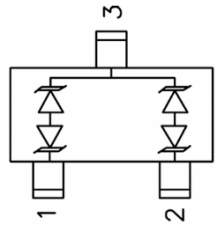
Features

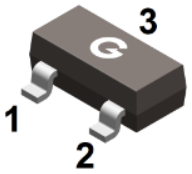
HF

- ESD / transient protection of high speed data lines
  - IEC 61000-4-2 (ESD): ±30kV (air), ±30kV (contact)
- Low reverse clamping voltage
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards



Typical Applications

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



SOT-23

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

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TSM712	SOT-23	3000 pcs / Tape & Reel	712

Maximum Ratings (@ T_A = 25℃ 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 = 8/20μs)	P_{PP}	350	W
Peak Pulse Current (t_p = 8/20μs)	I_{PP}	15	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Lead Solder Temperature (10 Seconds Duration)	T_L	260	°C
Junction Temperature	T_J	-55 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25℃ 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 = 1mA(Pins 1 to 3 and 2 to 3)	13.2	-	-	V
		I_T = 1mA(Pins 3 to 1 and 3 to 2)	7.5	-	-	V
Reverse Leakage Current	I_R	V_{RWM} = 12V(Pins 1 to 3 and 2 to 3)	-	-	1	μA
		V_{RWM} = 7V(Pins 3 to 1 and 3 to 2)	-	-	20	μA
Clamping Voltage	V_C	I_{PP} = 5A, tp = 8/20μs (Pins 1 to 3 and 2 to 3)	-	-	20	V
		I_{PP} = 15A, tp = 8/20μs (Pins 1 to 3 and 2 to 3)	-	-	26	V
Clamping Voltage	V_C	I_{PP} = 5A, tp = 8/20μs (Pins 3 to 1 and 3 to 2)	-	-	14	V
		I_{PP} = 15A, tp = 8/20μs (Pins 3 to 1 and 3 to 2)	-	-	18	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHZ (Pins 1 to 3 and 2 to 3)	-	-	75	pF
		V_R = 0V, f = 1MHZ (Pins 3 to 1 and 3 to 2)	-	-	75	pF

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

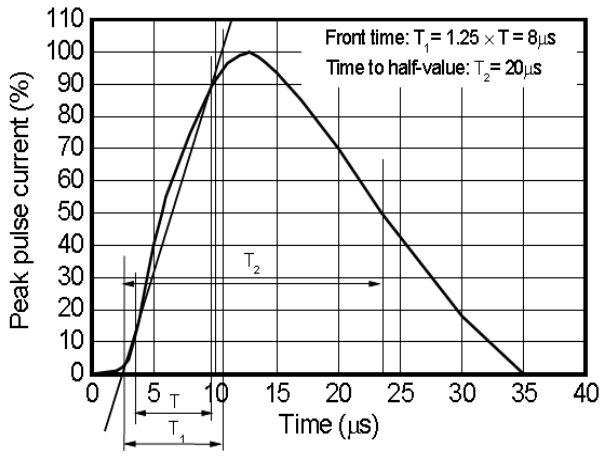


Fig 1 8/2 0μs waveform per IEC61000-4-5

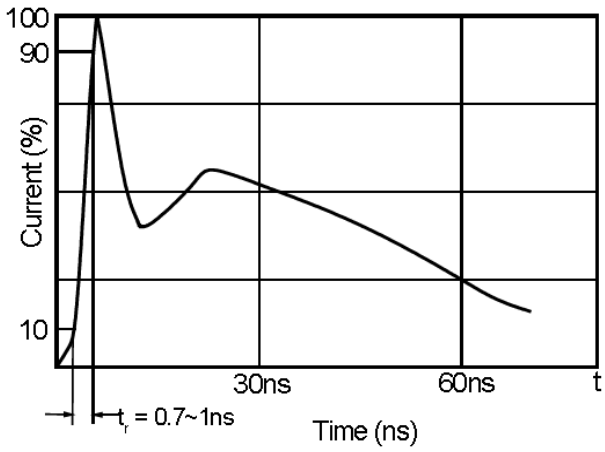


Fig 2 ESD pulse waveform according to IEC61000-4-2

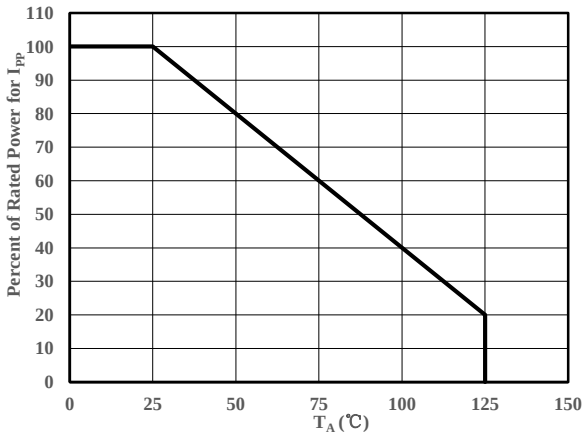


Fig 3 Power Derating Curve

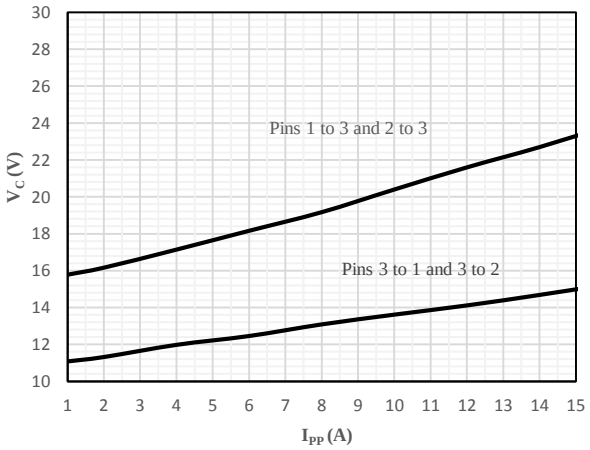


Fig 4 Clamping Voltage vs. Peak Pulse Current

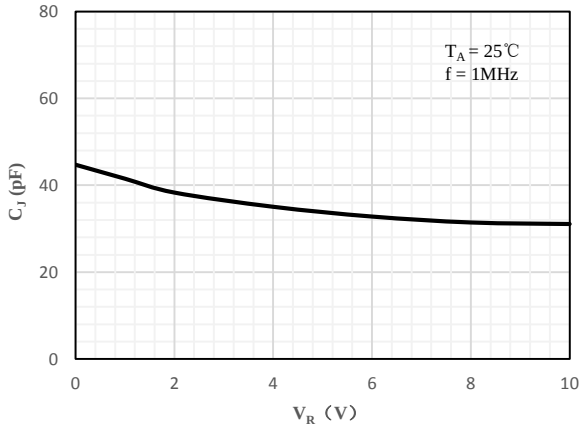
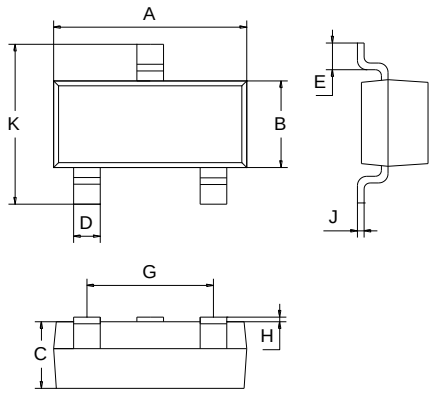


Fig 5 Junction Capacitance vs. Reverse Voltage

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)

SOT-23