

## DESCRIPTION

The SESR05 is a low capacitance steering diode TVS array, designed to protect two I/O lines from the effects of Electrostatic Discharge (ESD) and Electrical Fast Transients (EFT). The SESR05 exceeds Level 4 IEC 61000-4-2, with a peak pulse power rating of 125 Watts for an 8/20 $\mu$ s waveshape.

The low capacitance of the steering diode allows the designer to protect high speed data applications. The small SOT-143 package, with four leads reduces the internal lead inductance for low overshoot voltage during fast front time transient events, such as ESD and EFT. The SESR05 meet the IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements

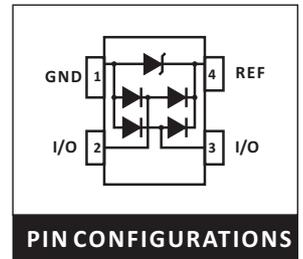


## FEATURES

- >125 Watts peak pulse power per Line(tp=8/20 $\mu$ S)
- >Protects two I/O lines
- >Low clamping voltage
- >Low leakage current
- >Solid-state silicon avalanche technology

## APPLICATIONS

- >USB Power & Data Line Protection
- >Ethernet 10BaseT
- >I<sup>2</sup>C Bus Protection
- >Video Line Protection
- >T1/E1 secondary IC Side Protection
- >Microcontroller Input Protection
- >ISDN S/T Interface
- >WAN/LAN Equipment



## IEC COMPATIBILITY

- >IEC61000-4-2 (ESD)  $\pm$ 15kV (air),  $\pm$ 8kV (contact)
- >IEC61000-4-4 (EFT) 40A (5/50ns)
- >IEC61000-4-5 (Lightning) 5A (8/20 $\mu$ s)

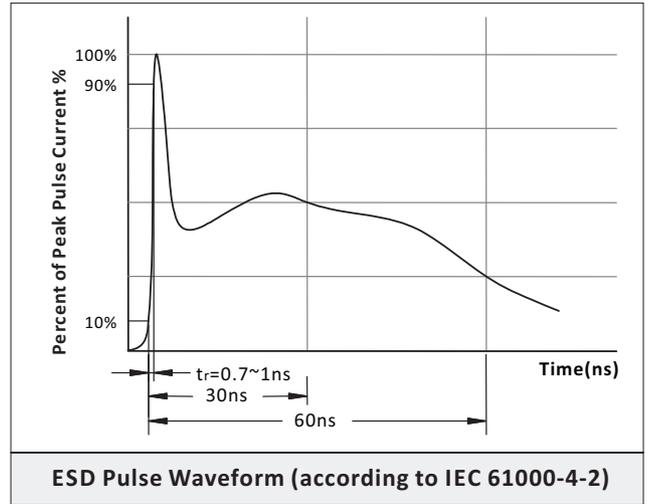
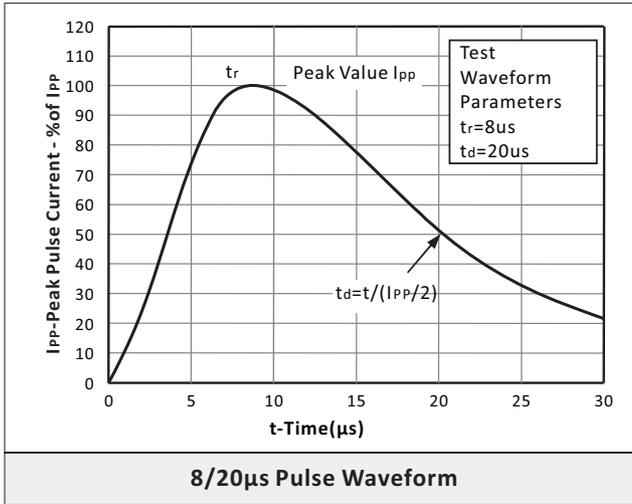
## TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C UNLESS OTHERWISE SPECIFIED			
PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power (tp=8/20 $\mu$ s waveform)	P <sub>PP</sub>	125	Watts
Operating Temperature Range	T <sub>J</sub>	-55~125	°C
Storage Temperature Range	T <sub>STG</sub>	-55~150	°C

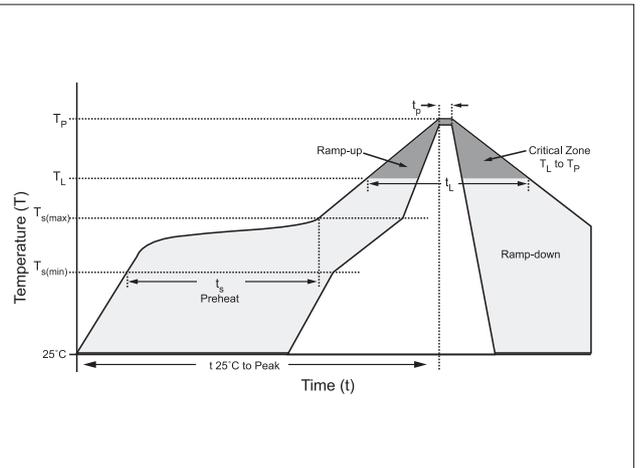
## ELECTRICAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C UNLESS OTHERWISE SPECIFIED										
PART NUMBER	DEVICE MARKING	V <sub>RWM</sub> (V) Max.	V <sub>B</sub> (V) Min.	I <sub>T</sub> (mA)	V <sub>c</sub> @1A Max.	V <sub>c</sub>		I <sub>R</sub> ( $\mu$ A) Max.	C <sub>T(I/O-I/O)</sub> (pF) Typ.	C <sub>T(I/O-GND)</sub> (pF) Typ.
						Max.	@A			
SESR05	R05	5.0	6.0	1	15.5	25.0	5	1	1.0	2.0



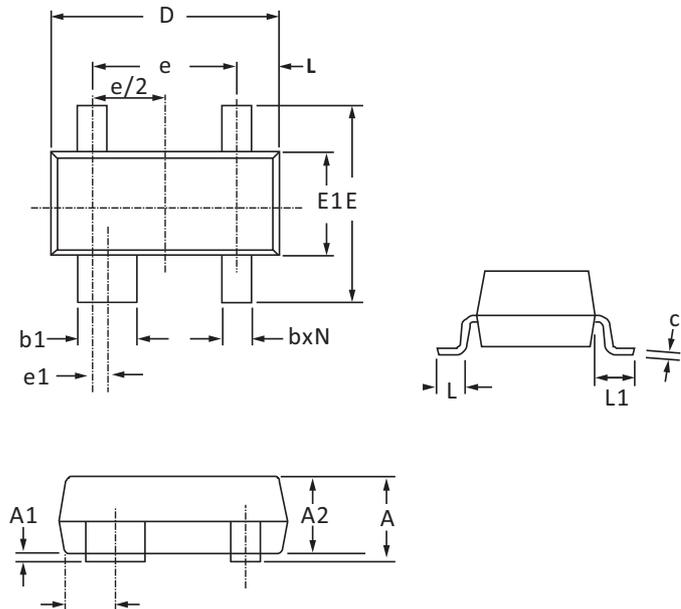
**CHARACTERISTIC CURVES**

**REFLOW PROFILE**

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts)	60 – 180 secs
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/second max
Ts(max)to TL - Ramp-up Rate		3°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Time (min to max) (tL)	60 – 150 seconds
Peak Temperature (TP)		260°C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Do not exceed		260°C

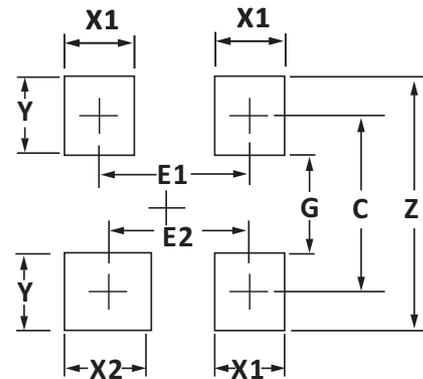


**SOT-143 PACKAGE INFORMATION**

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	1.22	0.031	0.048
A1	0.013	0.15	0.000	0.008
A2	0.75	1.07	0.029	0.042
b	0.30	0.51	0.011	0.020
b1	0.76	0.94	0.029	0.037
c	0.06	0.20	0.002	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.082	0.104
E1	1.20	1.40	0.047	0.055
e	1.92BSC		0.075	
e1	0.20BSC		0.008	
L	0.40	0.60	0.015	0.024
L1	(0.54)		(0.021)	
N	4		4	


**RECOMMENDED PAD LAYOUT DIMENSION**

PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
C	(2.2)	(0.087)
E1	1.92	0.076
E2	1.72	0.068
G	0.80	0.031
X1	1.00	0.039
X2	1.20	0.047
Y	1.40	0.055
Z	3.60	0.141


**ORDERING INFORMATION**

Part Number	Component Package	QTY/Reel	Reel Size
SESRO5	SOT-143	3000PCS	7"



## CONTACT US

### Headquarters

No.3387 Shendu Road Pujiang I&E Park Minhang Shanghai  
China

### Hotline

400-021-5756

### Web

[Http://www.semiware.com.cn](http://www.semiware.com.cn)

### By Telephone

General: 86-21-3463-7172

Sales: 86-21-3463-7345

Technical Support: 86-21-34637172-8811

### By Fax

General: 86-21-3965-0654

Sales: 86-21-3463-7458

### By Email

General: [china@semiware.com.cn](mailto:china@semiware.com.cn)

Sales: [sales33@semiware.com.cn](mailto:sales33@semiware.com.cn)

Technical Support: [fae03@semiware.com.cn](mailto:fae03@semiware.com.cn)

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