



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

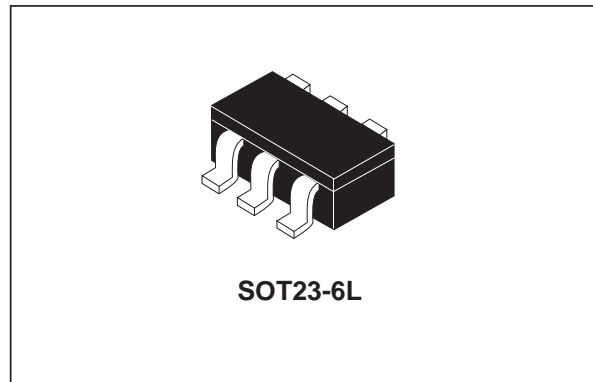
- 5 UNIDIRECTIONAL TRANSIL™ FUNCTIONS
- BREAKDOWN VOLTAGE:  $V_{BR} = 6.1V$  min
- LOW LEAKAGE CURRENT:  $I_R \max < 1 \mu A$

### BENEFITS

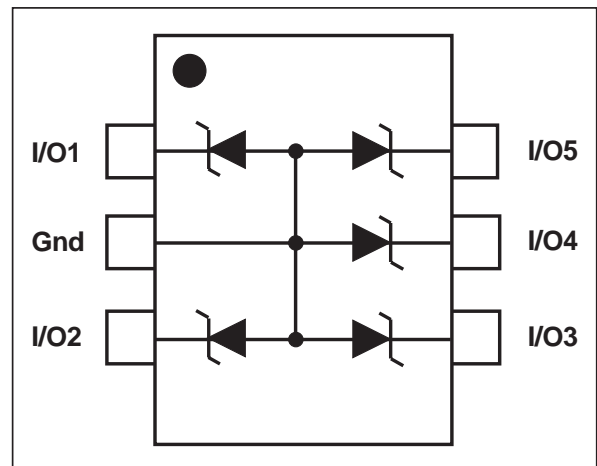
- High integration
- Suitable for high density boards

### COMPLIES WITH THE FOLLOWING STANDARDS:

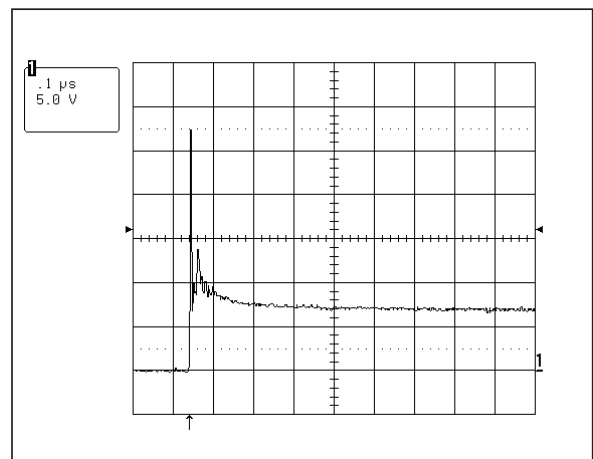
		Test kV	Max current
IEC 61000-4-2 level 4	Air	15	-
	Contact	8	30 A
MIL STD 883C-Method 3015.7 class3 (human body model)	Contact	> 4	> 2.67 A



### FUNCTIONAL DIAGRAM



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



# ESDA6V1-5SC6

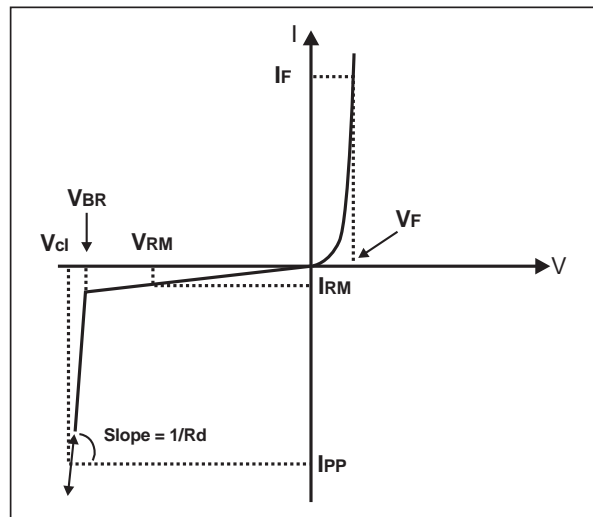
## ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25°C)

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

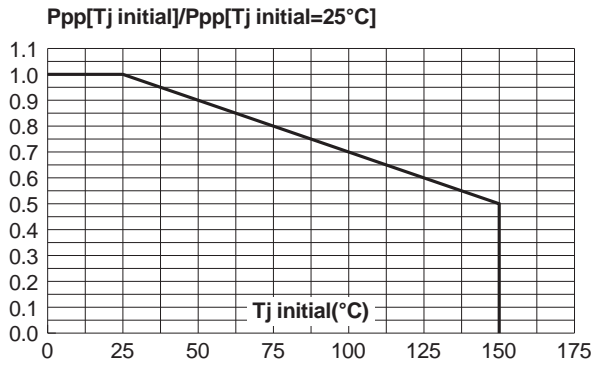


Type	V <sub>BR</sub> @ I <sub>R</sub>		I <sub>RM</sub> @ V <sub>RM</sub>		R <sub>d</sub>	αT	C	V <sub>F</sub> @ I <sub>F</sub>		
	min.	max	max.		typ.	max.	typ.	max		
	V	V	mA	μA	V	mΩ	10 <sup>-4</sup> /°C	pF	V	mA
ESDA6V1-5SC6	6.1	7.2	1	1	3	590	6	50	1.25	200

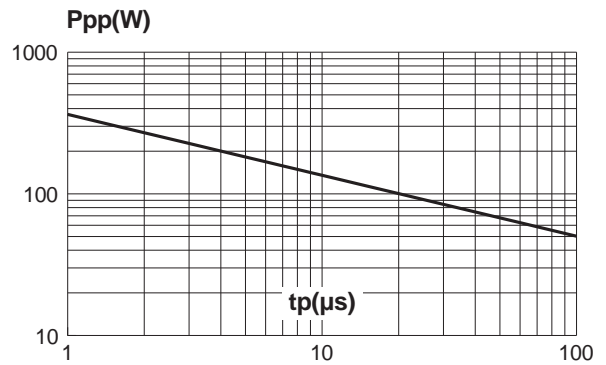
Note 2 : Square pulse, I<sub>pp</sub> = 15A, t<sub>p</sub>=2.5μs.

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

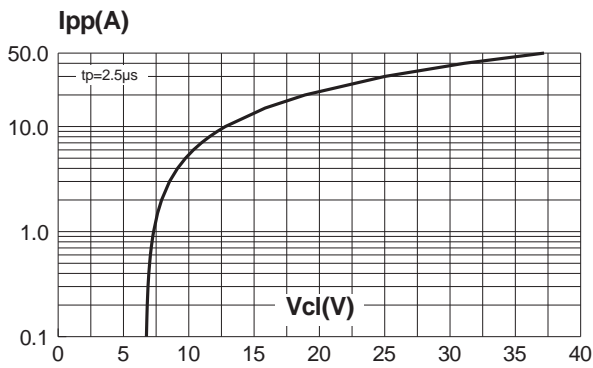
**Fig. 1:** Peak power dissipation versus initial junction temperature.



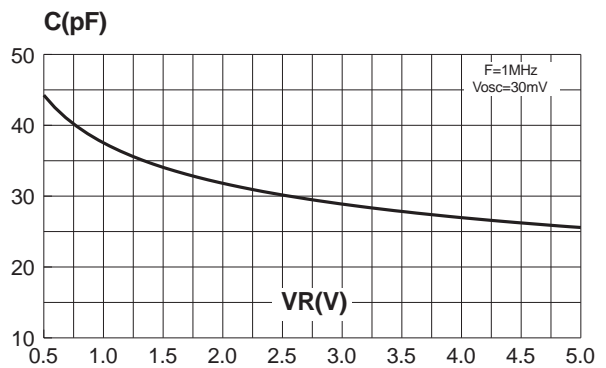
**Fig. 2:** Peak pulse power versus exponential pulse duration (Tj initial = 25°C).



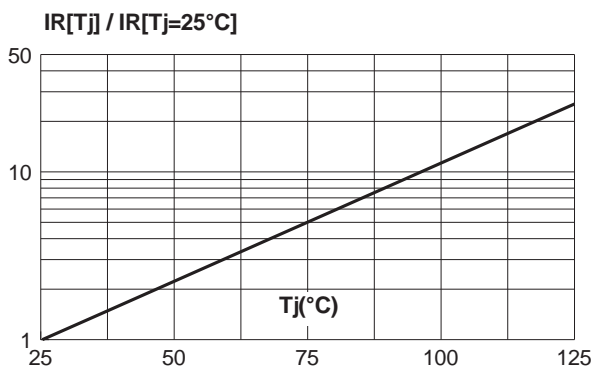
**Fig. 3:** Clamping voltage versus peak pulse current (Tj initial = 25°C) Rectangular waveform tp = 2.5µs.



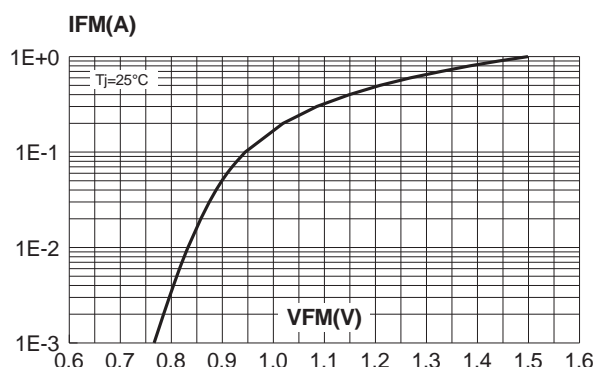
**Fig. 4:** Capacitance versus reverse applied voltage (typical values).



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

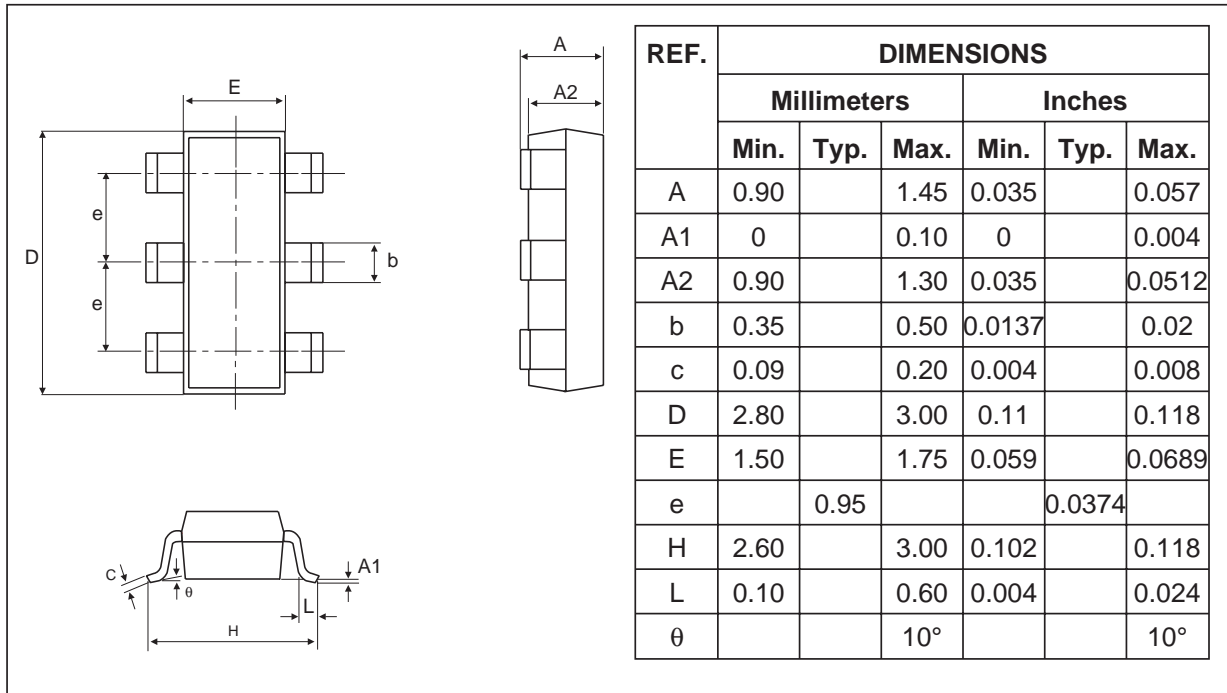


**Fig. 6:** Peak forward voltage drop versus peak forward current (typical values).

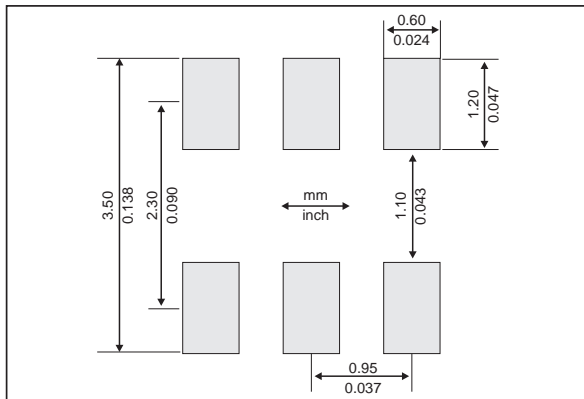


# ESDA6V1-5SC6

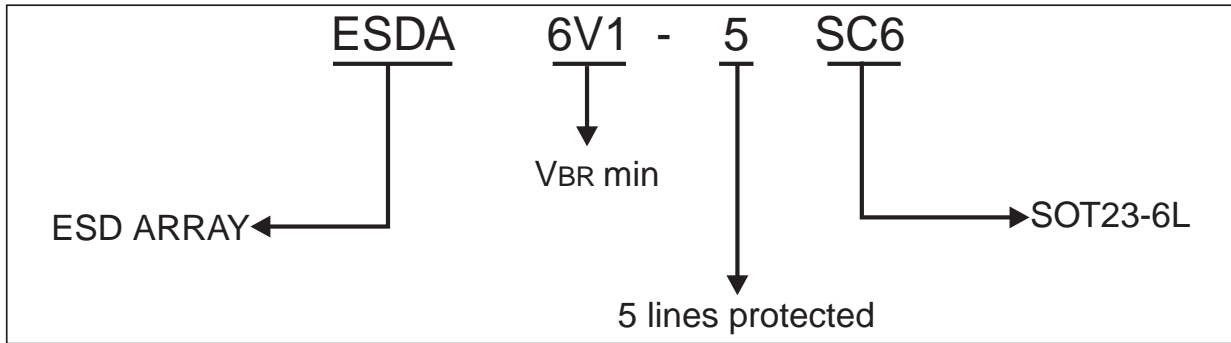
## PACKAGE MECHANICAL DATA SOT23-6L



## FOOT PRINT



**ORDER CODE**



**MARKING**

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

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics  
 © 2002 STMicroelectronics - Printed in Italy - All rights reserved.  
 STMicroelectronics GROUP OF COMPANIES  
 Australia - Brazil - Canada - China - Finland - France - Germany  
 Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore  
 Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>

