



Application Specific Discretos  
A.S.D.™

## ESDA6V1-5SC6 TRANSIL™ ARRAY FOR ESD PROTECTION

### APPLICATIONS

Where transient overvoltage protection in ESD sensitive equipment is required, such as :

- Computers
- Printers
- Communication systems
- Cellular phone handsets and accessories
- Other telephone sets
- Set top boxes

### DESCRIPTION

The ESDA6V1-5SC6 is a 5-bit wide monolithic suppressor which is designed to protect against ESD components connected to data and transmission lines.

### FEATURES

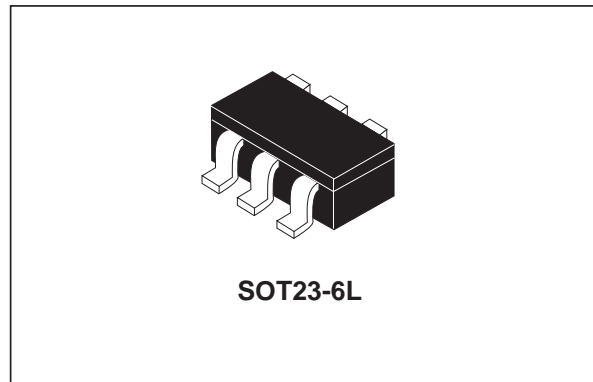
- 5 UNIDIRECTIONAL TRANSIL™ FUNCTIONS
- BREAKDOWN VOLTAGE:  $V_{BR} = 6.1V$  min
- LOW LEAKAGE CURRENT:  $I_R \max < 1 \mu A$

### BENEFITS

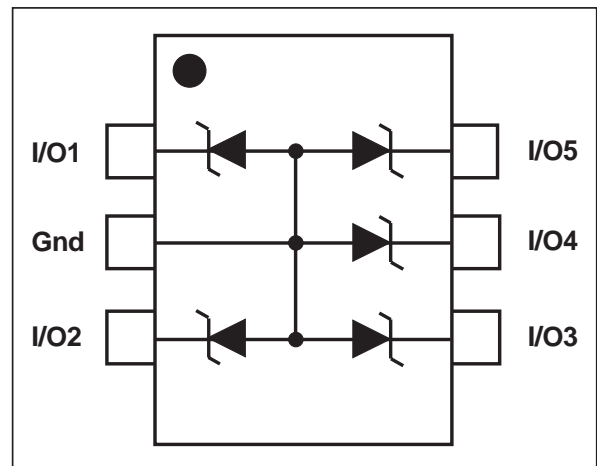
- High integration
- Suitable for high density boards

### COMPLIES WITH THE FOLLOWING STANDARDS:

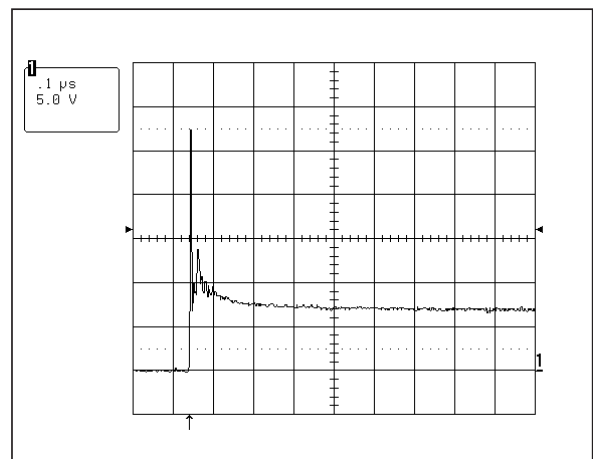
		Test kV	Max current
IEC 61000-4-2 level 4	Air	15	-
	Contact	8	30 A
MIL STD 883C-Method 3015.7 class3 (human body model)	Contact	> 4	> 2.67 A



### FUNCTIONAL DIAGRAM



### ESD response to IEC61000-4-2 (air discharge 16kV, positive surge)



# ESDA6V1-5SC6

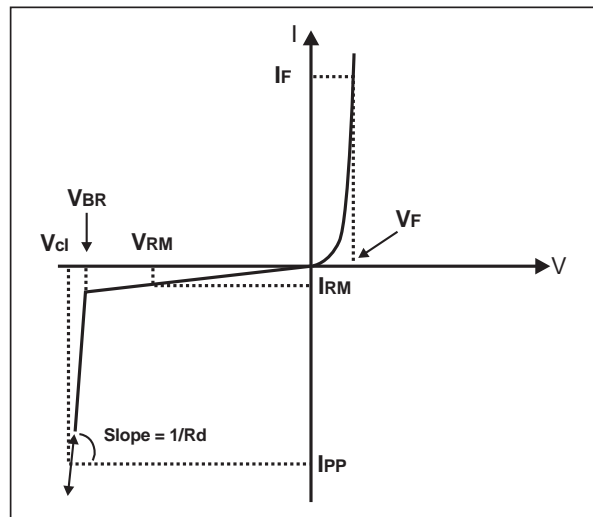
## ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25°C)

Symbol	Test conditions	Value	Unit
V <sub>PP</sub>	ESD discharge - MIL STD 883E - Method 3015-7 IEC 61000-4-2 air discharge IEC 61000-4-2 contact discharge	25 20 15	kV
P <sub>PP</sub>	Peak pulse power (8/20μs)	100	W
T <sub>j</sub>	Junction temperature	150	°C
T <sub>stg</sub>	Storage temperature range	-55 to +150	°C
T <sub>L</sub>	Lead solder temperature (10 seconds duration)	260	°C
T <sub>op</sub>	Operating temperature range (note 1)	-40 to +125	°C

Note 1: The evolution of the operating parameters versus temperature is given by curves and αT parameter.

## ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C)

Symbol	Parameter
V <sub>RM</sub>	Stand-off voltage
V <sub>BR</sub>	Breakdown voltage
V <sub>CL</sub>	Clamping voltage
I <sub>RM</sub>	Leakage current
I <sub>PP</sub>	Peak pulse current
αT	Voltage temperature
C	Capacitance
R <sub>d</sub>	Dynamic impedance
V <sub>F</sub>	Forward voltage drop

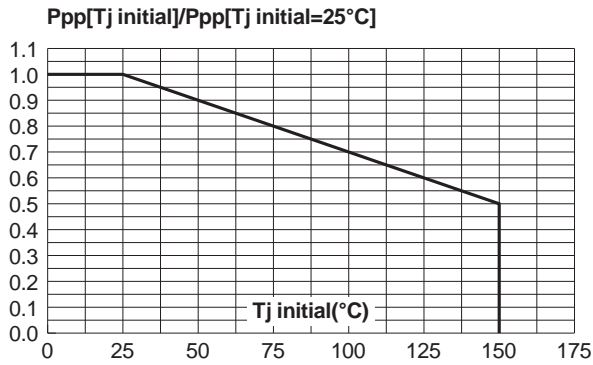


Type	V <sub>BR</sub> @ I <sub>R</sub>		I <sub>RM</sub> @ V <sub>RM</sub>		R <sub>d</sub>	αT	C	V <sub>F</sub> @ I <sub>F</sub>		
	min.	max	max.		typ.	max.	typ.	max		
	V	V	mA	μA	V	mΩ	10 <sup>-4</sup> /°C	pF	V	mA
ESDA6V1-5SC6	6.1	7.2	1	1	3	590	6	50	1.25	200

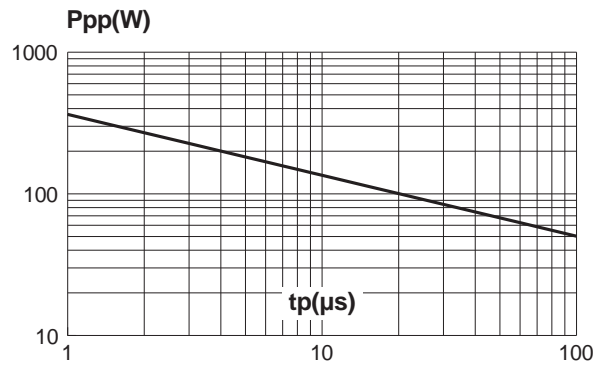
Note 2 : Square pulse, I<sub>pp</sub> = 15A, t<sub>p</sub>=2.5μs.

Note 3: ΔV<sub>BR</sub> = αT \* (T<sub>amb</sub> - 25°C) \* V<sub>BR</sub> (25°C)

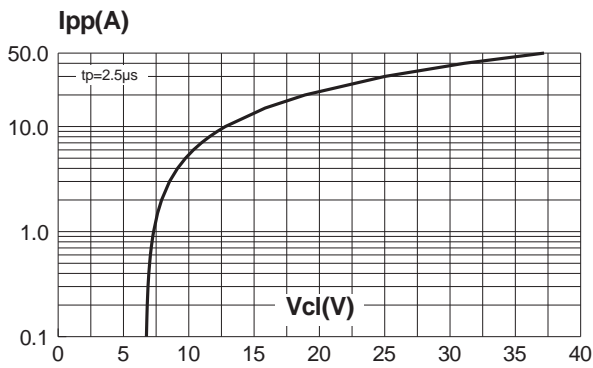
**Fig. 1:** Peak power dissipation versus initial junction temperature.



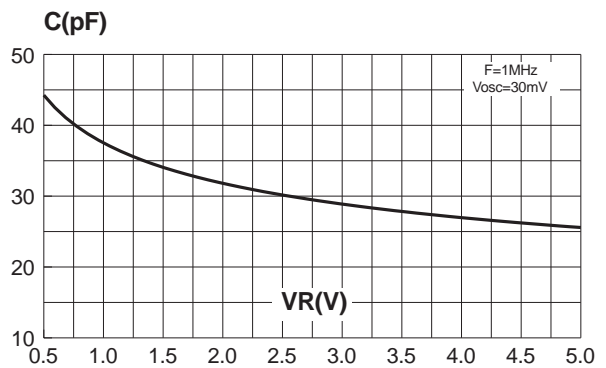
**Fig. 2:** Peak pulse power versus exponential pulse duration (Tj initial = 25°C).



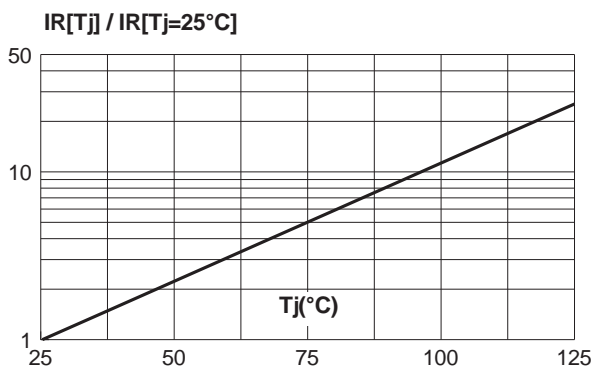
**Fig. 3:** Clamping voltage versus peak pulse current (Tj initial = 25°C) Rectangular waveform tp = 2.5μs.



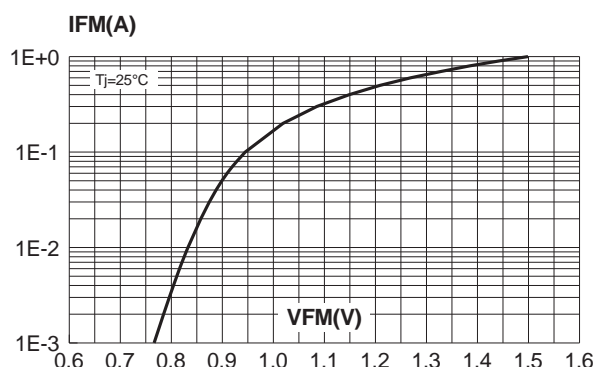
**Fig. 4:** Capacitance versus reverse applied voltage (typical values).



**Fig. 5:** Relative variation of leakage current versus junction temperature (typical values).

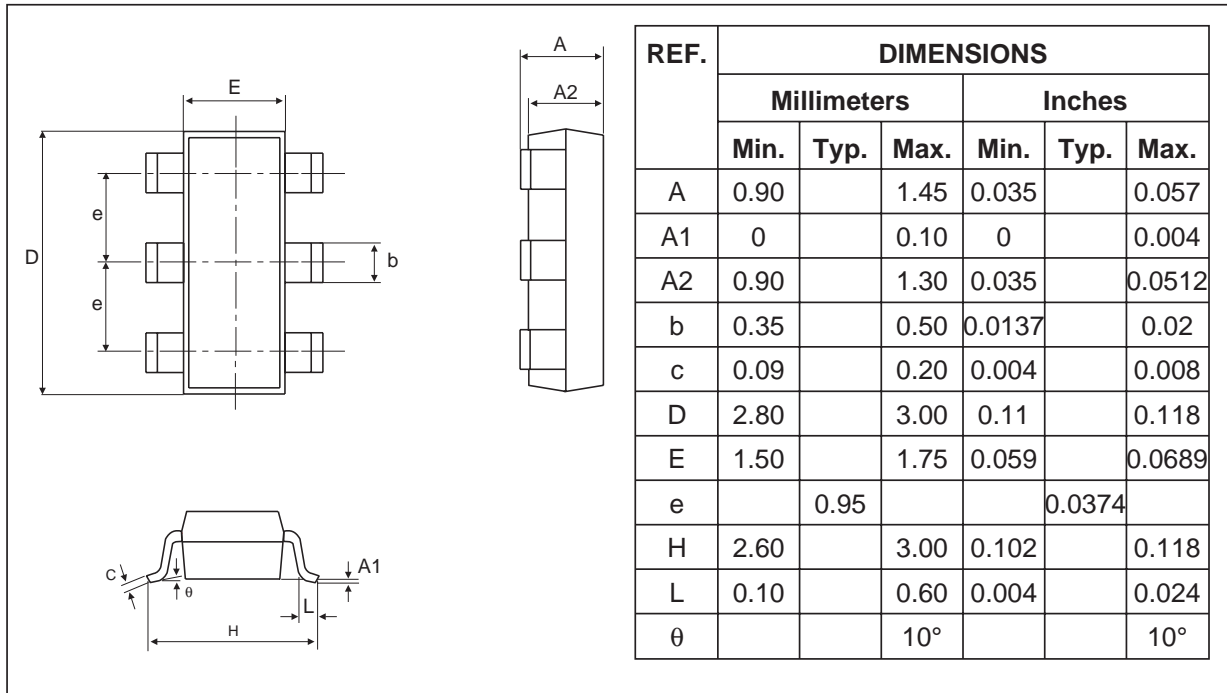


**Fig. 6:** Peak forward voltage drop versus peak forward current (typical values).

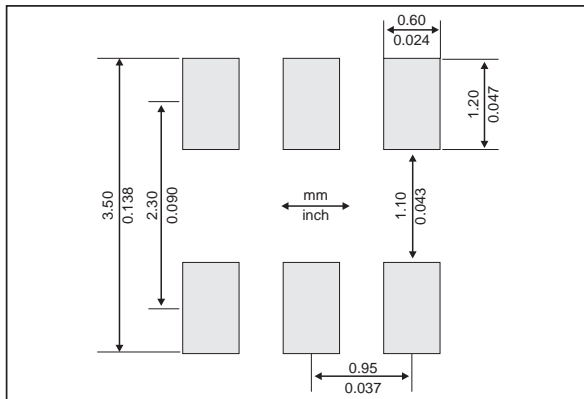


# ESDA6V1-5SC6

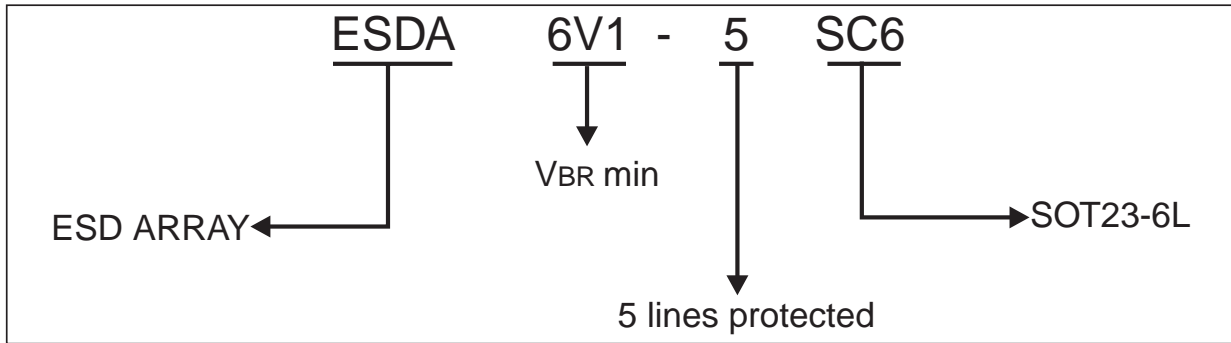
## PACKAGE MECHANICAL DATA SOT23-6L



## FOOT PRINT



**ORDER CODE**



**MARKING**

Type	Marking	Package	Weight	Base Qty	Delivery mode
ESDA6V1-5SC6	EC62	SOT23-6L	16.7 mg	3000	Tape & Reel

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