SOT-23 Plastic-Encapsulate Diodes

Bi-direction ESD Protection Diode

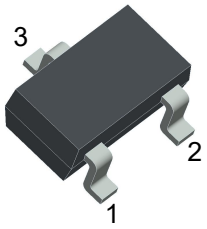
RoHS COMPLIANT

HALOGEN FREE

FEATURES

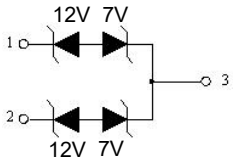
- ✧ 400 watts peak pulse power per line (tp=8/20us)
- ✧ Protects two -7V-12V line
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant
- ✧ Solid-state silicon avalanche technology

SOT- 23



MAIN APPLICATIONS

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



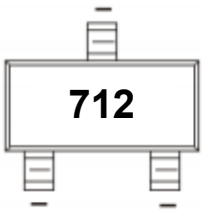
PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) ±30kV (air), +30kV (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 12A(8/20 us

MECHANICAL CHARACTERISTICS

- ✧ SOT-23 package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Weight 8 milligrams (approximate)
- ✧ Lead finish: lead free

MARKING CODE



MAXIMUM RATINGS (T_a=25℃

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Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20us waveform	'PPP	400	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	+/-30 +/-30	kV
Lead soldering temperature	TL	260 (10 sec.)	°C
Operating junction temperature range	TJ	-55 to+125	°C
Storage temperature range	TSTG	-55 to +150	°C

ESDB712M									
			Pins 1、Pin2 to Pin 3 (12V TVS)			Pins 3 to Pin 1、Pin2 (7V TVS)			
Parameter	Symbol	Conditions	Min	Typ	Max	Min	Typ	Max	Unit
Reverse stand-off voltage	VRWM				12			7	V
Reverse breakdown voltage	VBR	lT=1mA	13.3			7.5			V
Reverse leakage current	IR	VR = VRWM			1			1	uA
Clamping voltage	Vc	IPP®= 5A, tp = 8/20us		20	23		12	15	V
Clamping voltage	Vc	IPP①=12A, tp= 8/20us		23	26		15	18	V
Junction capacitance	Cj	VR=0V, f=1MHz			75			75	pF
		VR=VRWM, f=1MHz		45			45		PF

①Surge waveform: 8/20 us

Typical Characteristics

FIG.1:V- I curve characteristics (Bi-directional)

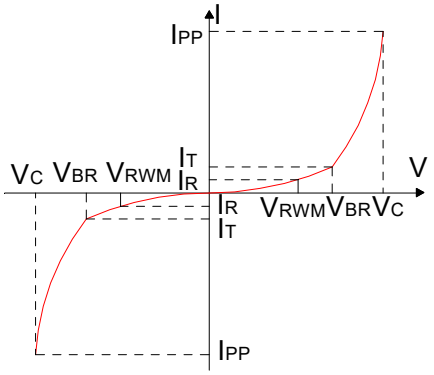


FIG.2: Pulse waveform (8/20μs)

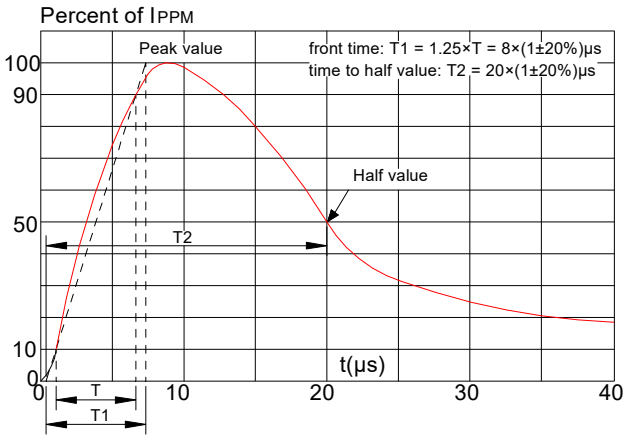


FIG.3: Pulse derating curve

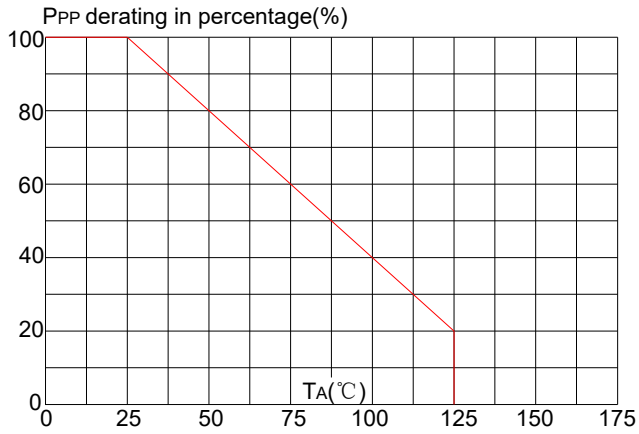
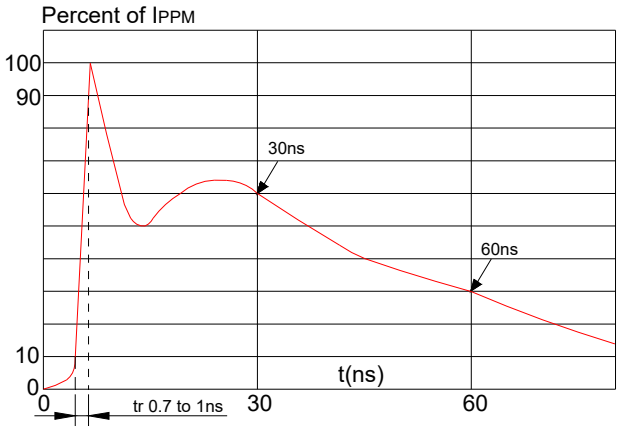
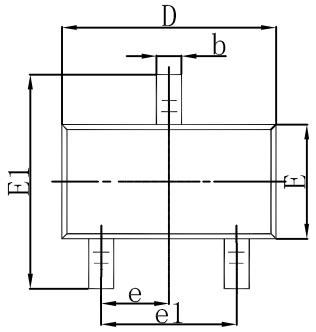
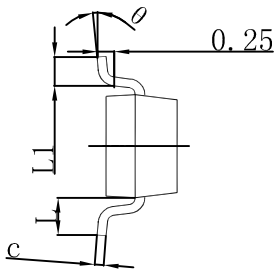


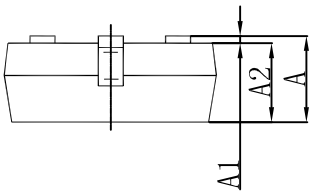
FIG.4: ESD clamping (20kV contact)



SOT-23 Package Outline Dimensions







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	° 8

SOT-23 Suggested Pad Layout

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.