

## Dual Transient Voltage Suppressors Array for ESD Protection

### General Description

The SLSOT Series is a dual monolithic voltage suppressor designed to protect components which are connected to data and transmission lines against ESD. It clamps the voltage just above the logic level supply for positive transients and to a diode drop below ground for negative transients. It can also work as bidirectional suppressor by connecting only pin1 and 2.

### Applications

- Computers
- Printers
- Communication systems

### Features

- 2 Unidirectional Transil functions
- Low leakage current:  $I_R \max < 20 \mu A$  at  $V_{RM}$
- 300W peak pulse power(8/20 $\mu s$ )
- Transient protection for data lines as per

### Complies with the following standards

**IEC61000-4-2**

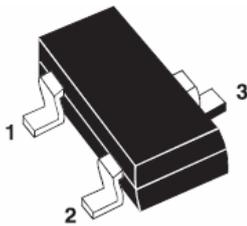
**Level 4 15 kV (air discharge)**

**8 kV(contact discharge)**

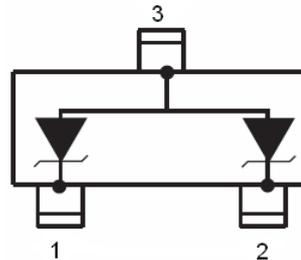
**MIL STD 883E - Method 3015-7 Class 3**

**25 kV HBM (Human Body Model)**

### Functional diagram



SOT-23

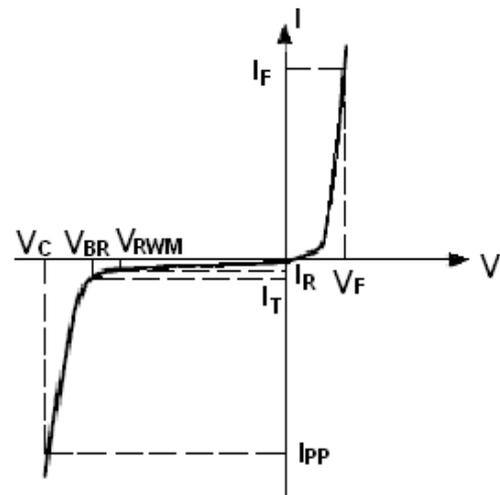


### Absolute Ratings ( $T_{amb}=25^{\circ}C$ )

Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power ( $t_p = 8/20\mu s$ )	350	W
$T_L$	Maximum lead temperature for soldering during 10s	260	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-55 to +155	$^{\circ}C$
$T_{op}$	Operating Temperature Range	-40 to +125	$^{\circ}C$
$T_j$	Maximum junction temperature	150	$^{\circ}C$
$V_{PP}$	Electrostatic discharge		
	IEC61000-4-2 air discharge	15	kV
	IEC61000-4-2 contact discharge	8	

**Electrical Parameter**

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$

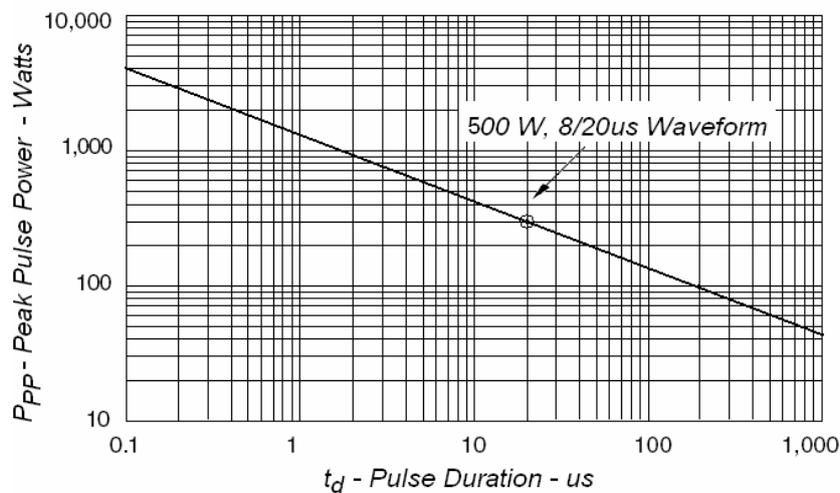


**Electrical Characteristics**

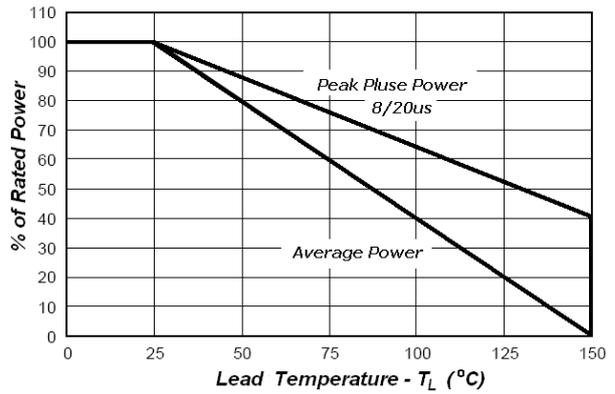
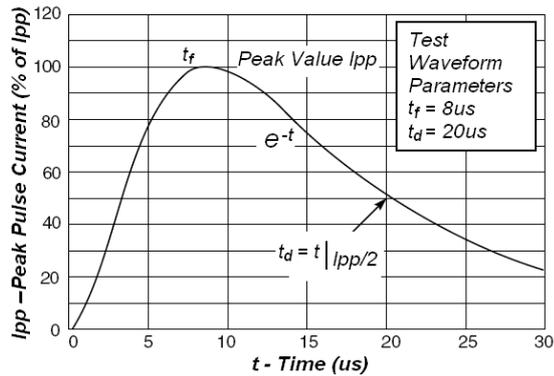
Part Numbers	$V_{BR}$			$I_T$	$V_{RWM}$	$I_R$	C
	Min.	Typ.	Max.				
	V	V	V				mA
SLSOT04C	5.0	5.6	6.2	1	4.0	1	30
SLSOT05C	6.0	6.7	7.4	1	5.0	1	30
SLSOT12C	13.3	14.0	14.7	1	12.0	1	25
SLSOT15C	16.7	17.4	18.1	1	15.0	1	25
SLSOT24C	26.7	28.2	29.6	1	24.0	1	20

1).8/20 waveform used. (see fig2.)

**Typical Characteristics**



**Fig1. Peak Pulse Power VS Pulse Time**

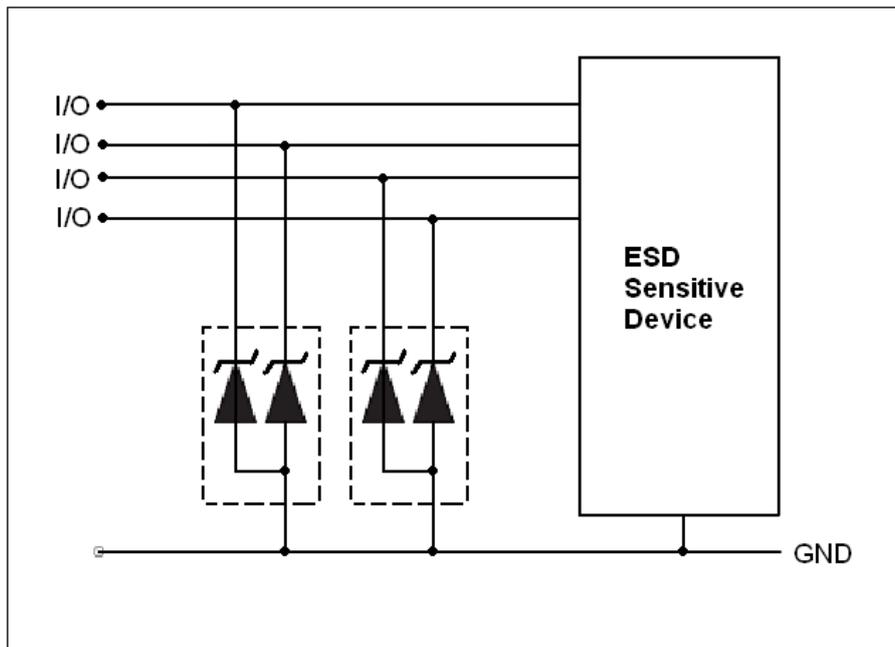


**Application Note**

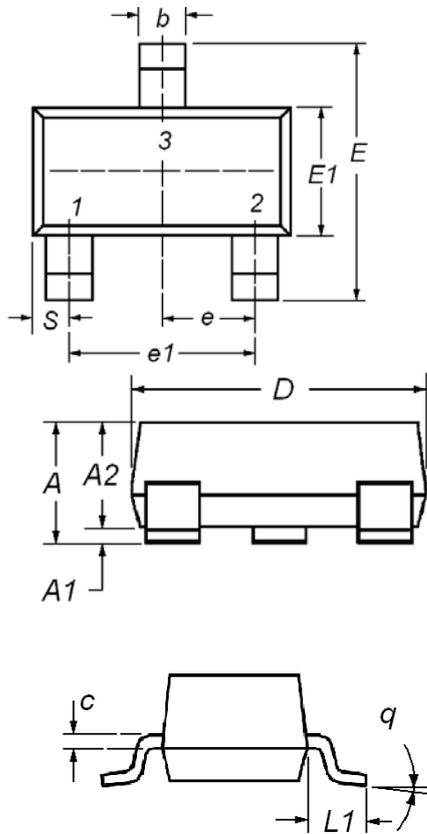
Electrostatic discharge (ESD) is a major cause of failure in electronic systems. Transient Voltage Suppressors (TVS) are an ideal choice for ESD protection. They are capable of clamping the incoming transient to a low enough level such that damage to the protected semiconductor is prevented.

Surface mount TVS arrays offer the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal line to ground. As the transient rises above the operating voltage of the device, the TVS array becomes a low impedance path diverting the transient current to ground.

The tiny SOT-23 package allows design flexibility in the design of high density boards where the space saving is at a premium. This enables to shorten the routing and contributes to hardening against ESD.



**SOT-23 mechanical data**



Dim	Millimeters		
	Min	TYP	Max
A	1.00	1.20	1.40
A1	0	0.05	0.10
A2	1.00	1.15	1.30
b	0.35	0.40	0.50
c	0.10	0.15	0.20
D	2.70	2.90	3.10
E	2.40	2.60	2.80
E1	1.40	1.50	1.60
e	0.85	1.00	1.15
e1	1.80	1.90	2.00
L1	0.40	.	
q	0°	5°	10°
S	0.45	0.50	0.55