

## Features

- ESD / transient protection of high speed data lines
  - IEC 61000-4-2 (ESD):  $\pm 30$  kV (air),  $\pm 30$  kV (contact)
- Low reverse clamping voltage

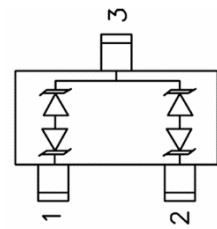
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## Typical Applications

- 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	3000pcs / Tape & Reel	712

## Maximum Ratings

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

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

## Thermal Characteristics

Parameter	Symbol	Value	Unit
Lead Solder Temperature (10 Seconds Duration)	$T_L$	260	$^\circ\text{C}$
Junction Temperature	$T_J$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{STG}}$	-55 to +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	$\mu\text{A}$
		$V_{RWM} = 7\text{V}$ (Pins 3 to 1 and 3 to 2)	-	-	20	$\mu\text{A}$
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)

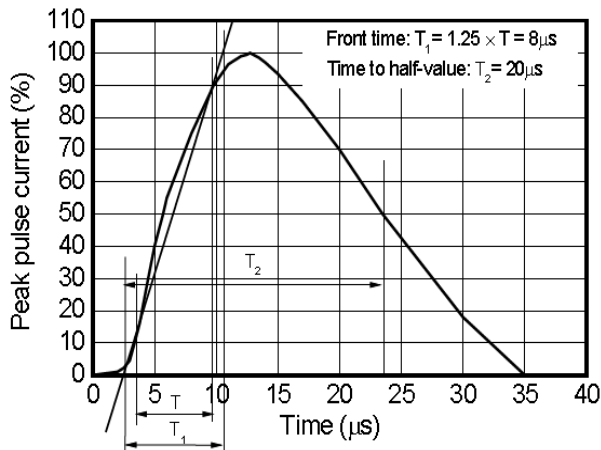


Fig 1 8/20  $\mu\text{s}$  waveform per IEC61000-4-5

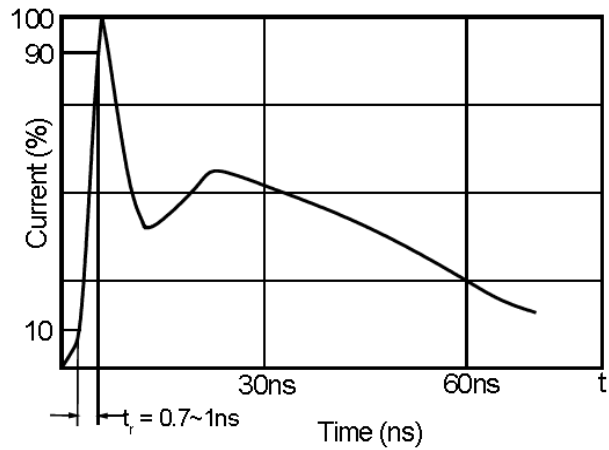


Fig 2 ESD pulse waveform according to IEC61000-4-2

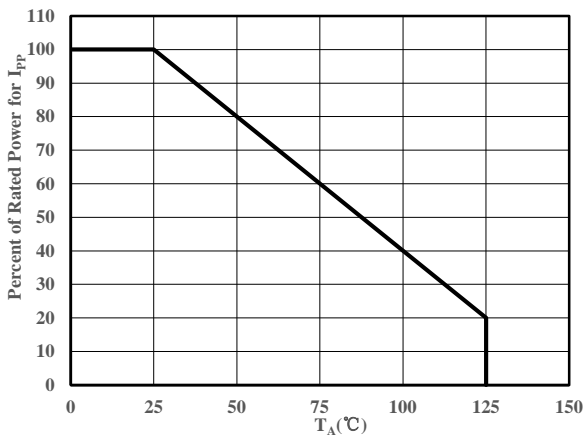


Fig 3 Power Derating Curve

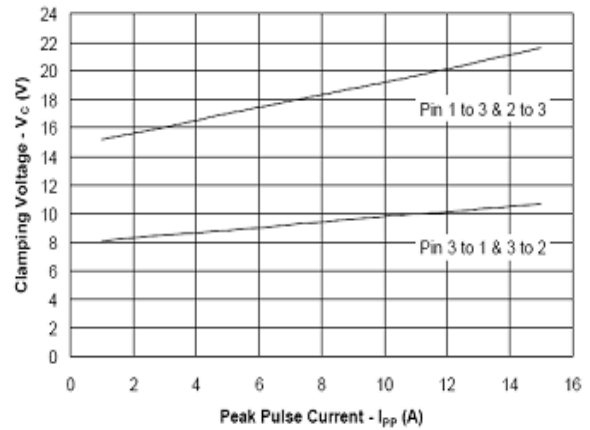
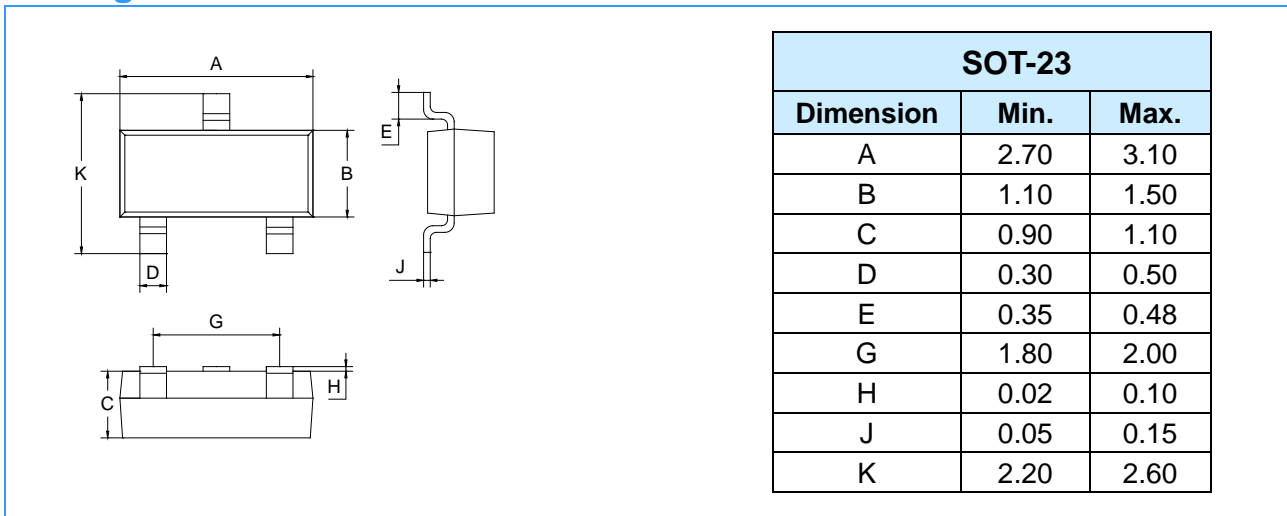
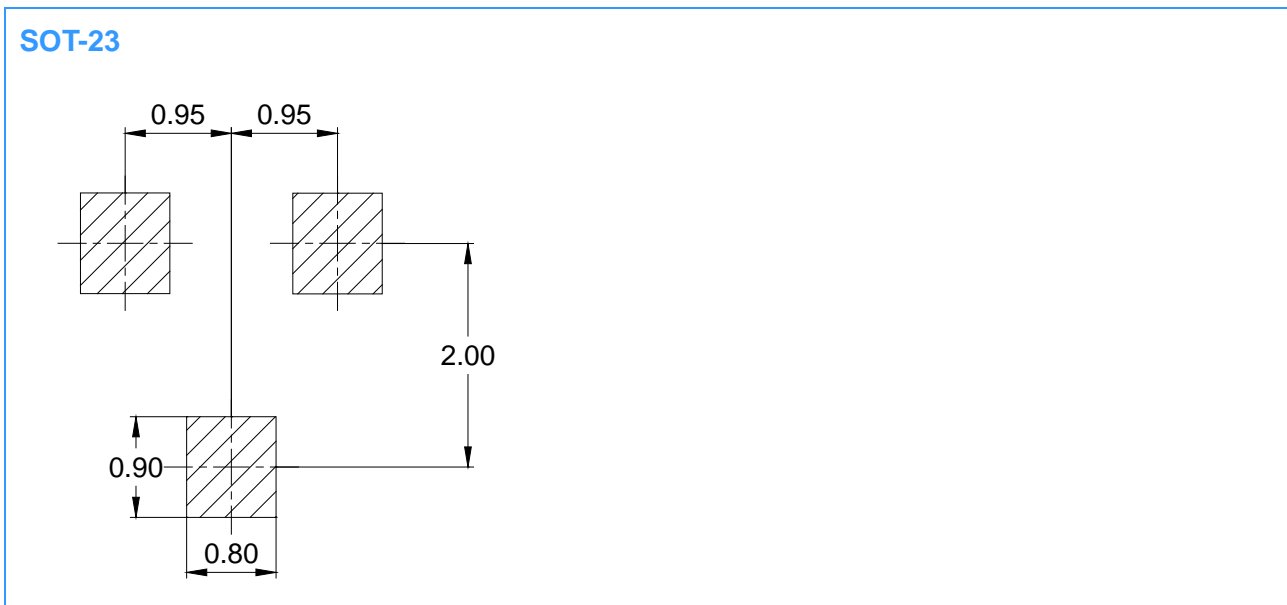


Fig 4. Clamping Voltage vs. Peak Pulse Current

Package Outline Dimensions (Unit: mm)



Package Outline Dimensions (Unit: mm)



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