

Features

- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- Low reverse clamping voltage
- RoHS compliant with Halogen-free

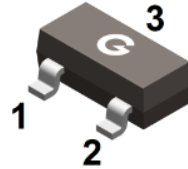
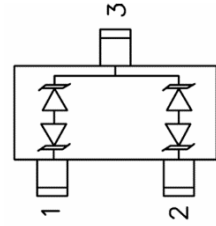
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Typical Applications

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

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
SM712	SOT-23	3000 pcs / Tape & Reel	712

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (Air)	$V_{\text{ESD-A}}$	± 30	kV
IEC 61000-4-2; ESD (Contact)	$V_{\text{ESD-C}}$	± 30	kV
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	350	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	15	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Lead Solder Temperature (10 Seconds Duration)	T_L	260	$^\circ\text{C}$
Junction Temperature	T_J	$-55 \sim +125$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V_{RWM}	Pins 1 to 3 and 2 to 3	-	-	12	V
		Pins 3 to 1 and 3 to 2	-	-	7	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$ (Pins 1 to 3 and 2 to 3)	13.2	-	-	V
		$I_T = 1\text{mA}$ (Pins 3 to 1 and 3 to 2)	7.5	-	-	V
Reverse Leakage Current	I_R	$V_{RWM} = 12\text{V}$ (Pins 1 to 3 and 2 to 3)	-	-	1	μA
		$V_{RWM} = 7\text{V}$ (Pins 3 to 1 and 3 to 2)	-	-	20	μA
Clamping Voltage	V_C	$I_{PP} = 5\text{A}$, $t_p = 8/20\mu\text{s}$ (Pins 1 to 3 and 2 to 3)	-	-	20	V
		$I_{PP} = 15\text{A}$, $t_p = 8/20\mu\text{s}$ (Pins 1 to 3 and 2 to 3)	-	-	26	V
Clamping Voltage	V_C	$I_{PP} = 5\text{A}$, $t_p = 8/20\mu\text{s}$ (Pins 3 to 1 and 3 to 2)	-	-	14	V
		$I_{PP} = 15\text{A}$, $t_p = 8/20\mu\text{s}$ (Pins 3 to 1 and 3 to 2)	-	-	18	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ (Pins 1 to 3 and 2 to 3)	-	-	75	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$ (Pins 3 to 1 and 3 to 2)	-	-	75	pF

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

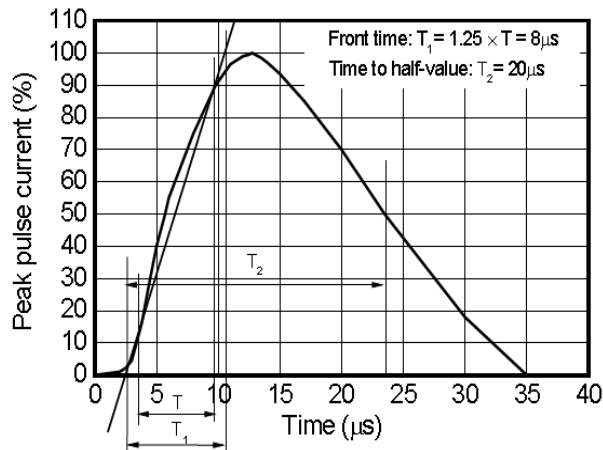


Fig 1 8/20 μs waveform per IEC61000-4-5

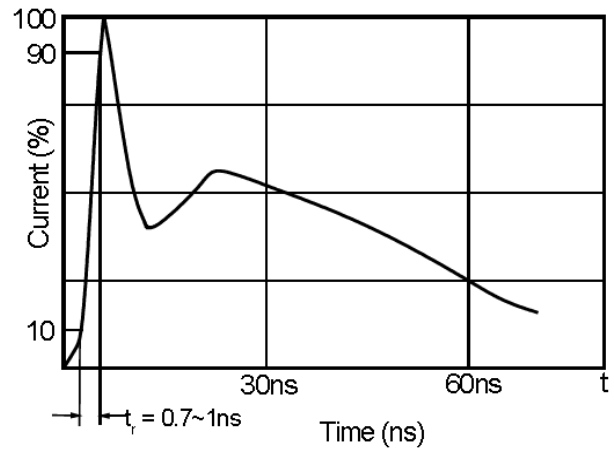


Fig 2 ESD pulse waveform according to IEC61000-4-2

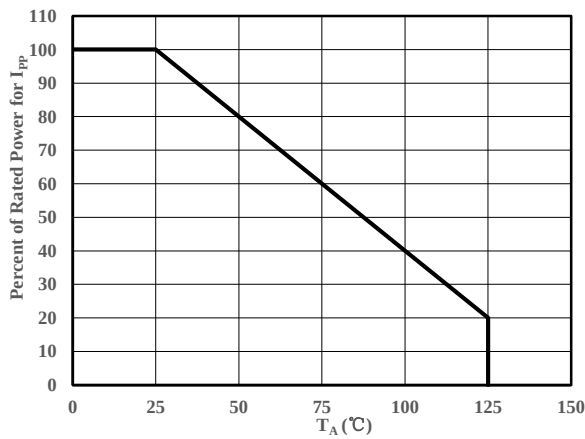


Fig 3 Power Derating Curve

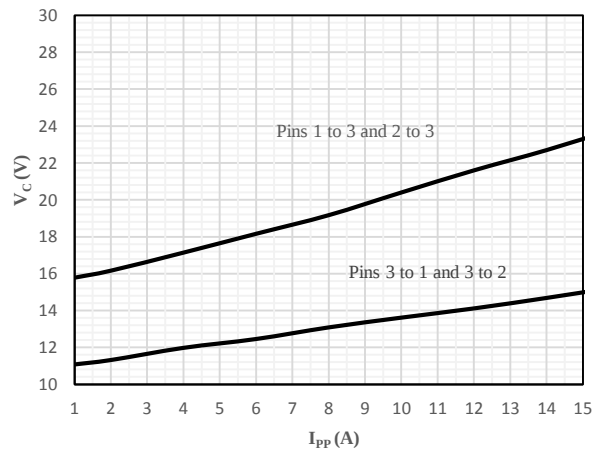


Fig 4 Clamping Voltage vs. Peak Pulse Current

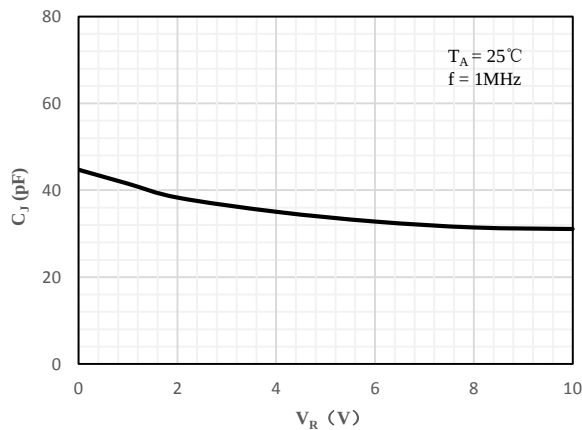
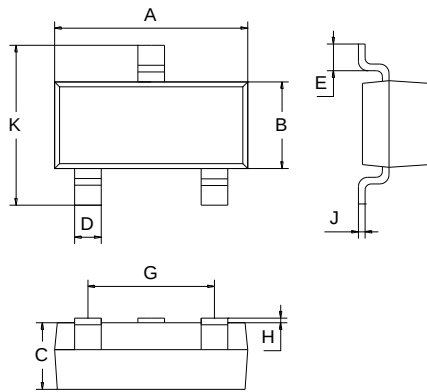


Fig 5 Junction Capacitance vs. Reverse Voltage

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

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