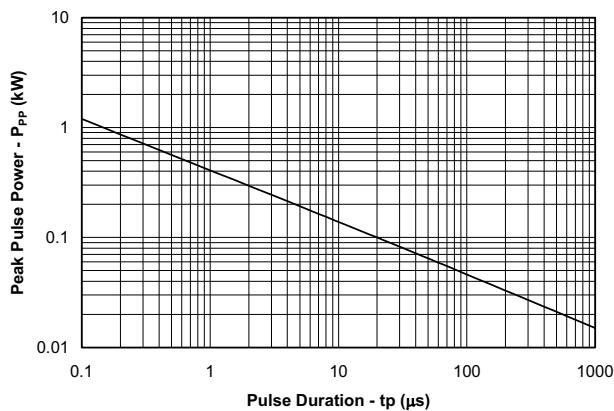
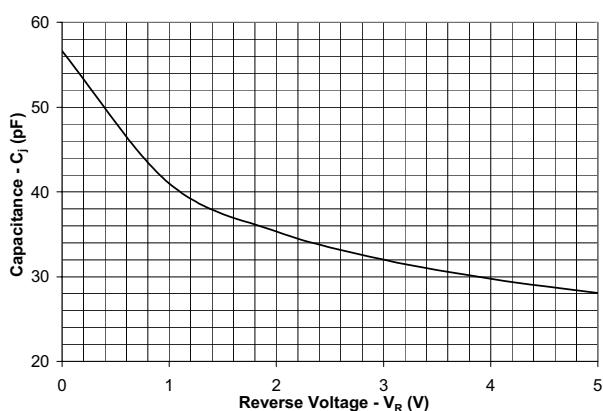
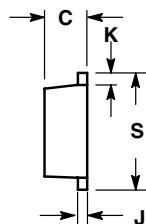
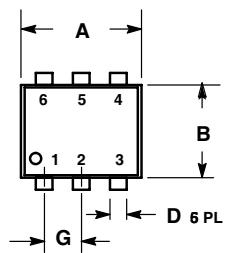


Figure 4. Junction Capacitance vs. Reverse Voltage



Package mechanical data



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50	0.60	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50	BSC	0.020	BSC
J	0.08	0.18	0.003	0.007
K	0.10	0.30	0.004	0.012
S	1.50	1.70	0.059	0.067

STYLE 6:
 PIN 1. CATHODE
 2. ANODE
 3. CATHODE
 4. CATHODE
 5. CATHODE
 6. CATHODE

SOLDERING FOOTPRINT

