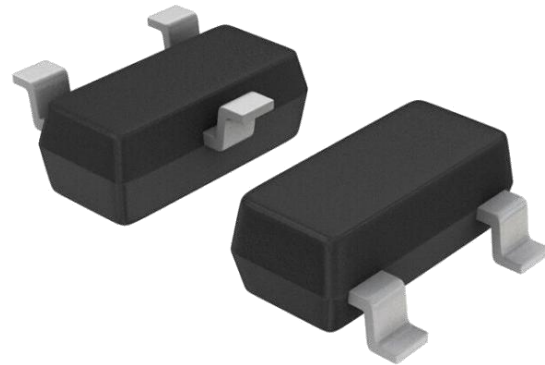




Features

- 400 Watts peak pulse power ($t_p = 8/20\mu s$)
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ($C_j = 60$ pF typ.)
- Protection two data lines:
- IEC 61000-4-2 $\pm 8kV$ contact $\pm 15kV$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 12A (8/20 μs)



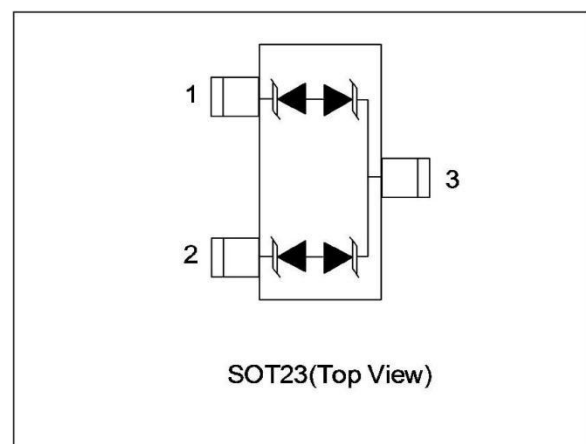
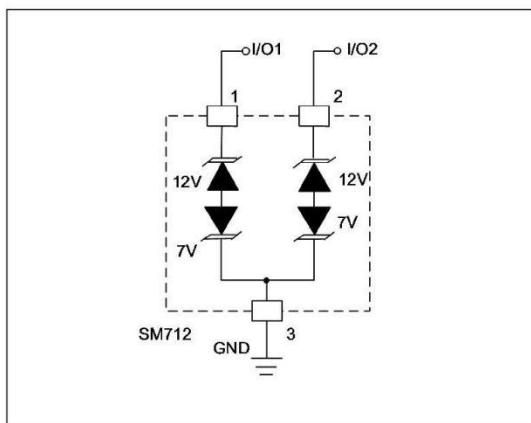
Applications

- Dataline
- Automatic Teller Machines
- Net works
- Power line

Mechanical Data

- SOT23 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Absolute Maximum Rating

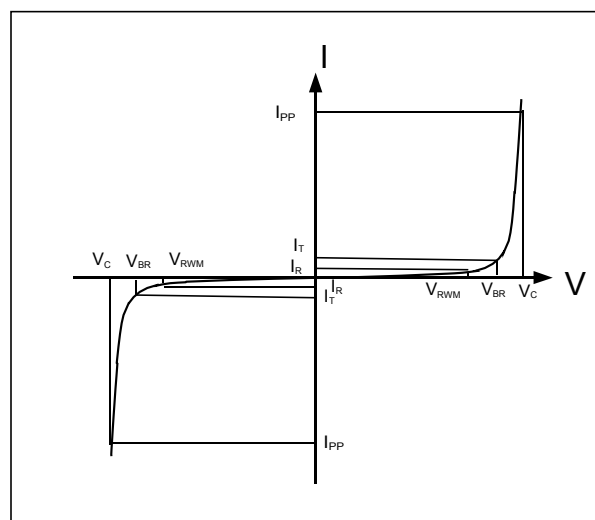
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	400	Watts
Peak Pulse Current ($t_p = 8/20\mu s$) (note1)	I_{PP}	12	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	15 8	kV
Lead Soldering Temperature	T_L	260(10seconds)	$^{\circ}C$
Junction Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{stg}	-55 to + 125	$^{\circ}C$

Electrical Characteristics

			Pins 1 to 3 and 2 to 3 (12V TVS)			Pins 3 to 1 and 3 to 2 (7V TVS)			
Parameter	Symbol	Conditions	Min	Typical	Max	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				12			7	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	13.3			7.5			V
Reverse Leakage Current	I_R	$V_R = V_{RWM}$			1			1	μA
Clamping Voltage	V_C	$I_{PP} = 12A, t_p = 8/20\mu s$			20			10	V
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$		60	75		60	75	pF

Electrical Parameters ($T_A = 25^{\circ}C$ unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Note.: 8/20 μs pulse waveform.

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

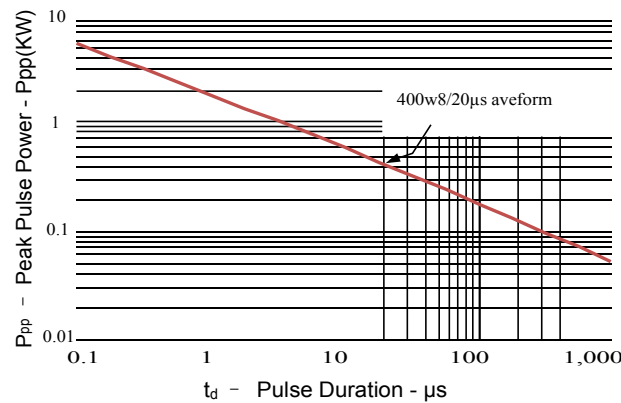


Figure 2: Power Derating Curve

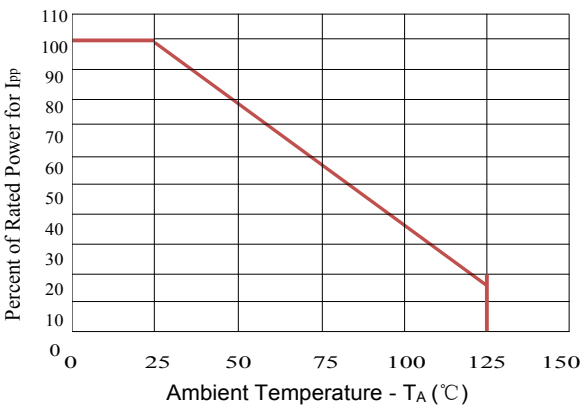


Figure3: Pulse Waveform

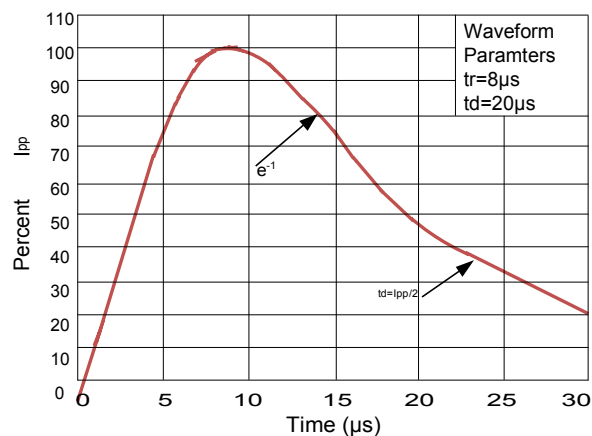
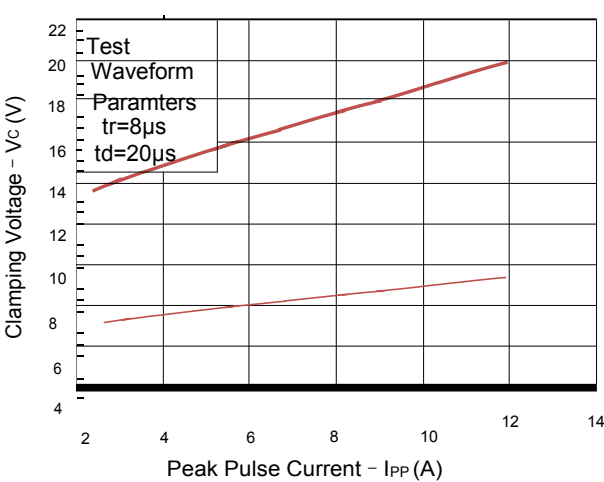
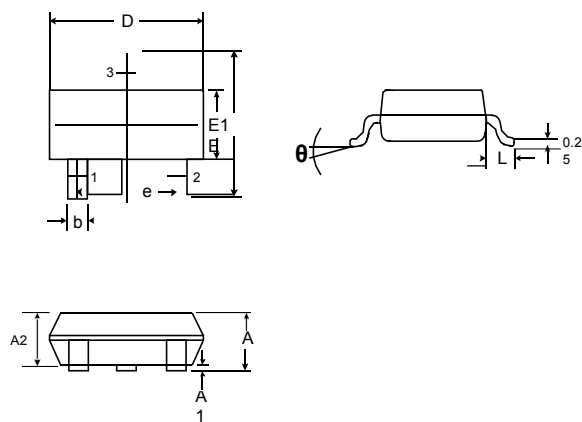


Figure 4: Clamping Voltage vs. Ipp

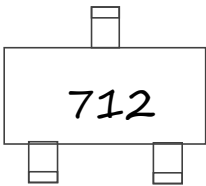


Outline Drawing – SOT23



SYMBOL	DIMENSIONS			
	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.89	1.12	0.035	0.044
A1	0.01	0.10	0.0006	0.0043
A2	0.88	1.02	0.035	0.040
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	1.90BSC		0.75 BSC	
L	0.40	0.60	0.015	0.024
θ	0	8	0	8

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
SES712M	SOT23	3k	Tape and reel