



Application Specific Discretes  
A.S.D.<sup>™</sup>

## ESDA17/19-5SC6 TRANSIL<sup>™</sup> 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 savind is required.

### FEATURES

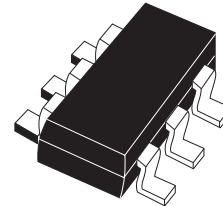
- 5 Unidirectional transil<sup>™</sup> functions
- Minimum breakdown voltage range  $V_{BRmin} = 17V$  or 19V
- Peak pulse power (8/20 $\mu$ s); 150W
- Tiny leakage current at stand-off voltage: < 100nA

### BENEFITS

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

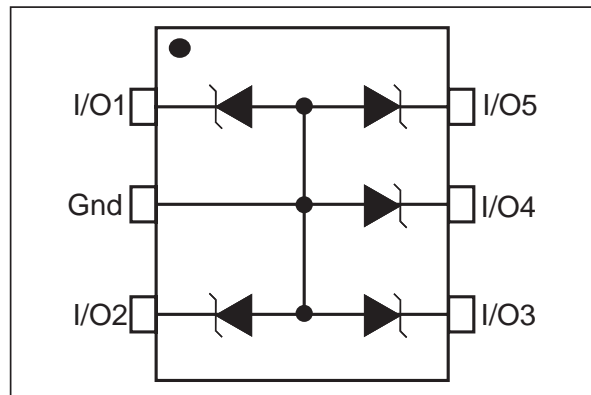
### COMPLIES WITH THE FOLLOWING STANDARDS:

- 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

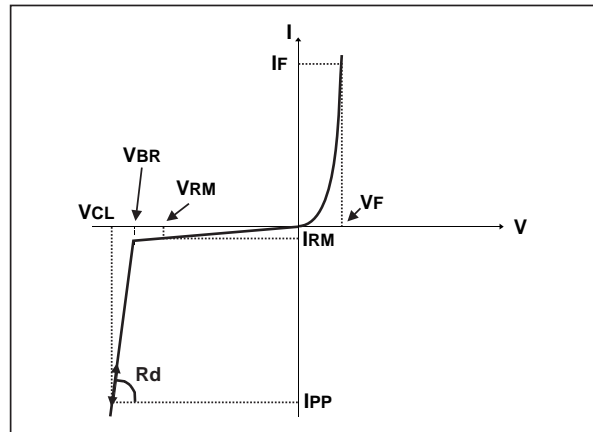
### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ )

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	$T_j$ initial = $T_{amb}$	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

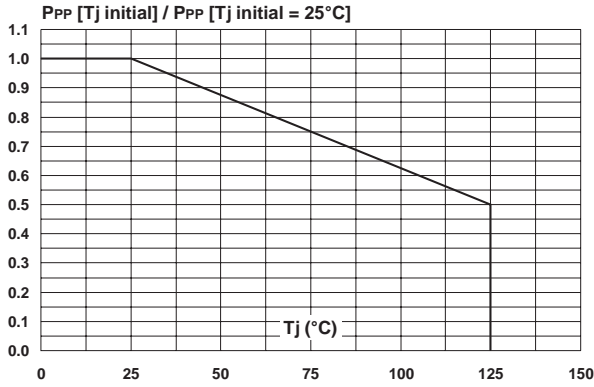


Type	$V_{BR}$ @ $I_R$		$I_{RM}$ @ $V_{RM}$	$R_d$	$\alpha T$	$C$	$V_F$ @ $I_F$			
	min.	max.					max.	max.		
	V	V	mA	nA	V	$\Omega$	$10^{-4}/^{\circ}\text{C}$	pF	V	mA
ESDA17-5SC6	17	19	1	75	14	1	10	33	1.2	10
ESDA19-5SC6	19	21	1	100	15	1	8.5	33	1.2	10

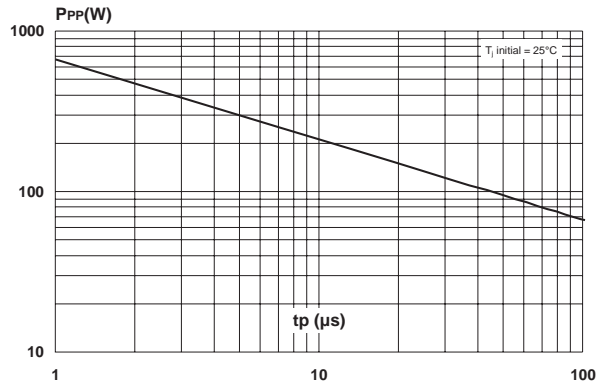
**Note 1:** Square pulse,  $I_{pp} = 15\text{A}$ ,  $t_p = 2.5\mu\text{s}$ .

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

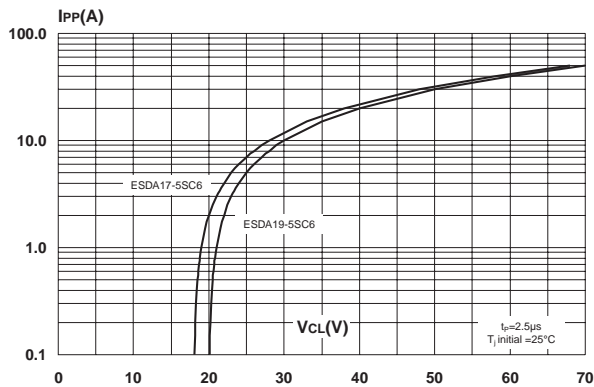
**Fig. 1:** Relative variation of peak pulse power versus initial junction temperature.



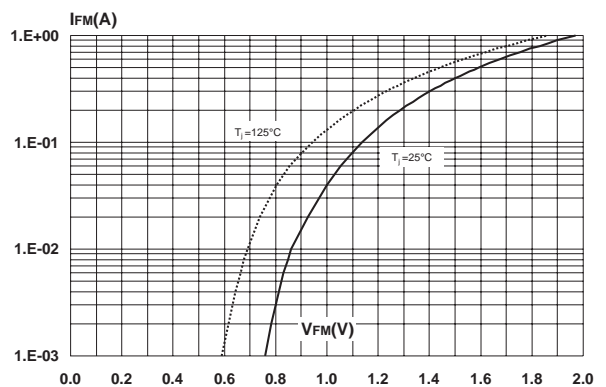
**Fig. 2:** Peak pulse power versus exponential pulse duration.



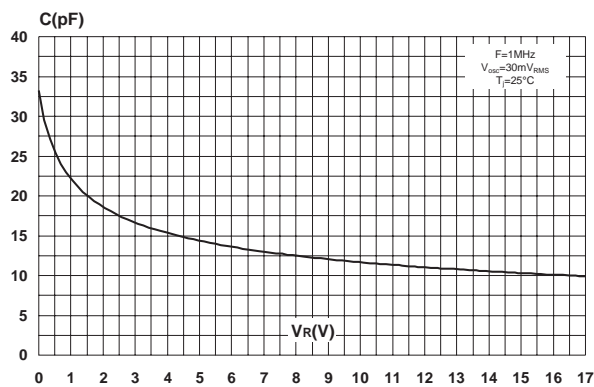
**Fig. 3:** Clamping voltage versus peak pulse current (typical values, rectangular waveform).



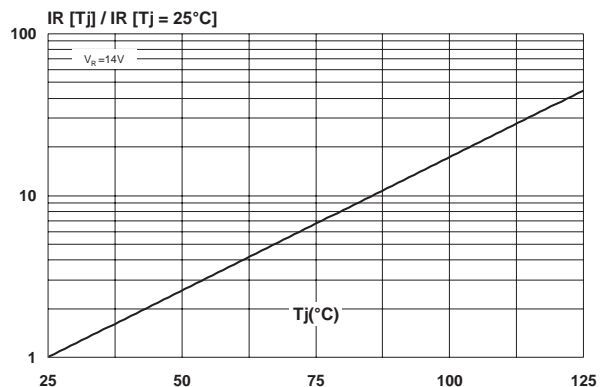
**Fig. 4:** Forward voltage drop versus peak forward current (typical values).



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

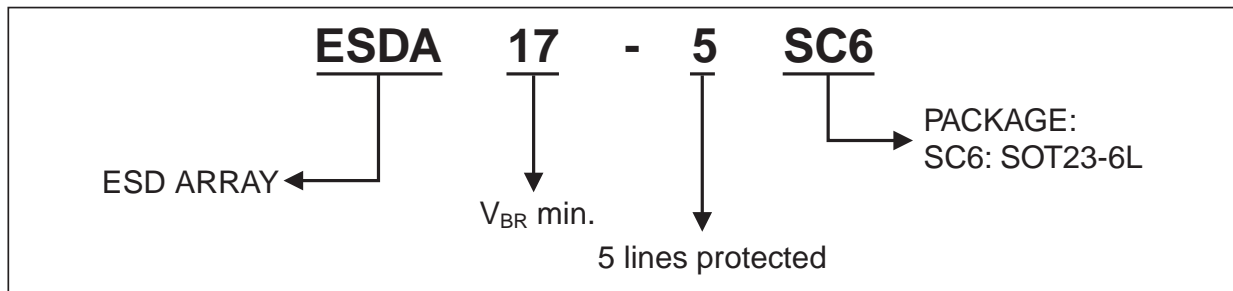


**Fig. 6:** Relative variation of leakage current versus junction temperature (typical values).



## ESDA17/19-5SC6

### ORDER CODE

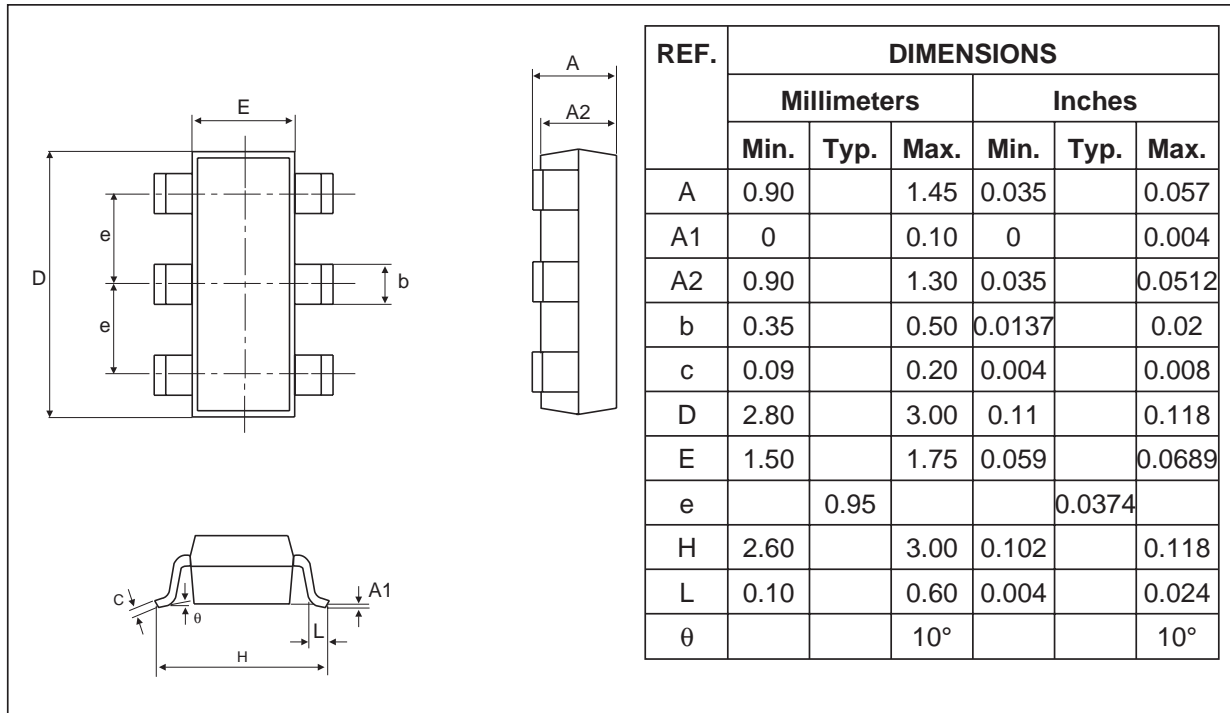


### OTHER INFORMATIONS

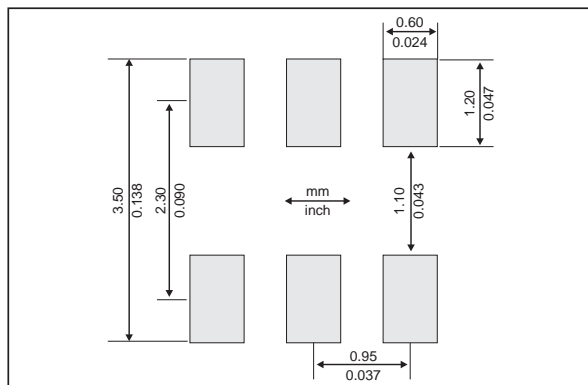
Type	Marking	Package	Weight	Base Qty	Delivery mode
ESDA17-5SC6	175	SOT23-6L	16.7mg	3000	Tape & Reel
ESDA19-5SC6	195	SOT23-6L	16.7mg	3000	Tape & Reel

- Epoxy meets UL94, V0

**PACKAGE MECHANICAL DATA**  
SOT23-6L



**FOOTPRINT**



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>

