

## Transient Voltage Suppressors for ESD Protection

### General Description

The ESDA6V1W6 is monolithic suppressor designed to protect components connected to data and transmission lines against ESD. This device clamps the voltage just above the logic level supply for positive transients and to a diode drop below ground for negative transients.

### Applications

- Computers
- Printers
- Communication systems
- Cellular phones handsets and accessories
- Wireline and wireless telephone sets
- Set top boxes

### Features

- 5 Unidirectional Transil functions
- Low leakage current: < 1  $\mu$ A
- High integration
- 

### Complies with the following standards

IEC61000-4-2

Level 4 15 kV (air discharge)

8 kV(contact discharge)

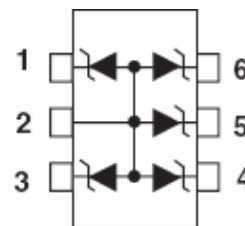
MIL STD 883E - Method 3015-7 Class 3

25 kV HBM (Human Body Model)

### Functional diagram



SOT-363



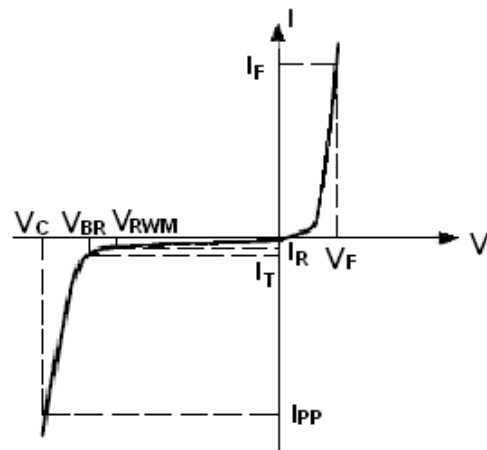
ESDA6V1W6

### Absolute Ratings ( $T_{amb}=25^{\circ}C$ )

Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power( $t_p = 8/20\mu s$ )	150	W
$T_L$	Maximum lead temperature for soldering during 10s	260	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-40 to +125	$^{\circ}C$
$T_{op}$	Operating Temperature Range	-40 to +125	$^{\circ}C$

### 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 @ $I_F$

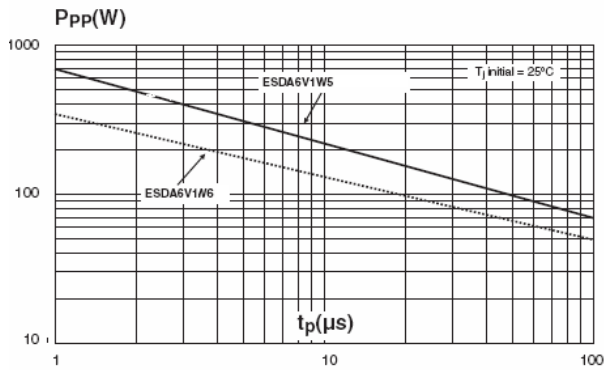


**Transient Voltage Suppressors for ESD Protection**

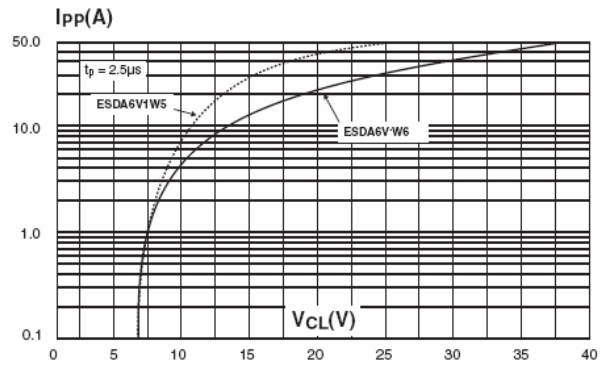
Electrical Characteristics									
Part Numbers	V <sub>BR</sub>			I <sub>T</sub>	V <sub>RWM</sub>	I <sub>R</sub>	V <sub>F</sub>	I <sub>F</sub>	C
	Min.	Typ	Max.				Max.		Typ. 0v bias
	V	V	V				mA		μA
ESDA6V1W6	6.1	6.7	7.2	1	5	1	1.25	200	35

1. Square pulse I<sub>pp</sub>=15A, t<sub>p</sub>=2.5μs    2. V<sub>BR</sub>=aT\*(T<sub>amb</sub>-25°C)\*V<sub>BR</sub>(25°C)

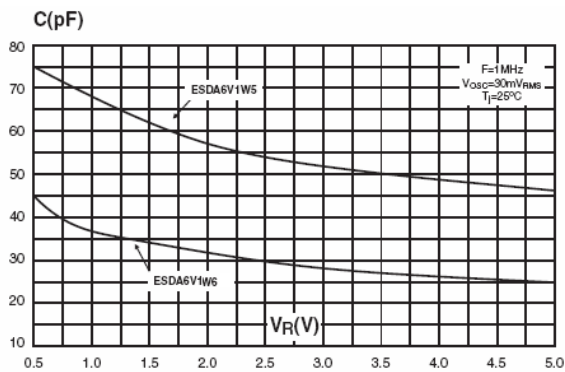
**Typical Characteristics**



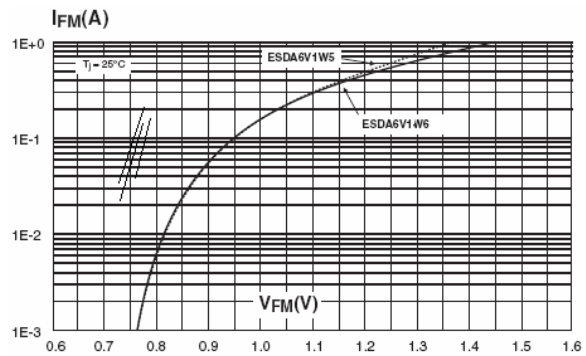
**Fig1. Peak pulse power versus exponential Pulse duration (T<sub>j</sub> initial=25°C)**



**Fig2. Clamping voltage versus peak pulse current (T<sub>j</sub> initial=25°C, rectangular Waveform, t<sub>p</sub>=2.5μs)**



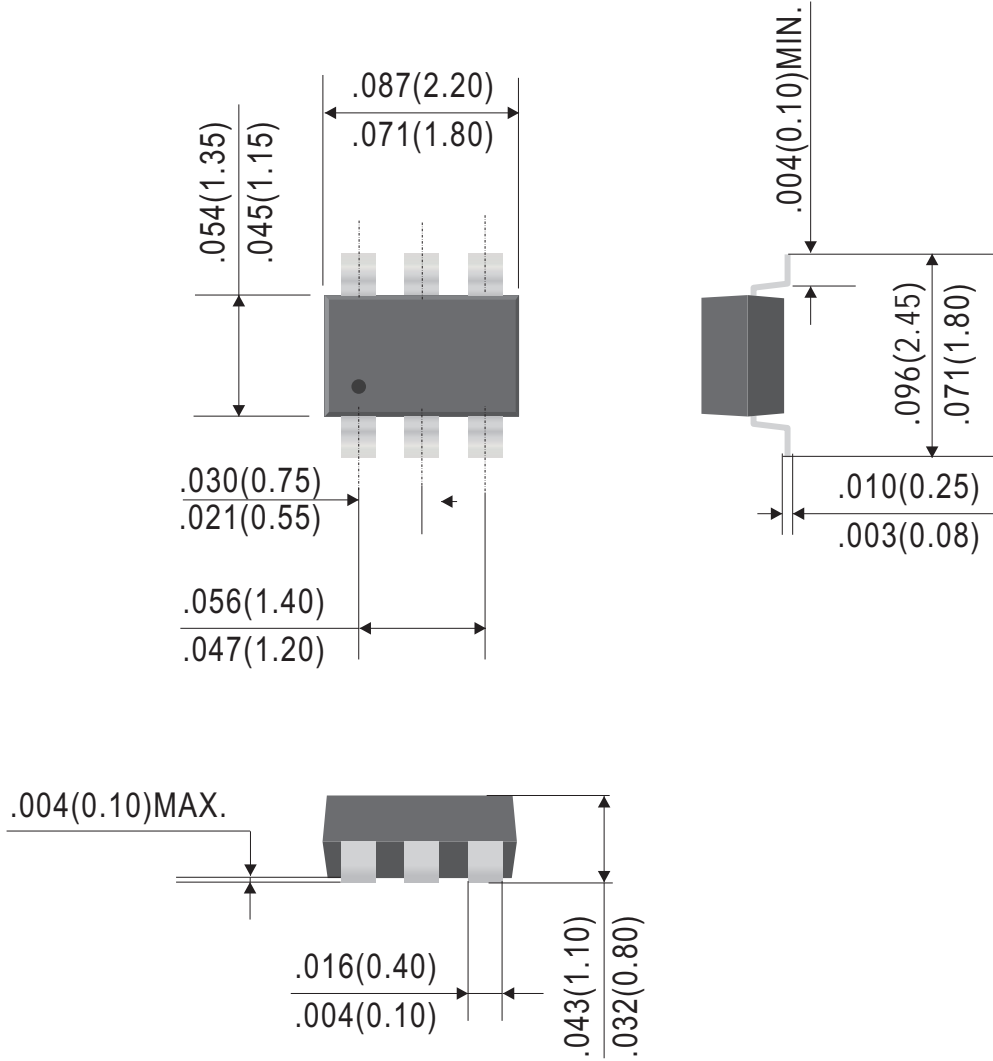
**Fig 3 Capacitance Versus reverse applied voltage**



**Fig 4 Peak Forward Voltage Drop versus forward current**

**Transient Voltage Suppressors for ESD Protection**

**SOT-363 Mechanical Data**



Dimensions in inches and (millimeters)

**Marking**

Type number	Marking code
ESDA6V1W6	W6