



ESDA17/19-5SC6

ASD™

TRANSIL™ ARRAY FOR ESD PROTECTION

MAIN APPLICATIONS

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

- Computers
- Printers and other peripherals
- Communications systems
- Cellular phone handsets and accessories
- Other telephone sets
- Consumer Electronics (Set top boxes, DVD players, TV sets)

FEATURES

- 5 unidirectional Transil functions
- Minimum breakdown voltage range:
 V_{BR} min. = 17V or 19V
- Peak pulse power (8/20 μ s); 150W
- Tiny leakage current at stand-off voltage:
< 100nA

DESCRIPTION

The ESDA17/19-5SC6 is a monolithic array designed to protect up to 5 lines against ESD transients.

The device is ideal for applications where board space savind is required.

BENEFITS

- High ESD protection level
- High integration
- Suitable for high density boards

COMPLIES WITH THE FOLLOWING STANDARDS:

- IEC61000-4-2 level 4:
 - 15kV (air discharge)
 - 8kV (contact discharge)
- MIL STD 883E-Method 3015-7: class3
 - 25kV (Human Body Model)

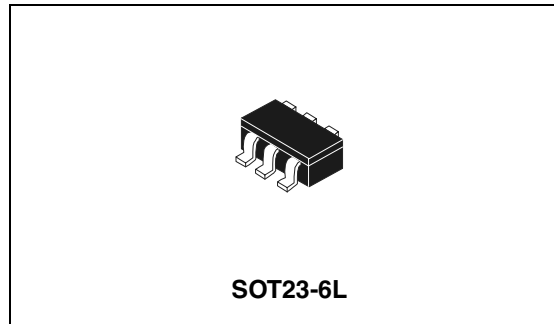
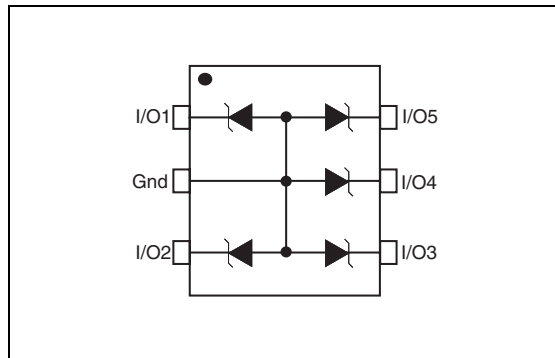


Table 1: Order Codes

Part Number	Marking
ESDA17-5SC6	175
ESDA19-5SC6	195

Figure 1: Functional Diagram



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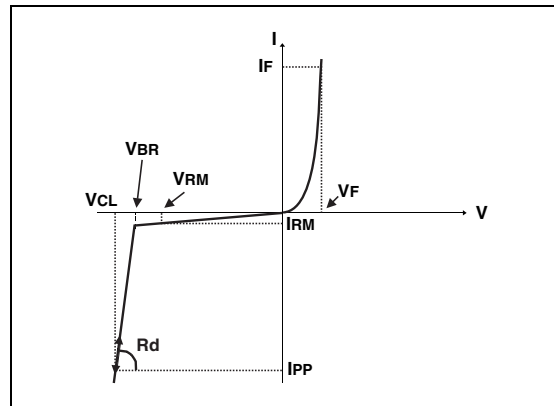
Table 2: Absolute Maximum Ratings ($T_{amb} = 25^{\circ}\text{C}$)

Symbol	Parameter		Value	Unit
V_{PP}	ESD discharge	IEC61000-4-2 air discharge IEC61000-4-2 contact discharge	± 15 ± 8	kV
P_{PP}	Peak pulse power (8/20 μs) (note 1)	T_j initial = T_{amb}	150	W
T_j	Junction temperature		125	$^{\circ}\text{C}$
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		-40 to +125	$^{\circ}\text{C}$

Note 1: For a surge greater than the maximum values, the diode will fail in short-circuit.

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



Types	V_{BR} @		I_R	I_{RM} @ V_{RM}		R_d	αT	C	V_F @ I_F	
	min.	max.		max.					max.	
	V	V	mA	nA	V	Ω	$10^{-4}/^{\circ}\text{C}$	pF	V	mA
ESDA17-5SC6	17	19	1	75	14	1	10	33	1.2	10
ESDA19-5SC6	19	21	1	100	15	1	8.5	33	1.2	10

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 2: Relative variation of peak pulse power versus initial junction temperature

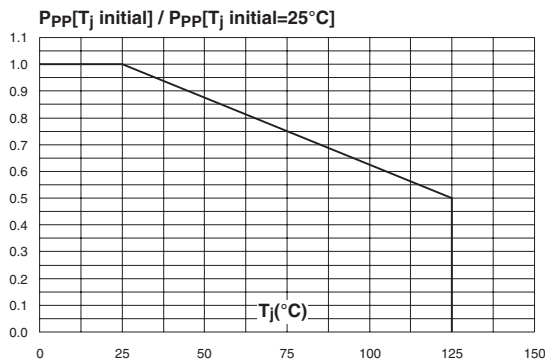


Figure 3: Peak pulse power versus exponential pulse duration

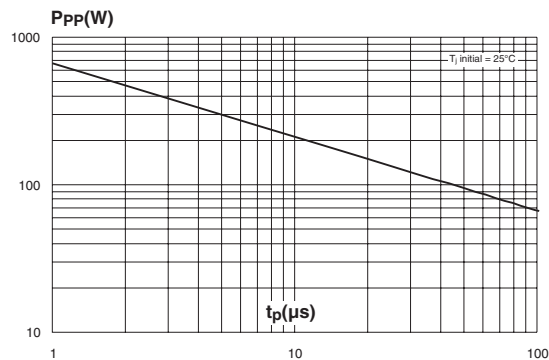


Figure 4: Clamping voltage versus peak pulse current (typical values, rectangular waveform)

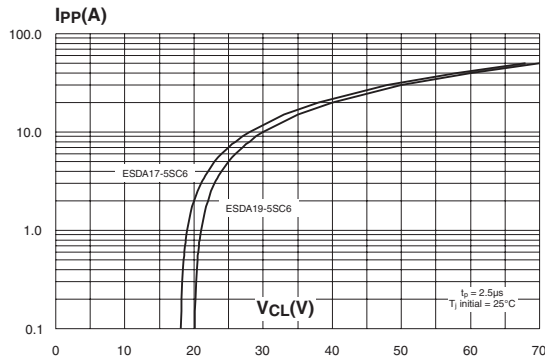


Figure 5: Forward voltage drop versus peak forward current (typical values)

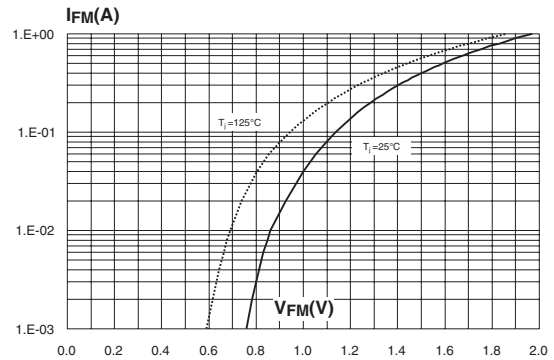


Figure 6: Junction capacitance versus reverse voltage applied (typical values)

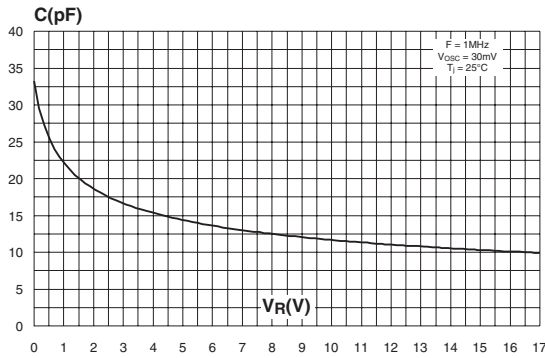


Figure 7: Relative variation of leakage current versus junction temperature (typical values)

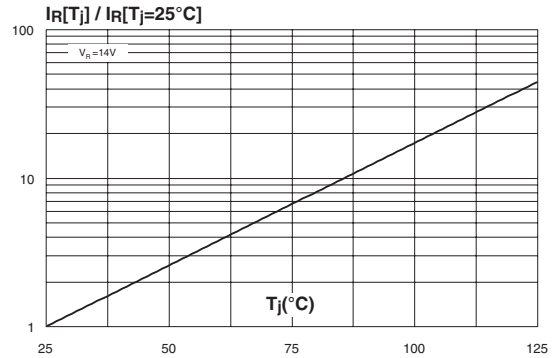


Figure 8: Ordering information scheme

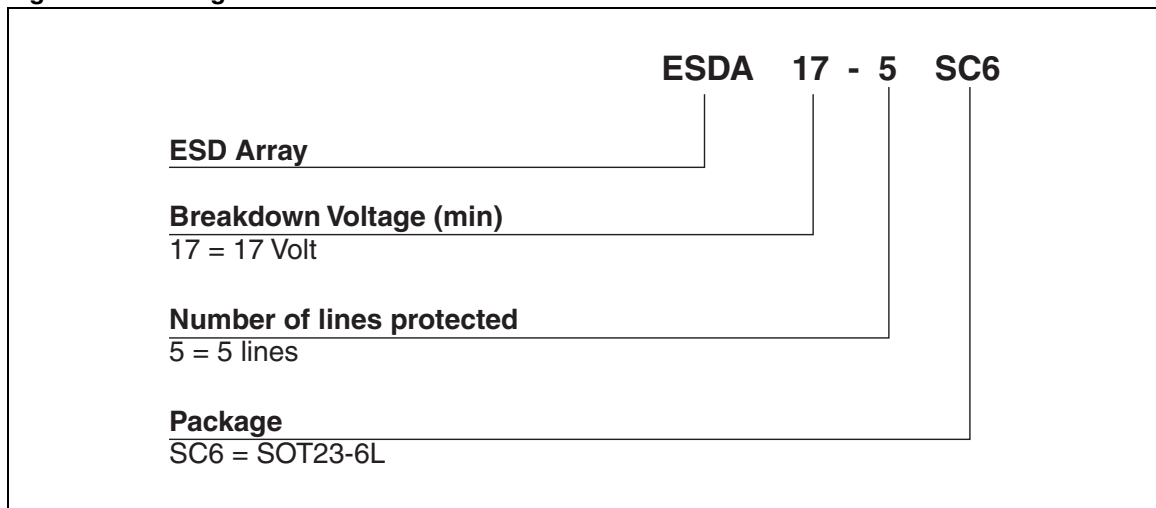


Figure 9: SOT23-6L Package Mechanical Data

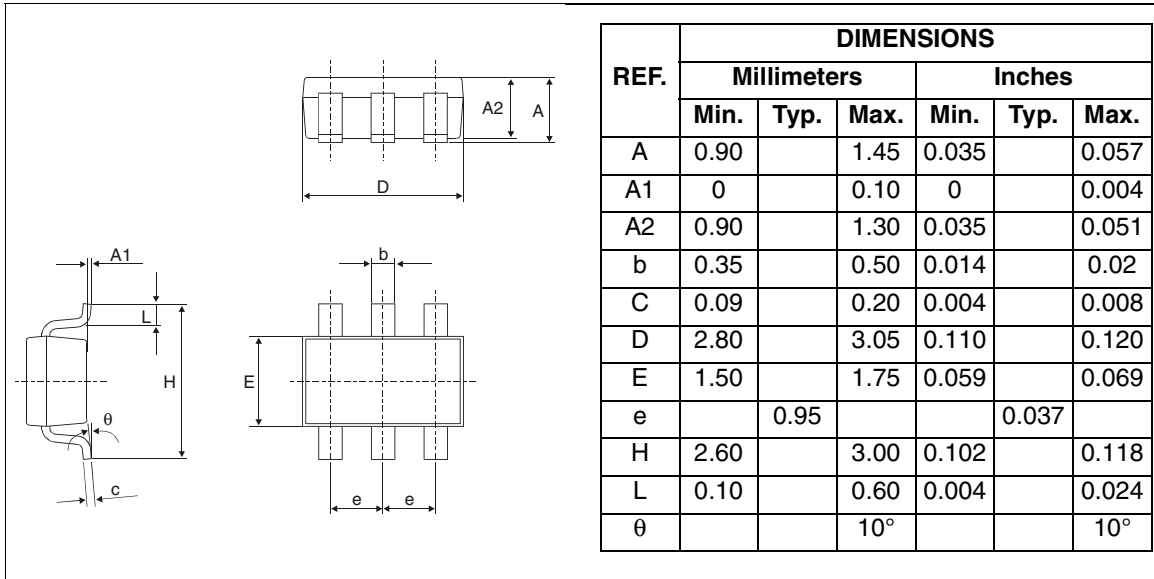


Figure 10: Foot Print Dimensions (in millimeters)

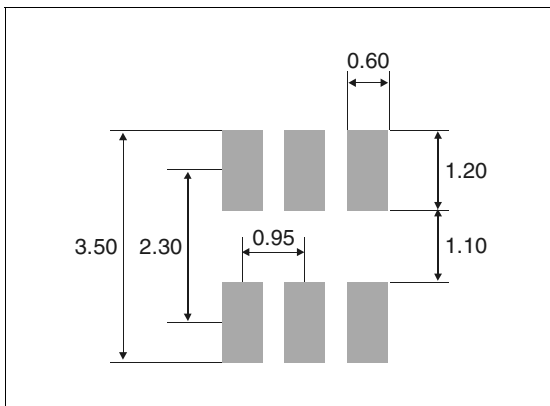


Table 4: Ordering Information

Part Number	Marking	Package	Weight	Base qty	Delivery mode
ESDA17-5SC6	175	SOT23-6L	16.7 mg	3000	Tape & reel
ESDA19-5SC6	195				

Table 5: Revision History

Date	Revision	Description of Changes
Nov-2002	1A	First issue.
4-Nov-2004	2	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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