

**Transient Voltage Suppressors for ESD Protection**

**General Description**

The ESDA6V1W5 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**

- 4 Unidirectional Transil functions
- Low leakage current: < 1  $\mu$ A
- Very small PCB area < 4.2 mm<sup>2</sup> typically
- High integration
- **Pb-Free package is available**  
RoHS product for packing code suffix "G"  
Halogen free product for packing code suffix "H"
- **Moisture Sensitivity Level 1**

**Complies with the following standards**

**IEC61000-4-2**

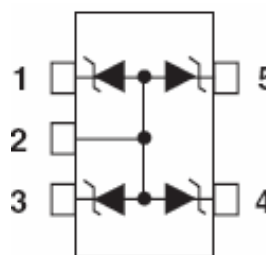
**Level 4 15 kV (air discharge)  
8 kV(contact discharge)**

**MIL STD 883E - Method 3015-7 Class 3  
25 kV HBM (Human Body Model)**

**Functional diagram**



**SOT-353**



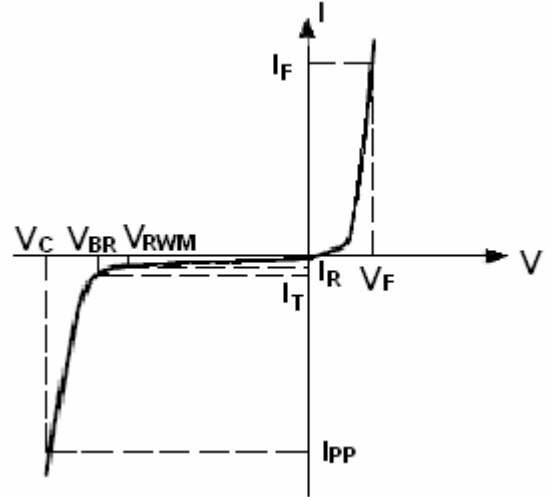
**ESDA6V1W5**

<b>Absolute Ratings (T<sub>amb</sub>=25°C)</b>			
<b>Symbol</b>	<b>Parameter</b>	<b>Value</b>	<b>Units</b>
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20 $\mu$ s)	150	W
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-40 to +125	°C
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C

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**Electrical Parameter**

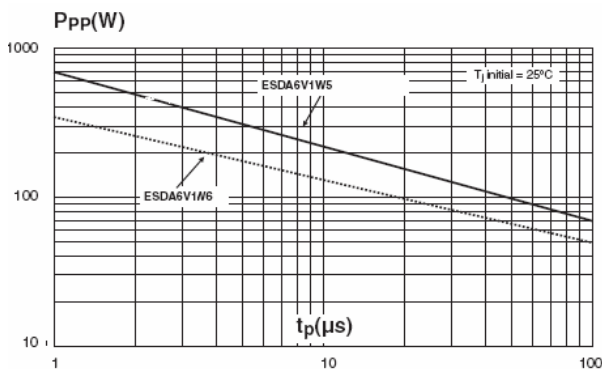
Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



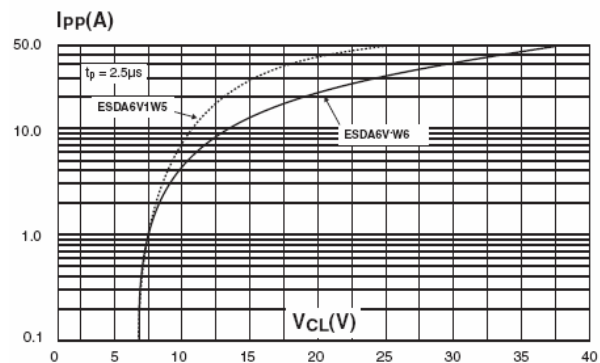
Electrical Characteristics									
Part Numbers	$V_{BR}$			$I_T$	$V_{RWM}$	$I_R$	$V_F$	$I_F$	$C$
	Min.	Typ	Max.				Max.		Typ. 0v bias
	V	V	V				V		pF
ESDA6V1W5	6.1	6.7	7.2	1	5	1	1.25	200	35

1. Square pulse  $I_{PP}=15A, t_p=2.5\mu s$     2.  $V_{BR}=aT^*(T_{amb}-25^\circ C)*V_{BR}(25^\circ C)$

**Typical Characteristics**

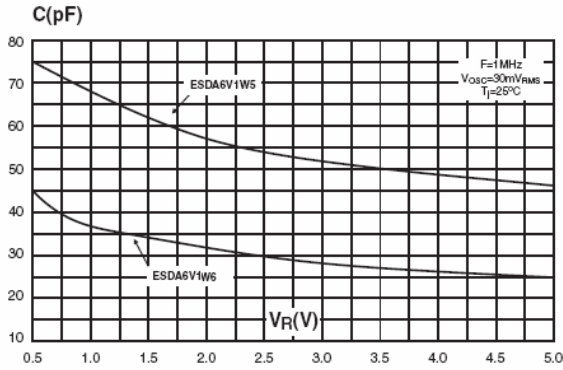


**Fig1. Peak pulse power versus exponential Pulse duration ( $T_j$  initial=25°C)**

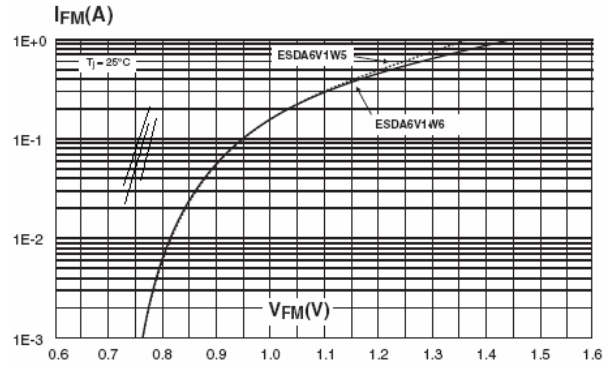


**Fig2. Clamping voltage versus peak pulse current ( $T_j$  initial=25°C, rectangular Waveform,  $t_p=2.5\mu s$ )**

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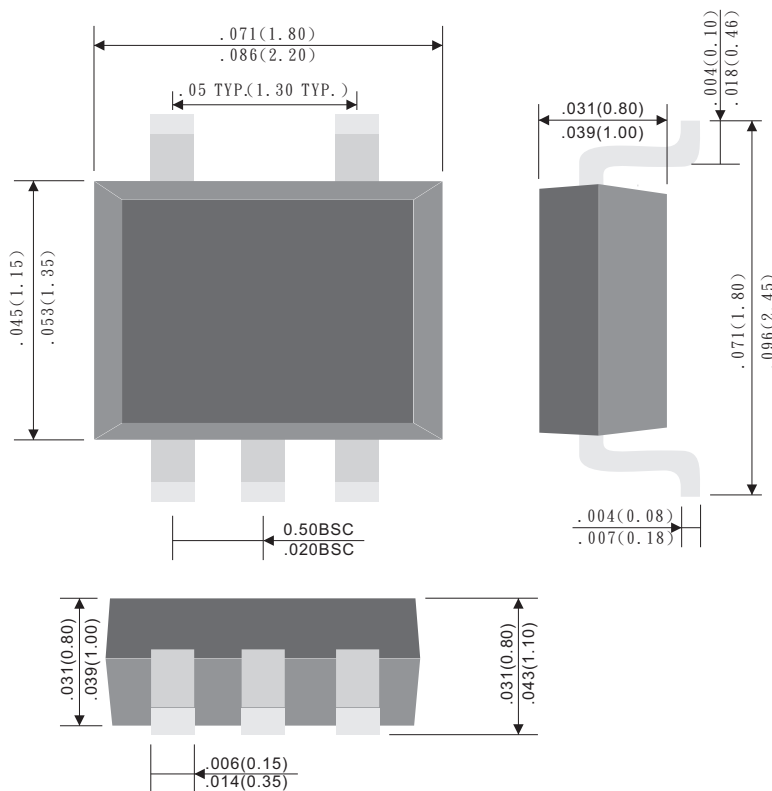


**Fig 3 Capacitance Versus reverse applied voltage**



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

**SOT-353 Mechanical Data**



Dimensions in inches and (millimeters)

**Marking**

Type number	Marking code
ESDA6V1W5	W5

**Transient Voltage Suppressors for ESD Protection****Ordering Information:**

Device PN	Packing
ESDA6V1W5 -T <sup>(1)</sup> G <sup>(2)</sup> -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape &amp; Reel

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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