

SOT-23 Plastic-Encapsulate ESD Protection Diodes

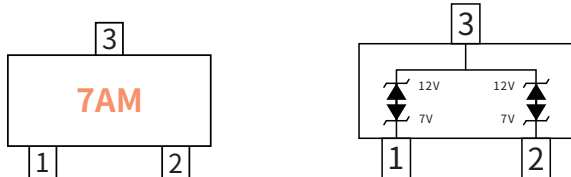
Features

- Normal capacitance: $C_{1,2\text{ to }3}=75\text{pF}(\text{Max.})$
- Protects two -7V to +12V lines
- Low leakage current
- IEC 61000-4-2 (ESD Air): $\pm 20\text{kV}$
- IEC 61000-4-2 (ESD Contact): $\pm 15\text{kV}$
- IEC 61000-4-5 (Lightning 8/20 μs): 12A

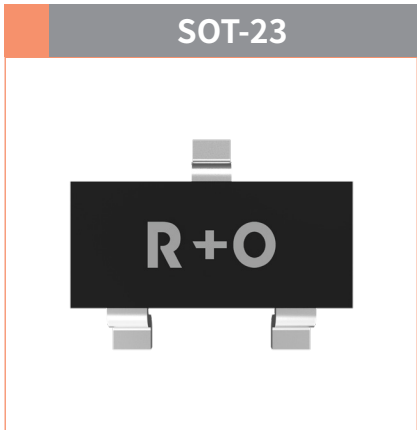
Applications

- Protection of RS-485 transceivers with extended common-mode range
- Security systems
- Automatic teller machines
- HFC systems
- Net works

Function Diagram



Reverse Working Voltage
7/12V Max.
Normal Capacitance
75pF(Max.)

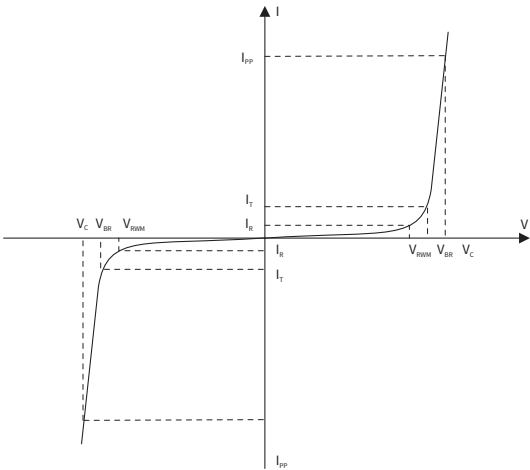


Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{ESD}	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2(Air)	± 20	KV
		ESD per IEC 61000-4-2(Contact)	± 15	KV
P_{PP}	Peak Pulse Power	$t_p = 8/20 \mu\text{s}$	300	W
I_{PP}	Rated Peak Pulse Current	$t_p = 8/20 \mu\text{s}$	12	A
T_J	Operating JunctionTemperature Range	—	-55 to +125	°C
T_{STG}	Operating JunctionTemperature Range	—	-55 to +150	°C

Electrical Parameter

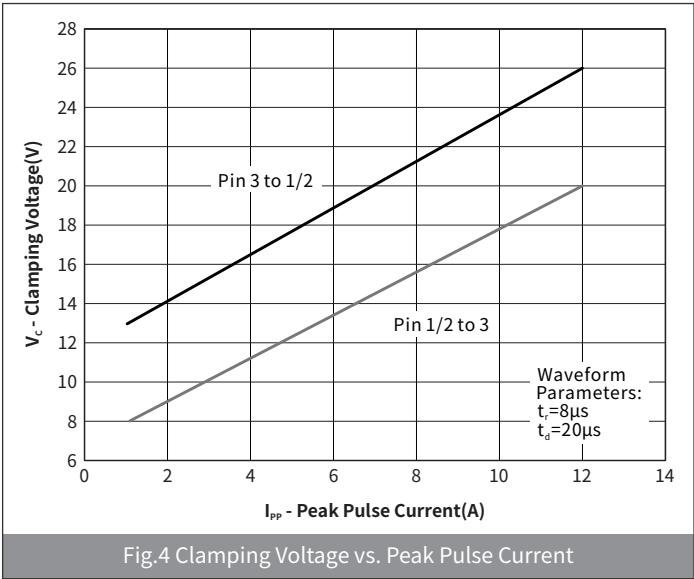
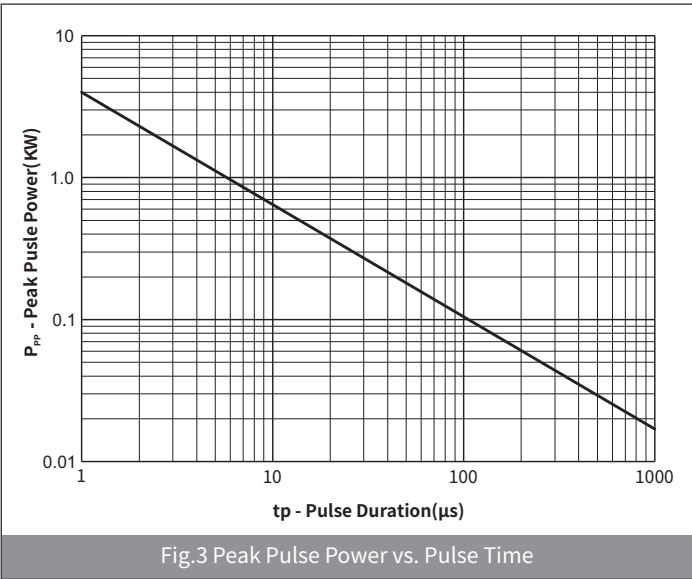
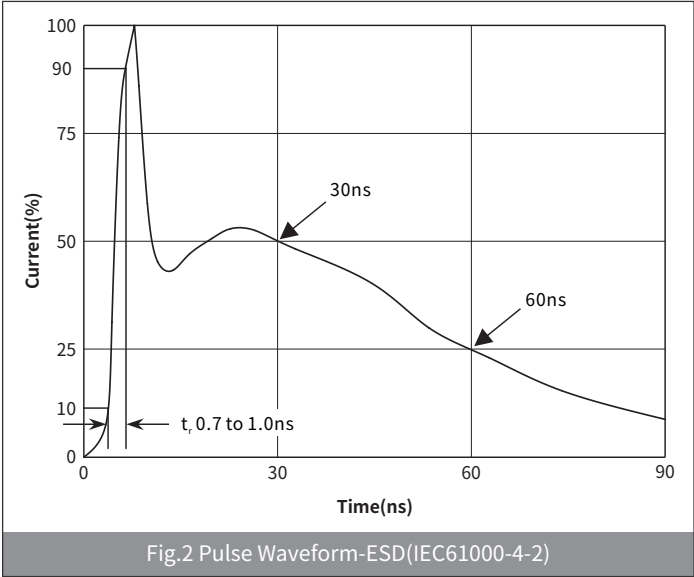
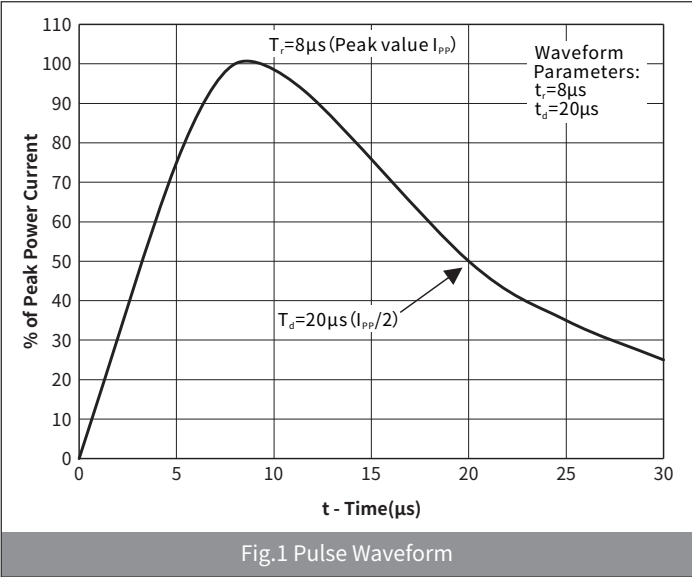
SYMBOL	PARAMETER
V_C	Clamping Voltage @ I_{PP}
V_{BR}	Breakdown Voltage @ I_T
I_{PP}	Peak Pulse Current
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Peak Reverse Working Voltage
P_{PP}	Peak Pulse Power Dissipation
C_J	Junction Capacitance @ $V_R=0\text{V}, f=1\text{MHz}$
I_F	Forward Current
V_F	Forward Voltage @ I_F



● Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	CONDITION	Pin 3 to Pin 1 or Pin 2 (12V)			Pin 1 or Pin 2 to Pin 3 (7V)			UNIT
			Min	Typ	Max	Min	Typ	Max	
Peak Reverse Working Voltage	V_{RWM}	$T_a=25^{\circ}C$	-	-	12	-	-	7	V
Breakdown Voltage	V_{BR}	$I_T=1mA, T_a=25^{\circ}C$	13.3	-	-	7.5	-	-	V
Reverse Leakage Current	I_R	$V_R=V_{RWM}, T_a=25^{\circ}C$	-	-	1.0	-	-	2.0	μA
Clamping Voltage	V_C	$I_{PP}=5.0A, t_p=8/20\mu s$	-	-	20	-	-	10	V
		$I_{PP}=12.0A, t_p=8/20\mu s$	-	-	26	-	-	16	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$	-	-	75	-	-	75	pF
		$V_R=V_{RWM}, f=1MHz$	-	45	-	-	45	-	pF

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



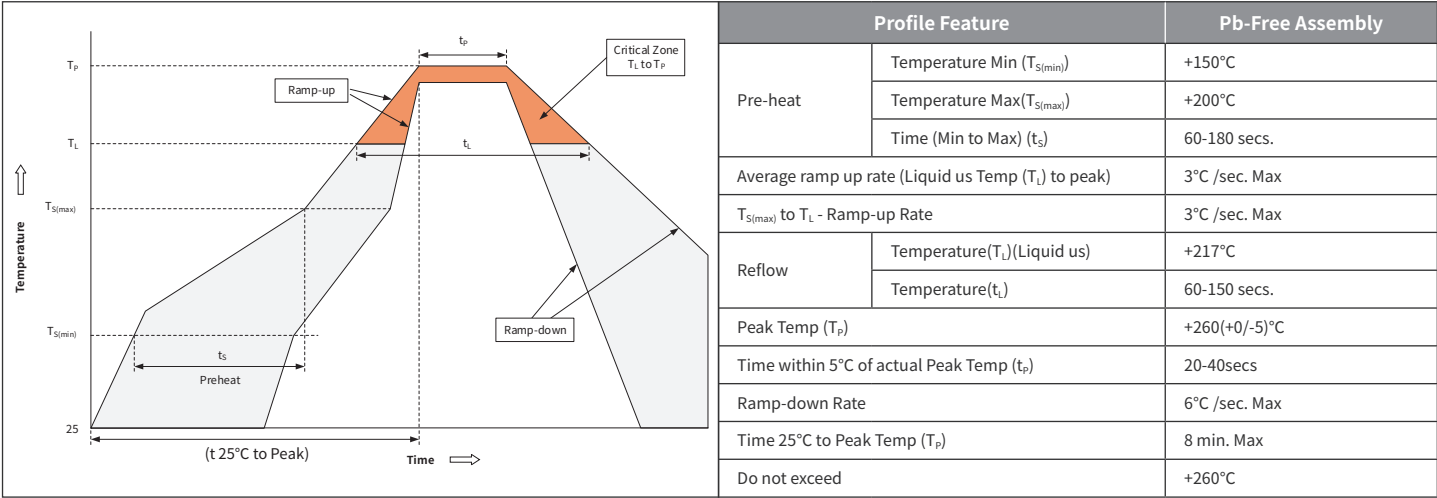
SM712

Bi-directional 7/12V Normal Capacitance ESD

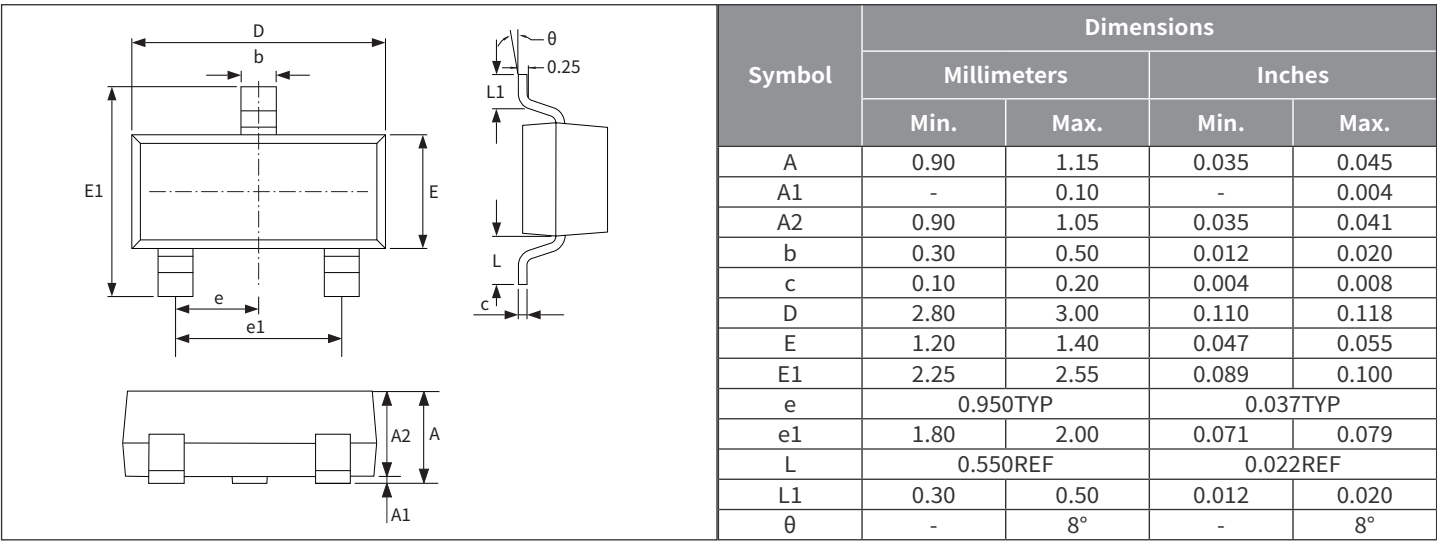
● Ordering Information

PREFERED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
SM712	SOT-23	2.90×2.40×1.025	7" REEL	3000

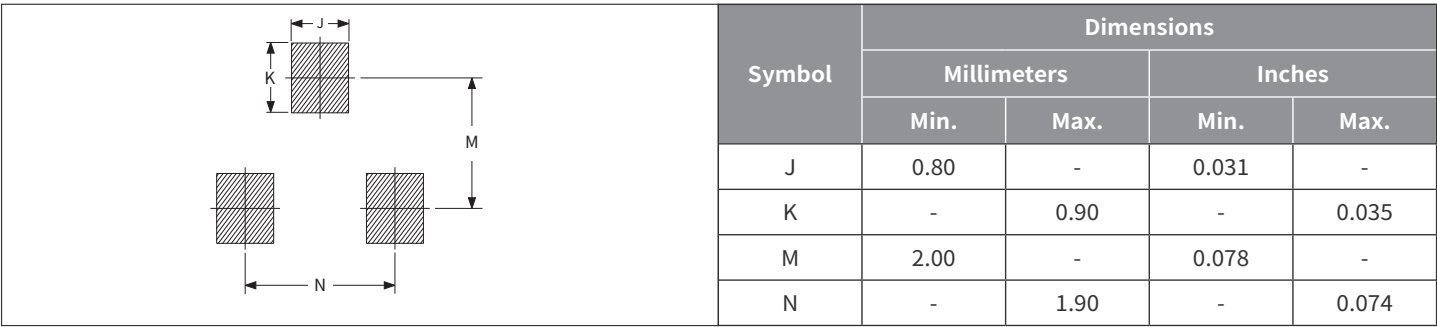
● Recommended Soldering Conditions



● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout



Note :
This soldering footprint is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.