

Asymmetrical TVS Diode

Features

- 400W peak pulse power (8/20 μ s)
- 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: \pm 30kV
- Contact discharge: \pm 30kV
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 17A (8/20 μ s)
- 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

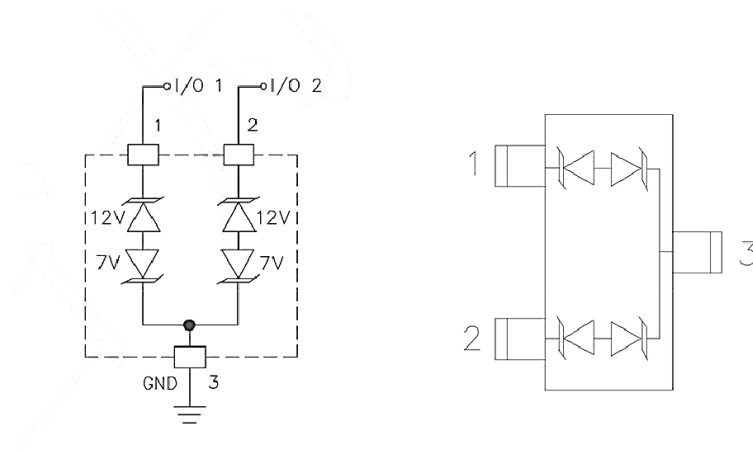
Applications

- Wireless System
- Networks
- Portable Instrumentation
- RS485 Ports

Ordering Information

Part Number	Qty per Reel	Reel Size
SM712	3000	7"

Dimensions and Pin Configuration





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Absolute Maximum Ratings (T_{amb}=25 °C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{pk}	400	W
Peak Pulse Current (8/20μs)	I _{pp}	17	A
ESO per IEC 61000-4-2 (Air) ESO per IEC 61000-4-2 (Contact)	V _{ESD}	±30 ±30	Kv
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

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

Parameter	Symbol	Pin 1 to 3 and 2 to 3 (12V TVS)			Pin 3 to 1 and 3 to 2 (7V TVS)			Unit	Test Condition
		Min	Typ	Max	Min	Typ	Max		
Reverse Working Voltage	V _{RWM}			12			7	V	
Breakdown Voltage	V _{BR}	13.3			7.5			V	I _T = 1mA
Reverse Leakage Current	I _R			0.05			2.0	uA	V _R = V _{RWM}
Clamping Voltage	V _C			20			10	V	I _{PP} = 5A (8 x 20μs pulse)
Clamping Voltage	V _C			26			12	V	I _{PP} = 17A (8 x 20μs pulse)
Junction Capacitance	C _J			75			75	pF	V _R = 0V, f = 1MHz
Junction Capacitance	C _J		45			45		pF	V _R = V _{RWM} , f = 1MHz

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PROTECTION PRODUCTS Typical characteristics

Fig1. 8/20 μ s Pulse Waveform

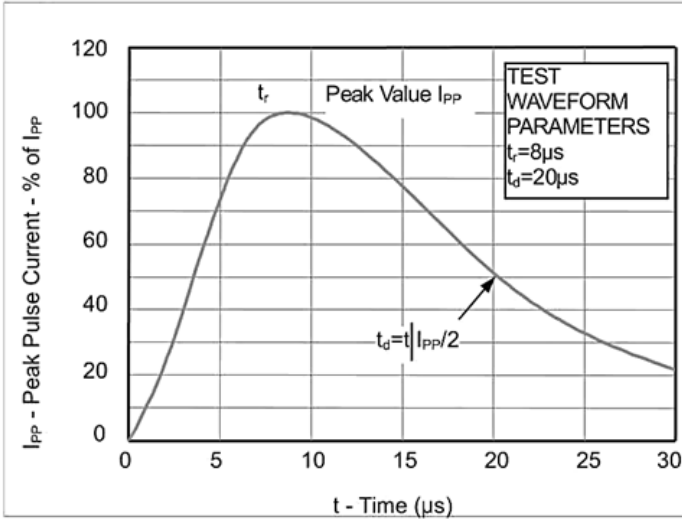


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

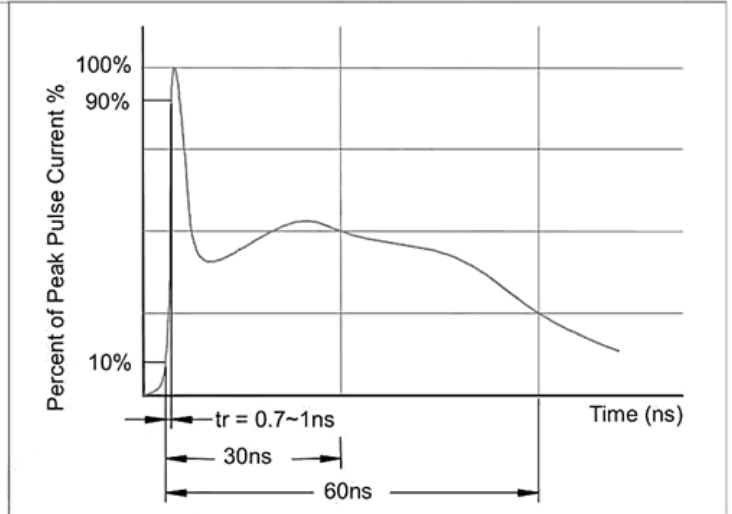
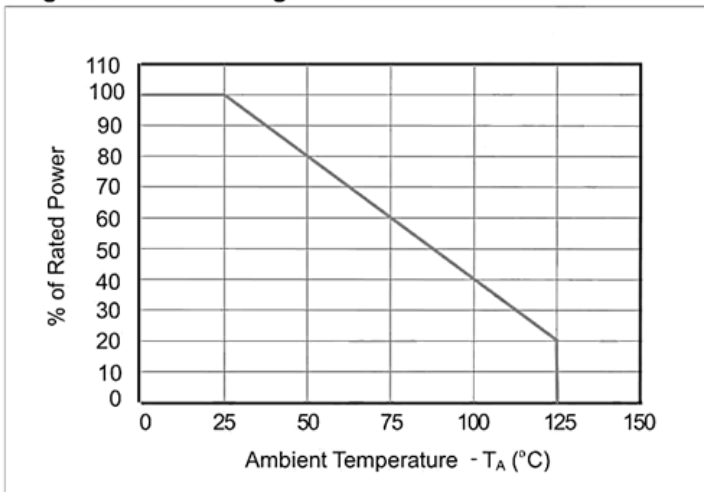
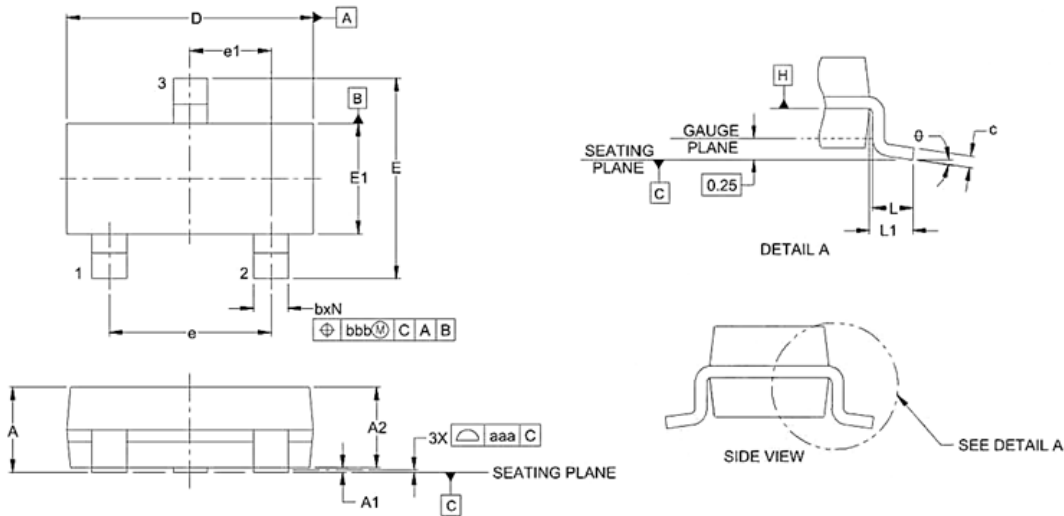


Fig3. Power Derating Curve



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Outline Drawing - SOT23



Land Pattern - SOT23

