



ESDA6V1-5SC6

ASD™

TRANSIL™ ARRAY FOR ESD PROTECTION

MAIN APPLICATIONS

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

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

FEATURES

- 5 Unidirectional Transil™ Functions
- Low leakage current: I_R max. < 1 μ A
- Breakdown voltage: V_{BR} = 6.1V min.

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.

BENEFITS

- High integration
- Suitable for high density boards

COMPLIES WITH THE FOLLOWING STANDARDS:

		Test kV	Max. current
IEC61000-4-2 level 4	Air	15	-
	Contact	8	30A
MIL STD 883C-Method 3015-7 class3 (Human Body Model)	Contact	> 4	> 2.67A

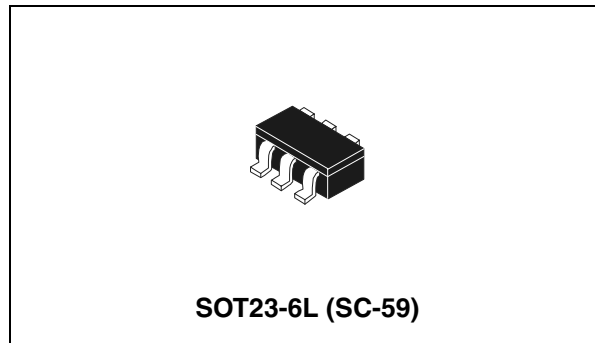


Table 1: Order Code

Part Number	Marking
ESDA6V1-5SC6	EC62

Figure 1: Functional Diagram

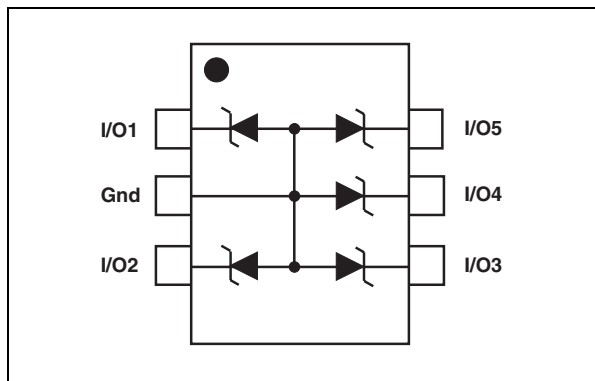
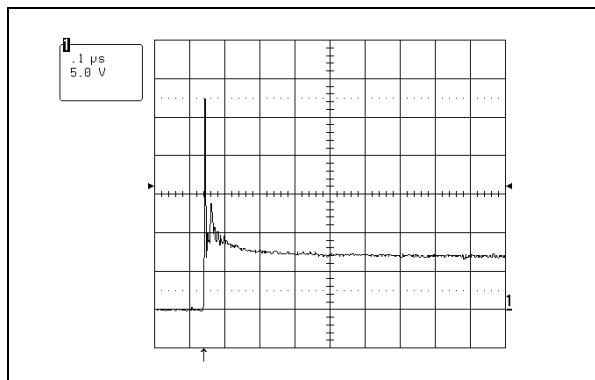


Figure 2: ESD response to IEC61000-4-2 (air discharge 16kV, positive surge)



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ESDA6V1-5SC6

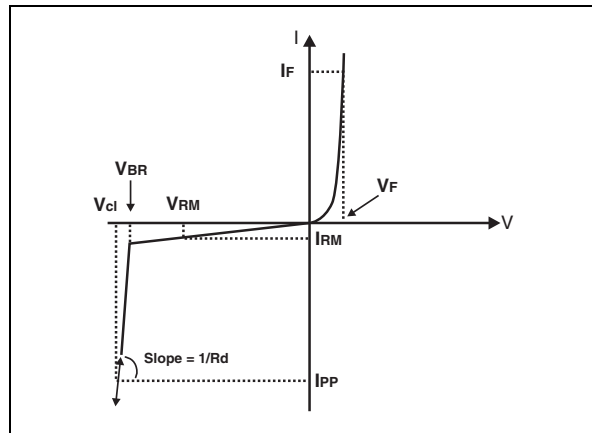
Table 2: Absolute Maximum Ratings ($T_{amb} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{PP}	ESD discharge	MIL STD 883E - Method 3015-7	25
		IEC61000-4-2 air discharge	20
		IEC61000-4-2 contact discharge	15
P_{PP}	Peak pulse power (8/20 μs)	100	W
T_j	Junction temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage temperature range	-55 to +150	$^{\circ}\text{C}$
T_L	Maximum lead temperature for soldering during 10 s at 5mm for case	260	$^{\circ}\text{C}$
T_{op}	Operating temperature range (note 1)	-40 to +125	$^{\circ}\text{C}$

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

Table 3: Electrical Characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{CL}	Clamping voltage
I_{RM}	Leakage current
I_{PP}	Peak pulse current
αT	Voltage temperature coefficient
V_F	Forward voltage drop
C	Capacitance
R_d	Dynamic resistance



Type	V_{BR} @		I_R	I_{RM} @ V_{RM}		R_d	αT	C	V_F @ I_F	
	min.	max.		max.					max.	
	V	V	mA	μA	V	$\text{m}\Omega$	$10^{-4}/^{\circ}\text{C}$	pF	V	mA
ESDA6V1-5SC6	6.1	7.2	1	1	3	590	6	50	1.25	200

Note 2: Square pulse, $I_{PP} = 15\text{A}$, $t_p = 2.5\mu\text{s}$.

Note 3: $\Delta V_{BR} = \alpha T * (T_{amb} - 25^{\circ}\text{C}) * V_{BR}(25^{\circ}\text{C})$.

Figure 3: Peak power dissipation versus initial junction temperature

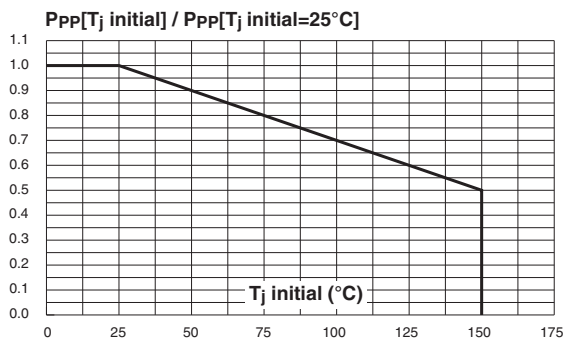
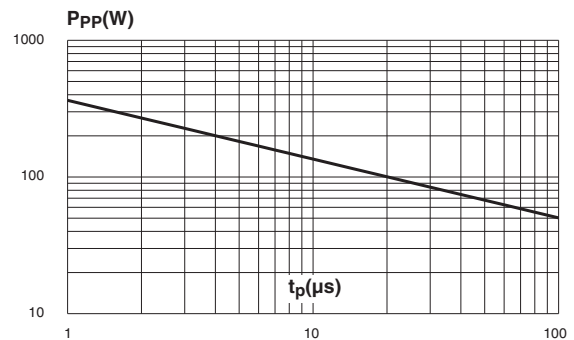


Figure 4: Peak power dissipation versus exponential pulse duration (T_j initial = 25°C)



**Figure 5: Clamping voltage versus peak pulse current (T_j initial = 25 °C).
Rectangular waveform ($t_p = 2.5 \mu s$)**

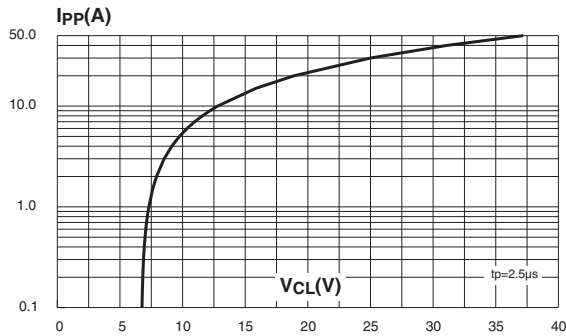


Figure 6: Capacitance versus reverse applied voltage (typical values)

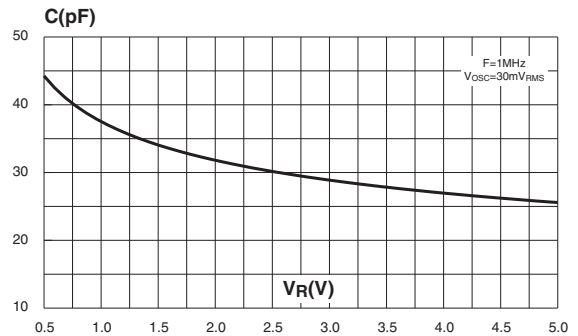


Figure 7: Relative variation of leakage current versus junction temperature (typical values)

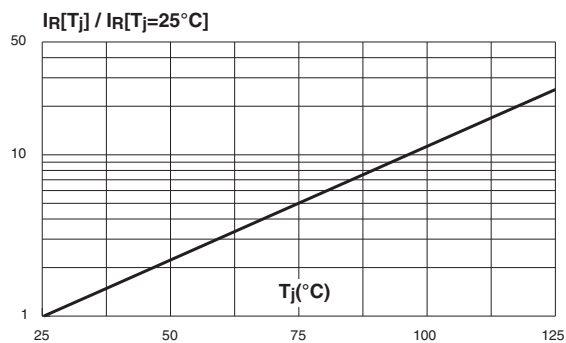


Figure 8: Peak forward voltage drop versus peak forward current (typical values)

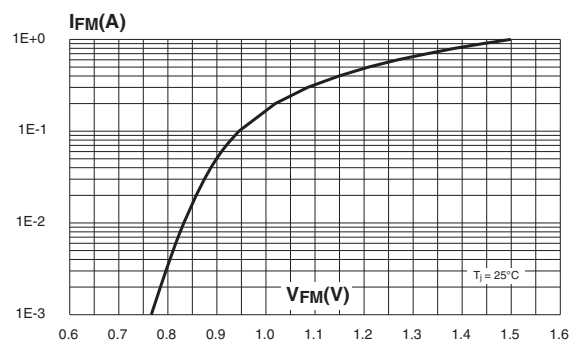


Figure 9: Ordering information scheme

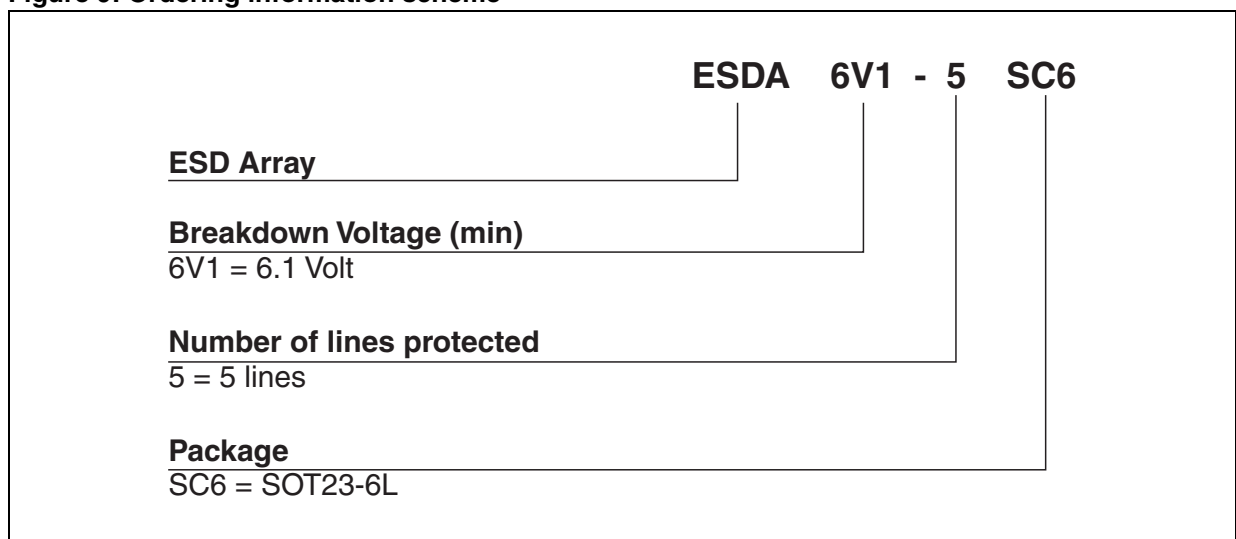


Figure 10: SOT23-6L Package Mechanical Data

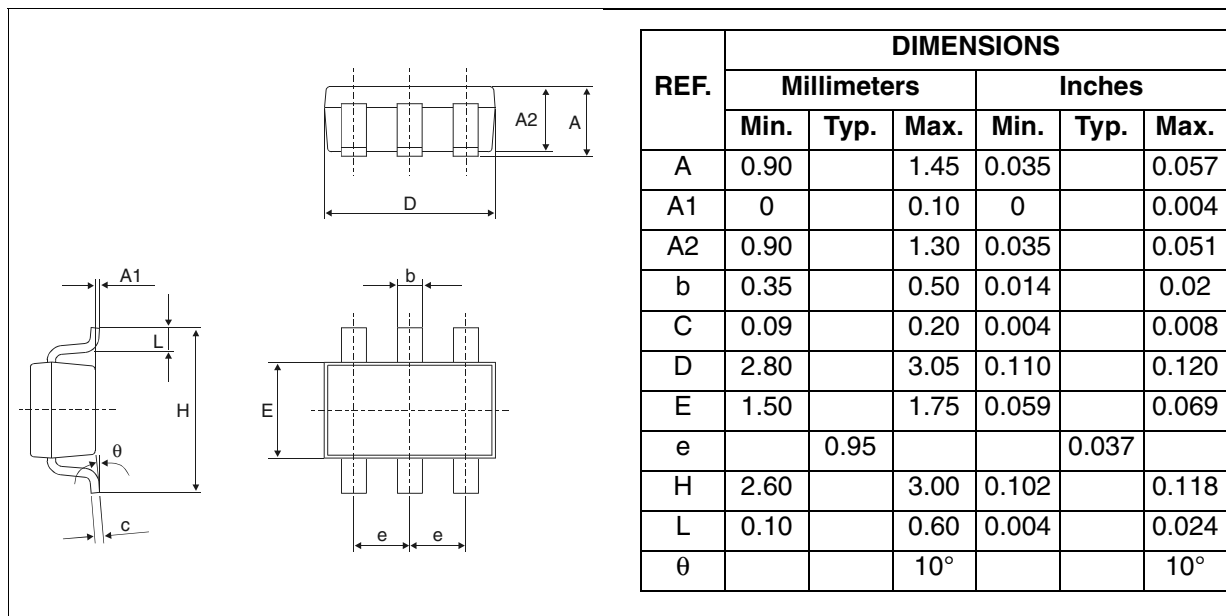


Figure 11: Foot Print Dimensions (in millimeters)

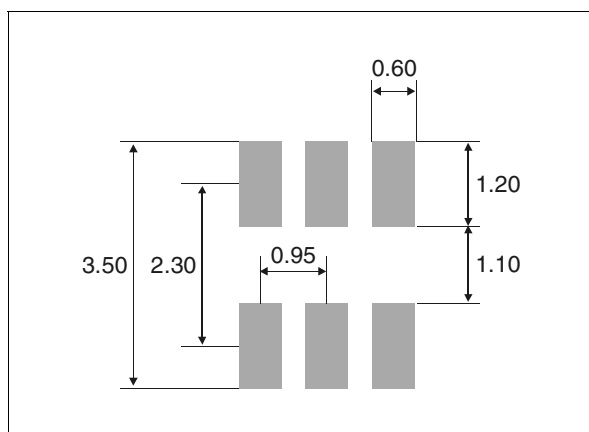


Table 4: Ordering Information

Part Number	Marking	Package	Weight	Base qty	Delivery mode
ESDA6V1-5SC6	EC62	SOT23-6L	16.7 mg	3000	Tape & reel

Table 5: Revision History

Date	Revision	Description of Changes
Feb-2002	2B	Last update.
4-Nov-2004	3	SOT23-6L package dimensions change for reference “D” from 3.0 millimeters (0.118 inches) to 3.05 millimeters (0.120 inches).

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