



# SPE0571

## Single-Line ESD Protection Array

### DESCRIPTION

The SPE0571 are designed by TVS device that is to protect sensitive electronics from damage or latch-up due to ESD. They are designed for use in applications where board space is at a premium. SPE0571 will protect single line, and may be used on line where the signal polarities swing above and below ground.

SPE0571 offer desirable characteristics for board level protection including fast response time, low operating and clamping voltage, and no device degradation.

SPE0571 may be used to meet the immunity requirements of IEC 61000-4-2, level 4. The small SOD-723 package makes them ideal for use in portable electronics such as cell phones, PDA's, notebook computers, and digital cameras.

### APPLICATIONS

- ◆ Cellular Handsets and Accessories
- ◆ Cordless Phone
- ◆ PDA
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ MP3 Player

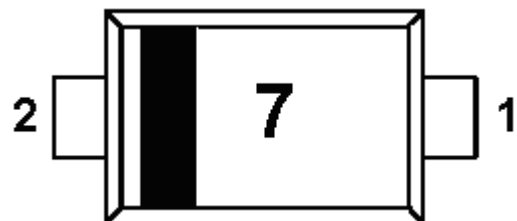
### FEATURES

- ◆ Transient protection for data lines to IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)  
IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆ Protects single I/O lines
- ◆ Working voltage: 5V
- ◆ Low leakage current
- ◆ Low operating and clamping voltages

### PIN CONFIGURATION ( SOD-723 )



### PART MARKING





# SPE0571

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### ORDERING INFORMATION

Part Number	Package	Part Marking
SPE0571D72RG	SOD-723	7

※ SPE0571D72RG : Tape Reel ; Pb – Free

### ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Peak Pulse Power ( tp = 8/20 μs )	Ppk	250	W
Maximum Peak Pulse Current ( tp = 8/20 μs )	Ipp	7	A
ESD per IEC 61000 – 4 – 2 (Air )	Vpp	±15	KV
ESD per IEC 61000 – 4 – 2 (Contact )	Vpp	±8	KV
Operating Junction Temperature	Tj	-55 ~ 125	°C
Storage Temperature Range	TSTG	-55 ~ 150	°C
Lead Soldering Temperature	TL	260 ( 10sec )	°C

### ELECTRICAL CHARACTERISTICS

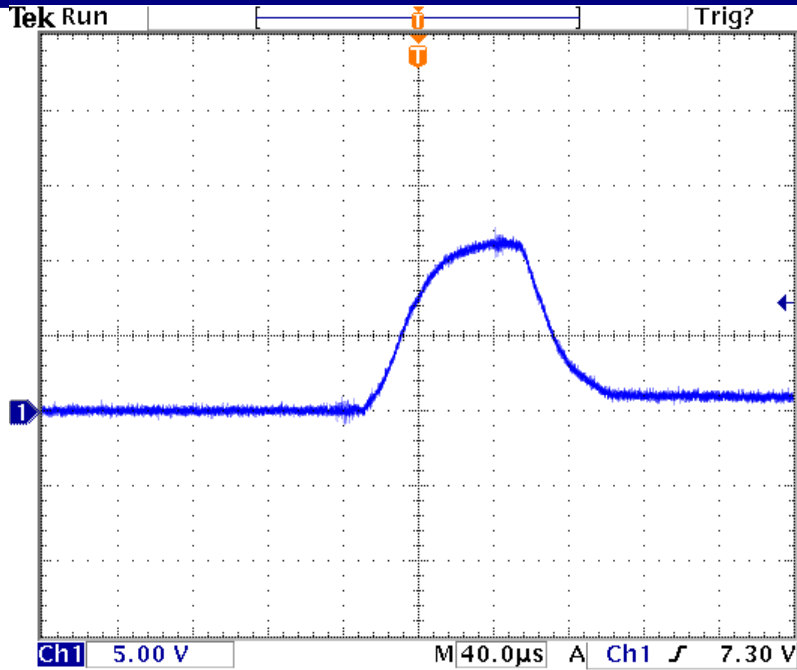
(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Reverse Stand – Off Voltage	VRWM				5	V
Reverse Breakdown Voltage	VBR	It = 1mA	6			V
Reverse Leakage Current	IR	VRWM = 5V , T=25°C		0.01	1	μA
Clamping Voltage	Vc	Ipp = 1A , tp = 8/20 μs			11.5	V
Clamping Voltage	Vc	Ipp = 7A , tp = 8/20 μs			15	V
Junction Capacitance	Cj	Between I/O Pin and GND VR = 0V , f = 1MHz		10	20	pF

### TYPICAL CHARACTERISTICS



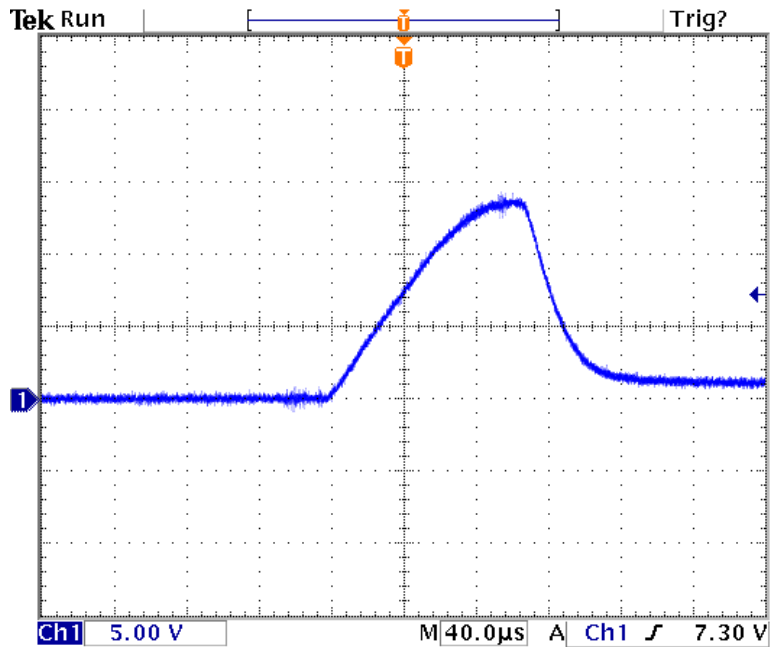
# SPE0571 Single-Line ESD Protection Array



26 Oct 2005  
12:15:46

-40.0000ns

Clamping Voltage ( $I_{pp} = 1A$ ,  $t_p = 8/20 \mu s$ )



26 Oct 2005  
12:08:20

-40.0000ns

Clamping Voltage ( $I_{pp} = 7A$ ,  $t_p = 8/20 \mu s$ )

## TYPICAL CHARACTERISTICS



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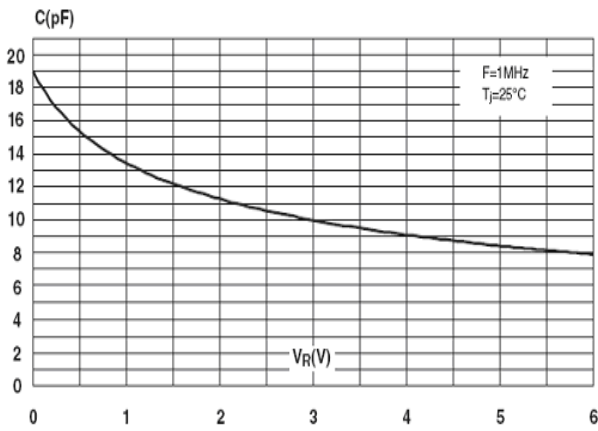


Fig 1 : Junction Capacitance V.S Reverse Voltage Applied

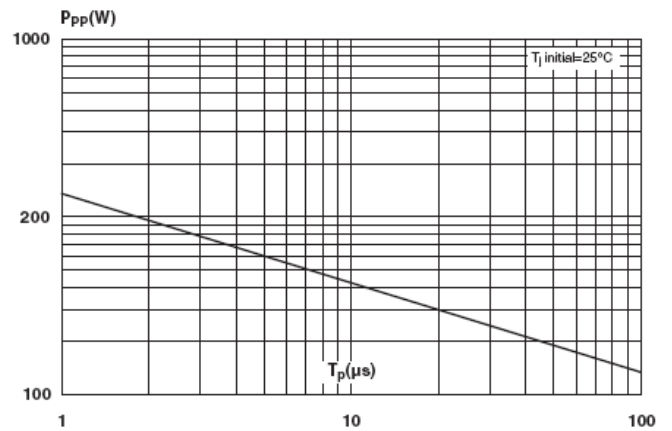


Fig 2 : Peak Plus Power V.S Exponential Plus Duration

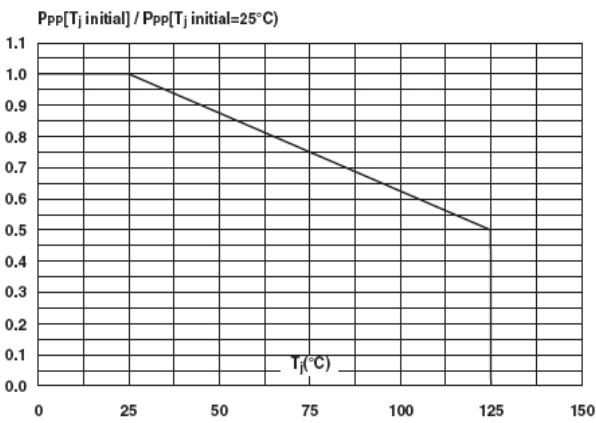


Fig 3 : Relative Variation of Peak Plus Power V.S Initial Junction Temperature

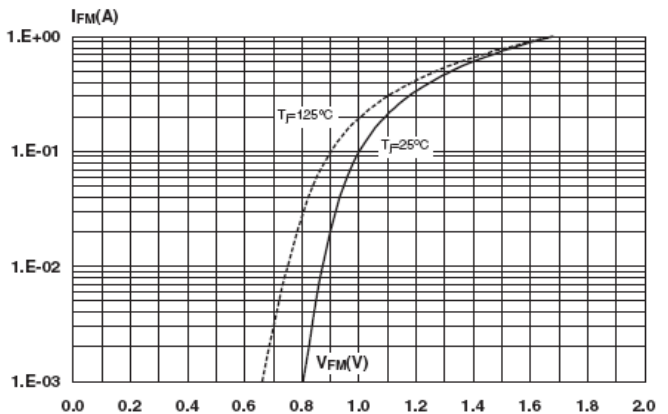


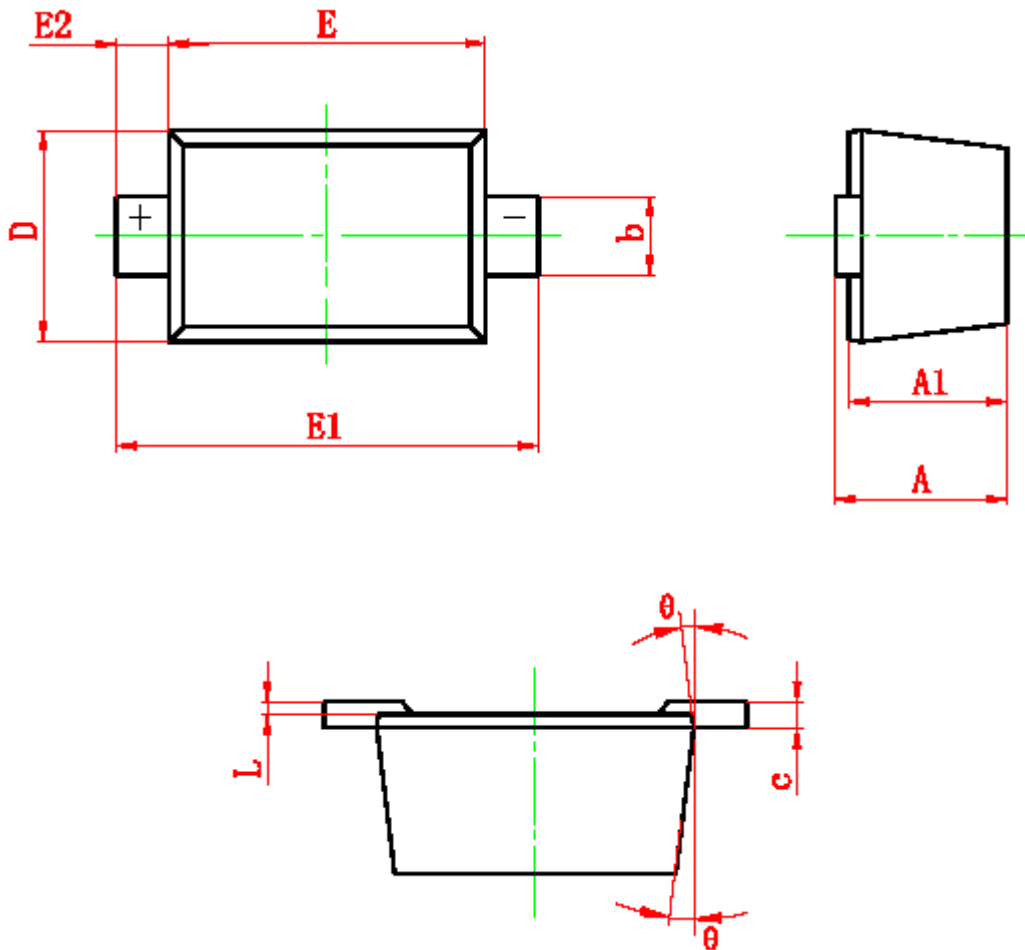
Fig 4 : Forward Voltage Drop V.S Peak Forward Current

## SOD-723 PACKAGE OUTLINE



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Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.525	0.650	0.021	0.026
A1	0.515	0.580	0.020	0.023
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.550	0.650	0.022	0.026
E	0.900	1.100	0.035	0.043
E1	1.300	1.500	0.051	0.059
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
$\theta$	7° REF		7° REF	



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