

# SM712

ROHS

## Transient Voltage Suppressors for ESD Protection

### Description

The SM712 is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

### Feature

- ◆ 405 Watts Peak Pulse Power per Line (tp=8/20µs)
- ◆ Protects two +12V to -7V lines
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 15A (8/20µs)

### Applications

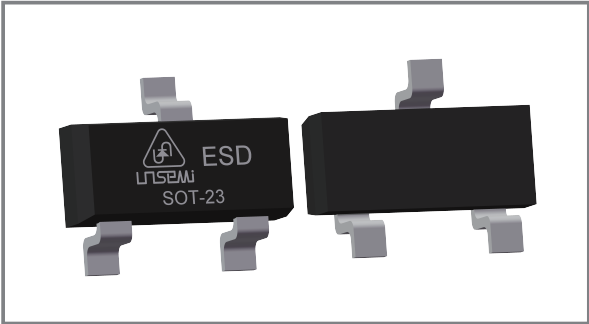
- ◆ Protection of RS-485 transceivers with extended common-mode range
- ◆ Security systems
- ◆ Automatic Teller Machines
- ◆ HFC systems
- ◆ Networks

### Mechanical Characteristics

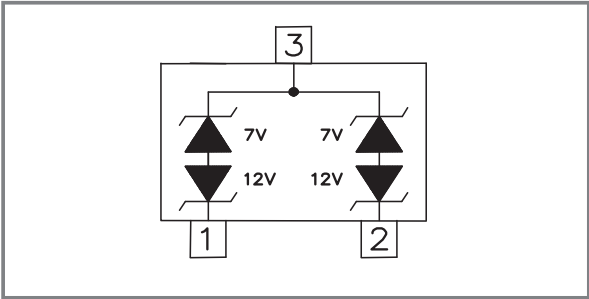
Parameter	Symbol	Value	Units
Peak Pulse Power (Tp=8/20µs waveform)	P <sub>pp</sub>	405	Watts
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C
Operating Junction Temperature Range	T <sub>J</sub>	-40 to +125	°C



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### Functional Diagram



### Mechanical Data

- ◆ JEDEC SOT-23 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 8.0 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

Electrical Characteristics @ 25°C Unless Otherwise Specified )

Part Number	Device Marking		V <sub>RMW</sub> (V) (Max.)	V <sub>BR</sub> (V) (Min.)	I <sub>T</sub> (mA)	V <sub>C</sub> @1A (Max.)	V <sub>C</sub>		I <sub>R</sub> (uA) (Max.)	C (pF) (Typ.)
							(Max.)	(@A)		
SM712	M72	Pin3 to Pin1 / Pin2	7	7.5	1.0	10	15	20	10	55
		Pin1 / Pin2 to Pin3	12	13.3	1.0	20	27	15	1	55

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

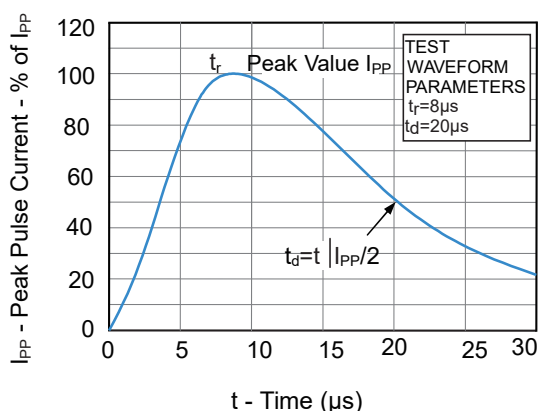


Fig2. Power Rating Derating Curve

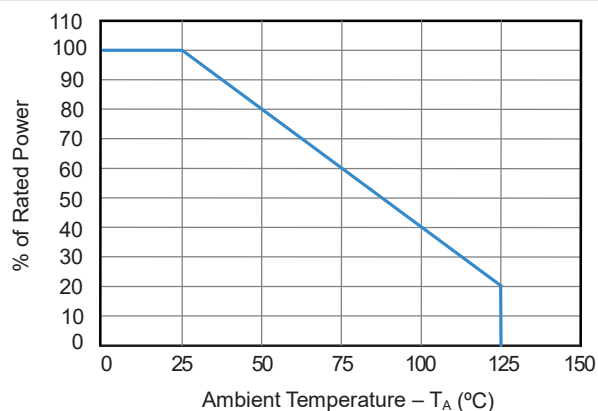
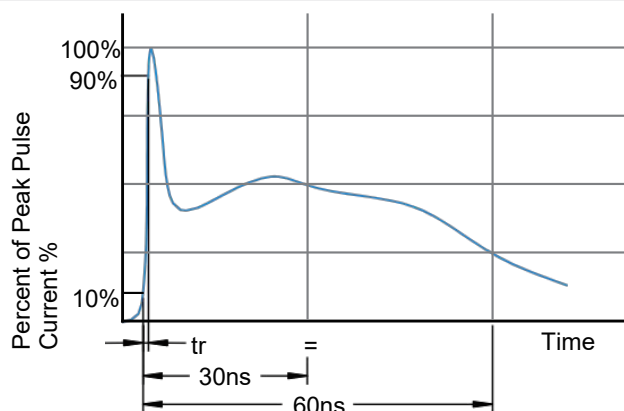
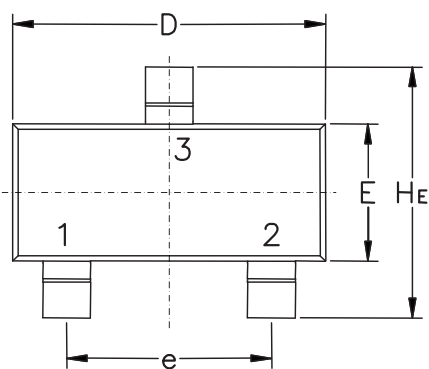


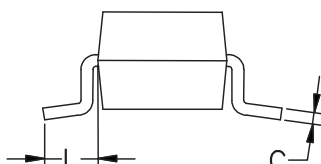
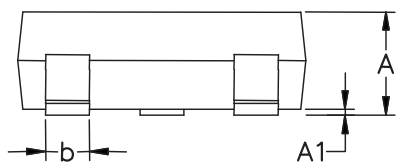
Fig3. ESD Pulse Waveform(According to IEC61000-4-2)



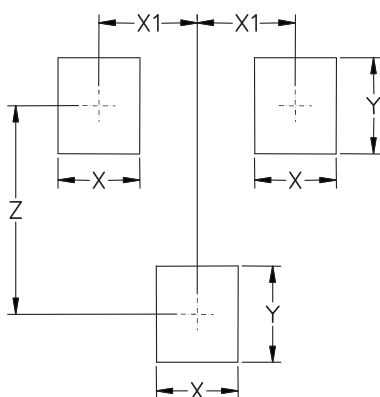
## SOT-23 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.10	1.00	1.75	0.004	0.040	0.070
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.30	0.44	0.50	0.012	0.017	0.020
C	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.00	1.10	1.20	0.039	0.043	0.047
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.75	2.10	2.15	0.108	0.083	0.085



### Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.91	0.037
Y	0.90	0.035
Z	2.00	0.079

## Ordering Information

Device	Package	Quantity	Reel Size
SM712	SOT-23	3,000pcs/Reel	7 inch

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