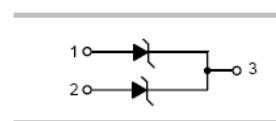


Features

- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): ± 30 kV (air), ± 30 kV (contact)
- Working voltage: $V_{RWM} = 12V$
- Low reverse clamping voltage

HF

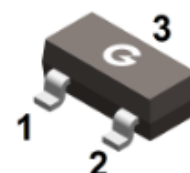


Typical Applications

- Computers and peripherals
- Portable electronics
- Industrial controls
- Set-Top Box
- Servers, Notebook, and Desktop PC

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
SM12C	SOT-23	3000 pcs / Tape & Reel	M12C

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

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (Air)	V_{ESD-A}	± 30	kV
IEC 61000-4-2; ESD (Contact)	V_{ESD-C}	± 30	kV
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	300	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	12	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}		-	-	12	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$	13.3	-	-	V
Reverse Leakage Current	I_R	$V_{RWM} = 12\text{V}$	-	-	1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$	-	-	19	V
		$I_{PP} = 12\text{A}$, $t_p = 8/20\mu\text{s}$	-	-	25	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ (Pin 1 to 2)	-	-	120	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$ (Pin 1 to 3 and Pin 2 to 3)	-	-	150	pF

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

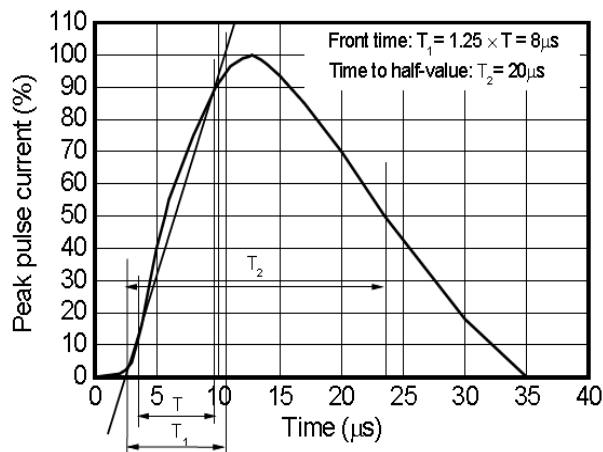


Fig 1 8/20 μs waveform per IEC61000-4-5

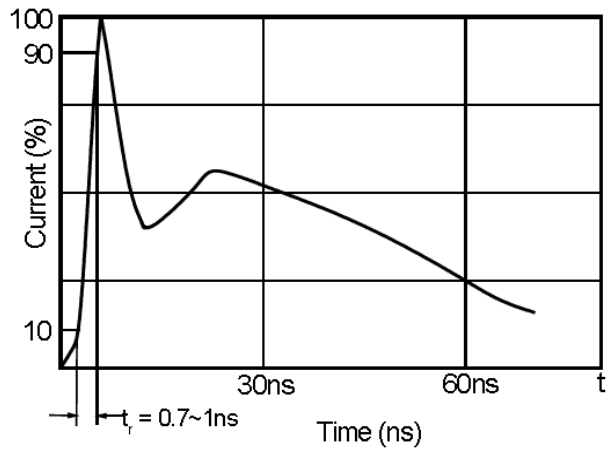


Fig 2 ESD pulse waveform according to IEC61000-4-2

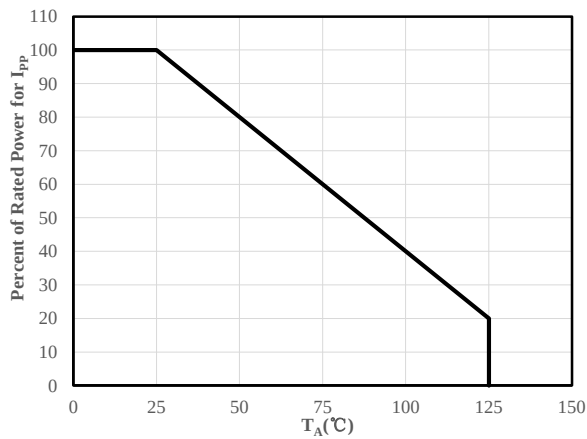


Fig 3 Pulse Derating Curve

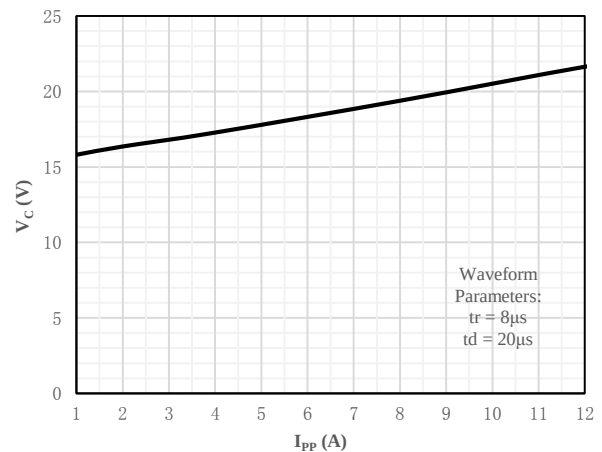


Fig 4 Clamping Voltage vs. Peak Pulse Current

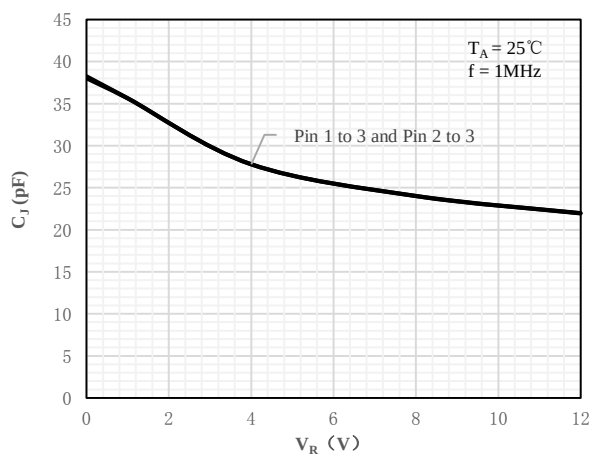
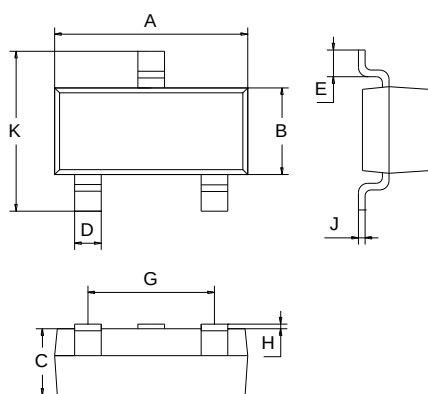


Fig 5 Junction Capacitance vs. Breakdown Voltage

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)

SOT-23

