



Application Specific Discretes  
A.S.D.™

## ESDA17/19-5SC6

### TRANSIL™ ARRAY FOR ESD PROTECTION

#### 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)

#### 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 saving is required.

#### FEATURES

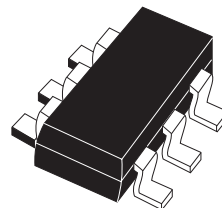
- 5 Unidirectional transil™ functions
- Minimum breakdown voltage range  $V_{BRmin} = 17V$  or  $19V$
- Peak **pulse** power (8/20 $\mu s$ ); 150W
- Tiny leakage current at stand-off voltage: < 100nA

#### BENEFITS

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

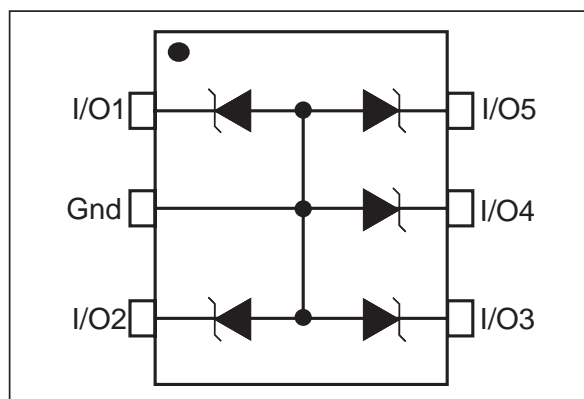
#### COMPLIES WITH THE FOLLOWING STANDARDS:

- IEC61000-4-2: 15 kV (air discharge)  
8 kV (contact discharge)
- MIL STD 883E-Method 3015-7: class3  
25kV (human body model)



SOT23-6L  
ESDAxx-5SC6

#### FUNCTIONAL DIAGRAM SOT23-6L



## ESDA17/19-5SC6

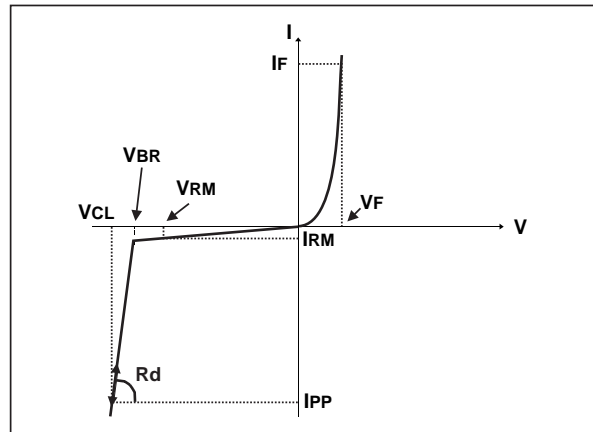
### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ )

Symbol	Test conditions		Value	Unit
$V_{PP}$	ESD discharge - IEC61000-4-2 air discharge IEC61000-4-2 contact discharge		$\pm 15$ $\pm 8$	kV
$P_{PP}$	Peak pulse power dissipation (8/20 $\mu\text{s}$ ) Note 1	$T_j \text{ initial} = T_{amb}$	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 10s 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.

### 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 @ $V_{RM}$
$I_{PP}$	Peak pulse current
$\alpha T$	Voltage temperature coefficient
$V_F$	Forward voltage drop

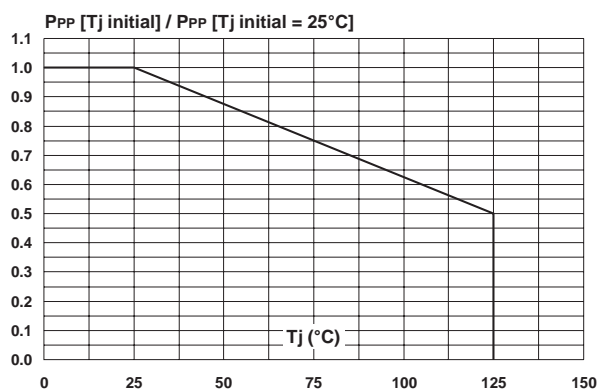


Type	$V_{BR} @ I_R$			$I_{RM} @ V_{RM}$		$R_d$	$\alpha T$	$C$	$V_F @ I_F$	
	min.	max.					max.	typ.	max.	
	V	V	mA	nA	V	$\Omega$	$10^{-4}/^{\circ}\text{C}$	pF	V	mA
ESDA17-5SC6	17	19	1	75	14	1	10	33	1.2	10
ESDA19-5SC6	19	21	1	100	15	1	8.5	33	1.2	10

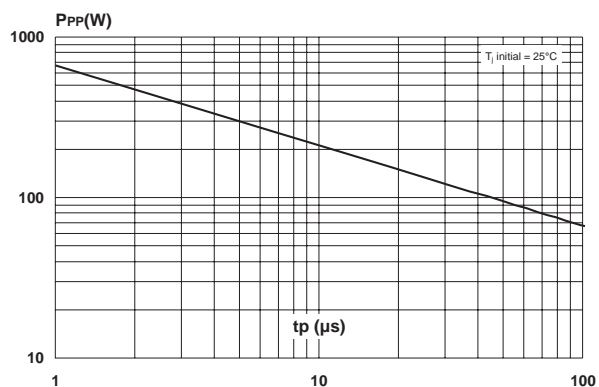
**Note 1 :** Square pulse,  $I_{pp} = 15\text{A}$ ,  $t_p = 2.5\mu\text{s}$ .

**Note 2:**  $\Delta V_{BR} = \alpha T * (T_{amb} - 25^{\circ}\text{C}) * V_{BR}(25^{\circ}\text{C})$

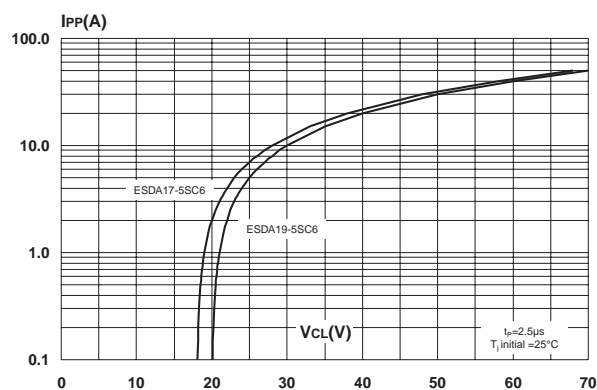
**Fig. 1:** Relative variation of peak pulse power versus initial junction temperature.



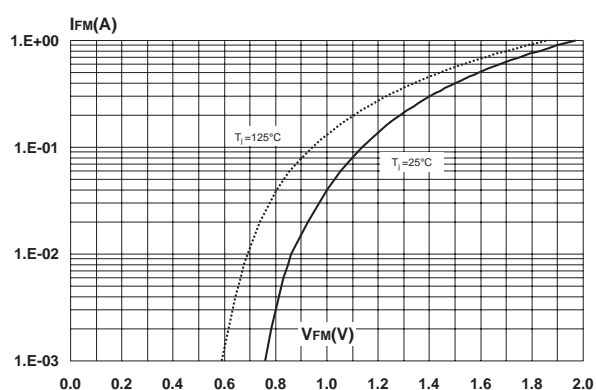
**Fig. 2:** Peak pulse power versus exponential pulse duration.



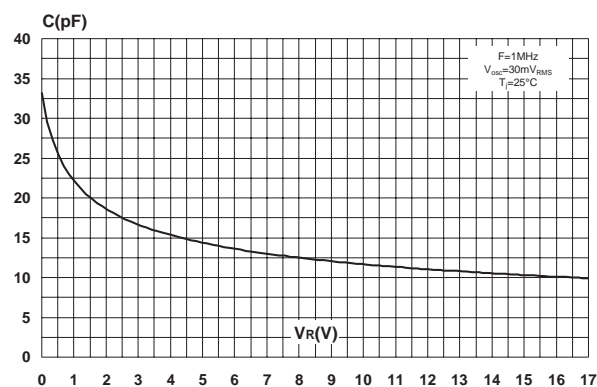
**Fig. 3:** Clamping voltage versus peak pulse current (typical values, rectangular waveform).



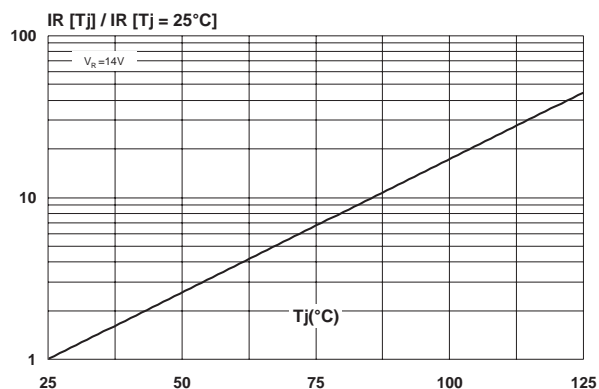
**Fig. 4:** Forward voltage drop versus peak forward current (typical values).



**Fig. 5:** Junction capacitance versus reverse voltage applied (typical values).

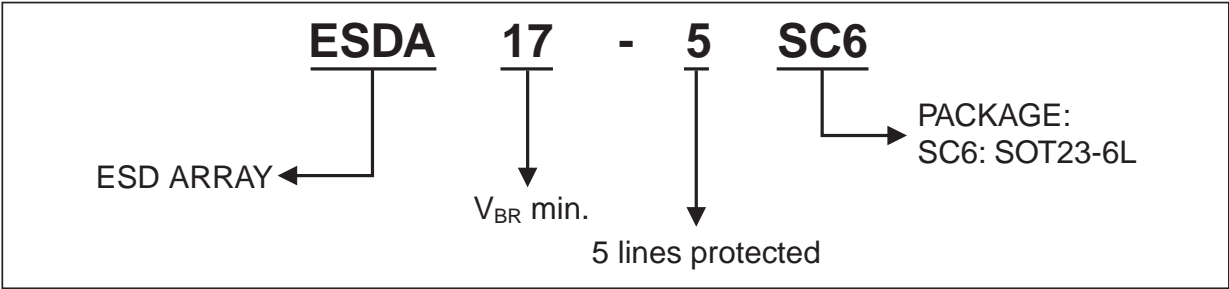


**Fig. 6:** Relative variation of leakage current versus junction temperature (typical values).



**ESDA17/19-5SC6**

**ORDER CODE**

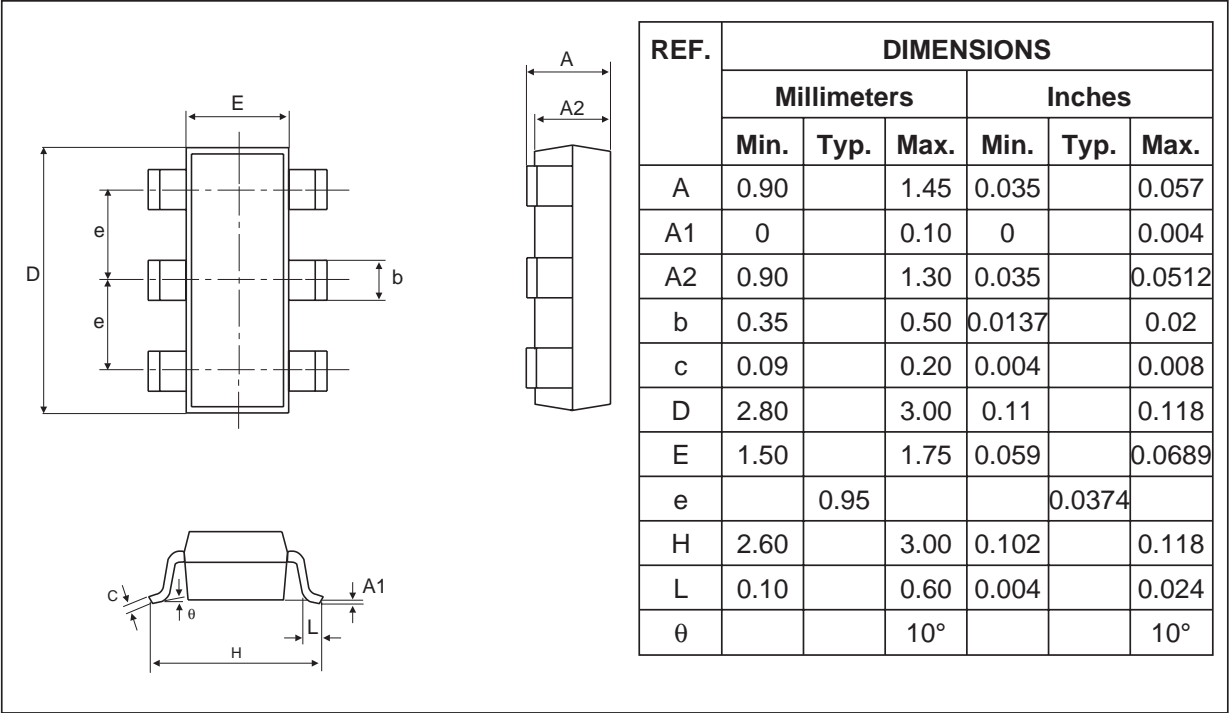


**OTHER INFORMATION**

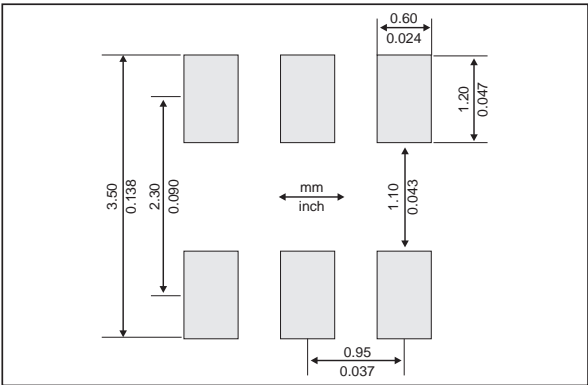
Type	Marking	Package	Weight	Base Qty	Delivery mode
ESDA17-5SC6	175	SOT23-6L	16.7mg	3000	Tape & Reel
ESDA19-5SC6	195	SOT23-6L	16.7mg	3000	Tape & Reel

- Epoxy meets UL94, V0

PACKAGE MECHANICAL DATA  
SOT23-6L



FOOTPRINT



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