SM712 ESD Protection Diode

Feature

- Bi-directional ESD protection of two lines
- 350 Watts peak pulse power (tp = 8/20μs)
- Junction capacitance: 55pF(Typ)
- Low clamping voltage
- IEC 61000-4-2 ±8kV contact ±15kV air
- IEC 61000-4-5 (Lightning) 17A (8/20μs)
- IEC 61000-4-4 (EFT) 40A (5/50ns)

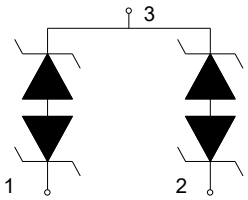
Application

- RS-485
- Security systems
- Automatic teller machines
- HFC systems

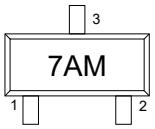
Mechanical Data

- Package: SOT-23
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
SM712	SOT-23		3000 Tape & Reel	7 inches

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

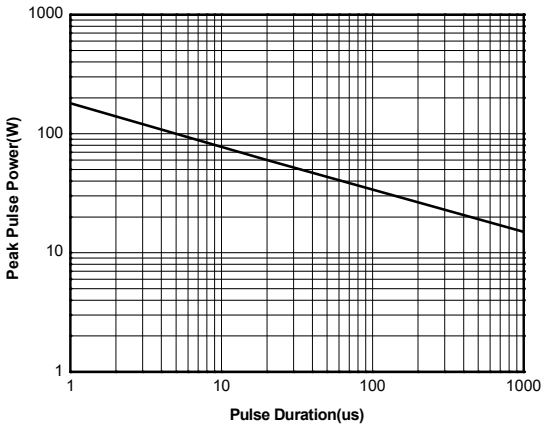
Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	350	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		17	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±15	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±8	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

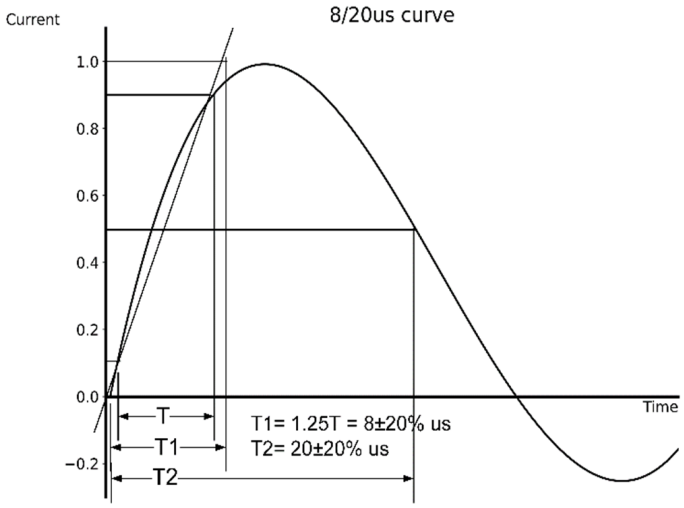
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameters	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}	Pin1 or Pin2 to Pin3			12	V
		Pin3 to Pin1 or Pin2			7	
Reverse Breakdown Voltage	V_{BR}	Pin1 or Pin2 to Pin3; I_R= 1mA	13.3			V
		Pin3 to Pin 1or Pin2; I_R= 1mA	7.5			
Reverse Leakage Current	I_R	Pin1 or Pin2 to Pin3; V_{RWM}=12V			1	uA
		Pin3 to Pin1or Pin2; V_{RWM}=7V			1	
Peak Pulse Current	I_{PP}	Pin1 or Pin2 to Pin3		17		A
		Pin3 to Pin1 or Pin2		17		
Clamping Voltage	V_{CL}	Pin1 or Pin2 to Pin3; I_{PP}=17A		26		V
		Pin3 to Pin1 or Pin2; I_{PP}=17A		19		
Junction capacitance	C_O	V_R=0V; f = 1MHz		55		pF

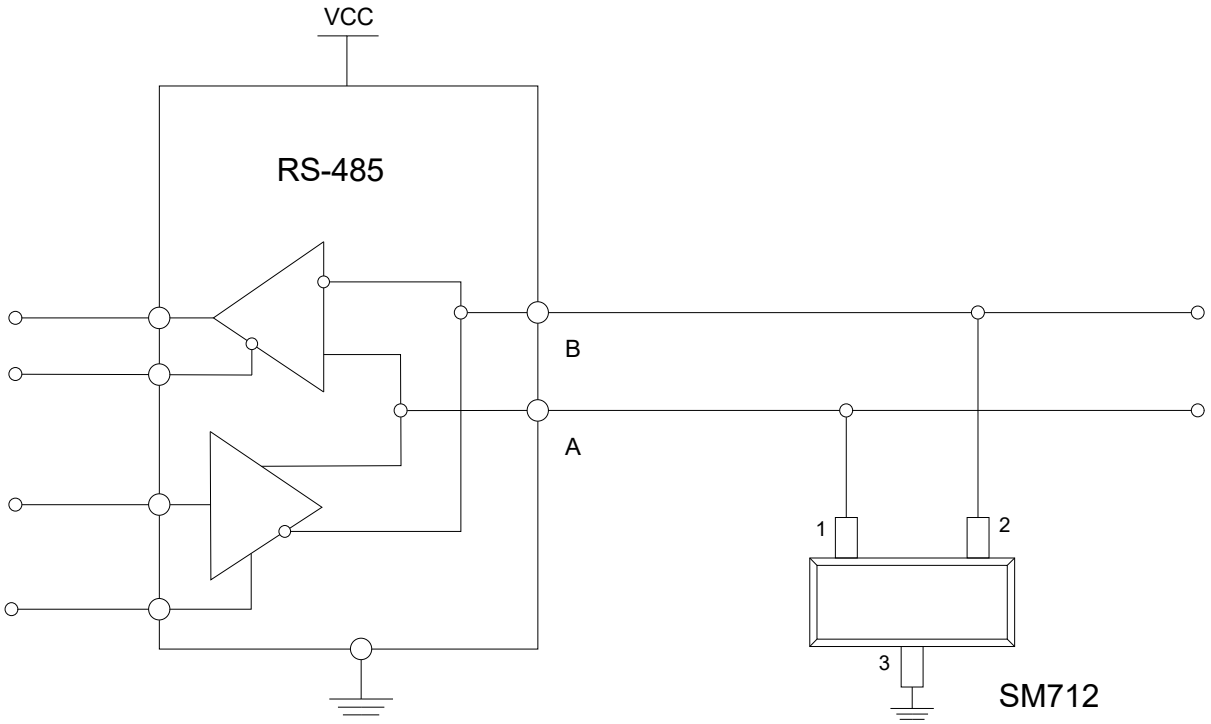
Typical Characteristics

Non-repetitive peak pulse power vs. pulse time



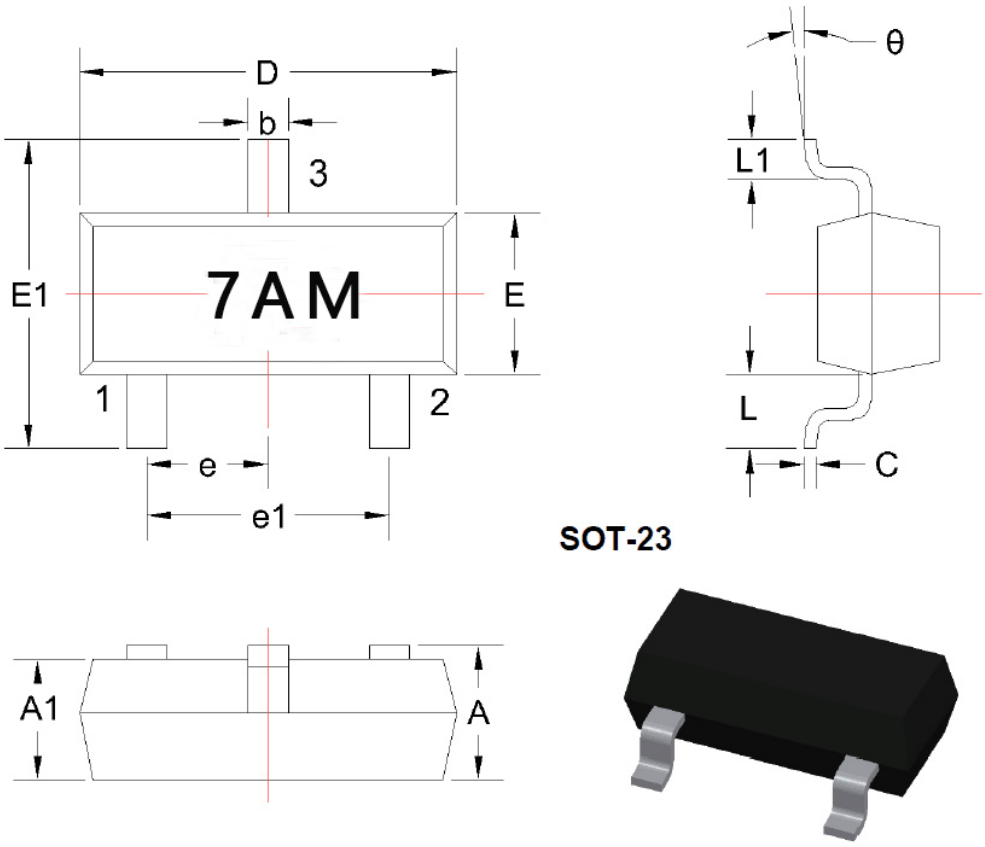


Typical Application



Typical RS-485 Interface Application

SOT-23 Outline Drawing



Dimensions in Millimeters					
Symbol	Min.	Max.	Symbol	Min.	Max.
A	0.9	1.15	e1	1.80	2.00
A1	0.00	0.10	L	0.55REF	
b	0.30	0.50	L1	0.30	0.50
C	0.08	0.15	θ	0°	8°
D	2.80	3.00			
E	1.20	1.40			
E1	2.25	2.55			
e	0.95TYP				