

### Features

- 150W peak pulse power(8/20μs)
- Ultra low leakage: nA level
- Operating voltage: 7V or 12V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 7A (8/20μs)
- RoHS Compliant

### Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

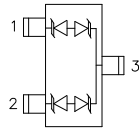
### Applications

- Wireless System
- Networks
- Portable Instrumentation
- RS485 Ports

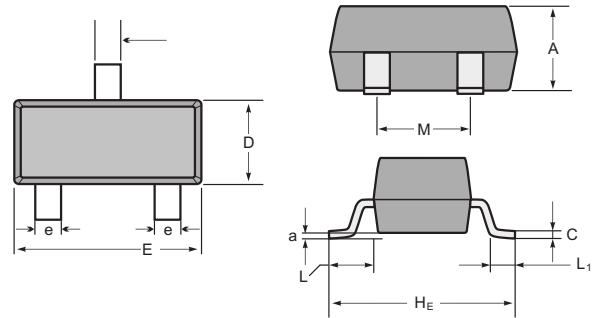
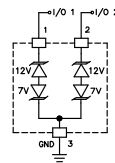
### Ordering information

Order code	Package	Making
SM712	SOT-23	712

Pin Configuration



Circuit Diagram



SOT-23 mechanical data

UNIT		A	C	D	E	H <sub>E</sub>	e	M	L	L <sub>1</sub>	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20μs)	P <sub>pk</sub>	150	W
Peak Pulse Current(8/20μs)	I <sub>pp</sub>	7	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

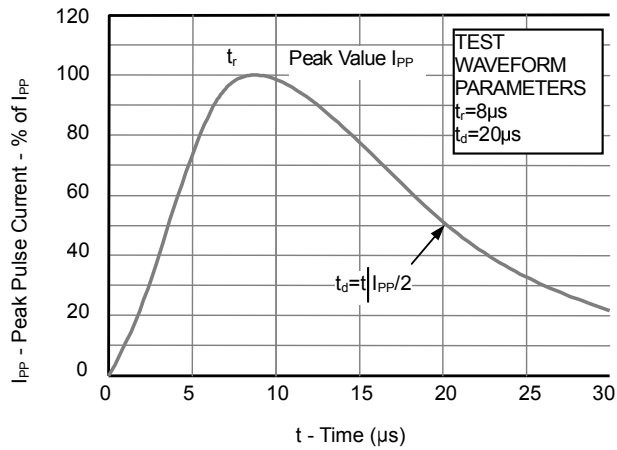
# SM712

Electrical Characteristics (TA=25°C unless otherwise specified)

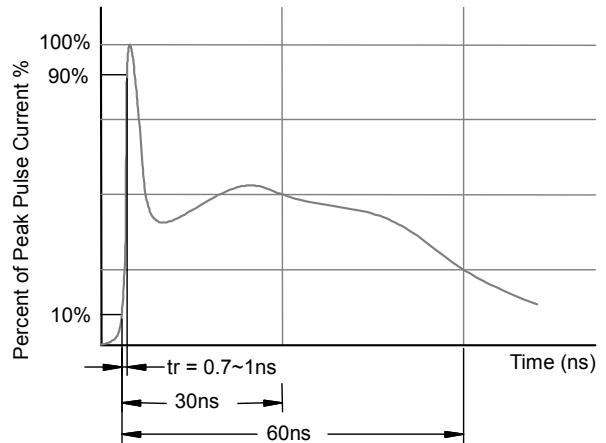
Parameter	Symbol	Pin 1 to 3 and 2 to 3(12V TVS)			Pin 3to 1 and 3 to 2(7V TVS)			Unit	Test Condition
		Min	Typ	Max	Min	Typ	Max		
Reverse Working Voltage	VRWM			12			7	V	
Breakdown Voltage	VBR	13.3			7.5			V	IT = 1mA
Reverse Leakage Current	IR		0.01	0.5		0.01	0.5	μA	VR = VRWM
Clamping Voltage	VC			19			11	V	I <sub>PP</sub> = 1A (8 x 20μs pulse)
Clamping Voltage	VC			25			15	V	I <sub>PP</sub> = 7A (8 x 20μs pulse)
Junction Capacitance	CJ			75			75	pF	VR=0, f=1MHz
Junction Capacitance	CJ		45			45		pF	VR=VRWM, f=1MHz

## RATING AND CHARACTERISTIC CURVES (SM712)

**Fig1. 8/20 $\mu$ s Pulse Waveform**



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**

