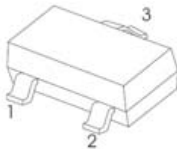
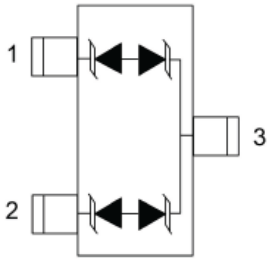
FEATURES

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



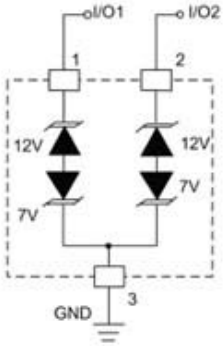
SOT-23



PIN Configuration

MAIN APPLICATIONS

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



Circuit Diagram

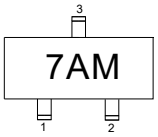
PROTECTION SOLUTION TO MEET

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

MECHANICAL CHARACTERISTICS

- ✧ SOT-23 package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Weight 8 milligrams (approximate)
- ✧ Quantity per reel: 3,000pcs
- ✧ Lead finish: lead free

MARKING CODE



ORDERING INFORMATION

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCIPTION
TESDB712M	SOT-23	3,000	7 inch reel pack

ABSOLUTE MAXIMUM RATINGS (T_A=25℃, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs waveform	P_{PP}	400	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 30 +/- 30	kV
Lead soldering temperature	T_L	260 (10 sec.)	℃
Operating junction temperature range	T_J	-55 to +125	℃
Storage temperature range	T_{STG}	-55 to +150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃)

TESDB712M									
			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	V_{RWM}				12			7	V
Reverse breakdown voltage	V_{BR}	I_T=1mA	13.3			7.5			V
Reverse leakage current	I_R	V_R = V_{RWM}			1			1	μA
Clamping voltage	V_C	I_{PP}①= 5A, t_P = 8/20μs		20	23		12	15	V
Clamping voltage	V_C	I_{PP}①=12A, t_P = 8/20μs		23	26		15	18	V
Junction capacitance	C_J	V_R=0V, f =1MHz			75			75	pF
		V_R=V_{RWM}, f=1MHz		45			45		pF

①Surge waveform: 8/20μs

RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25ºC, unless otherwise noted)

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

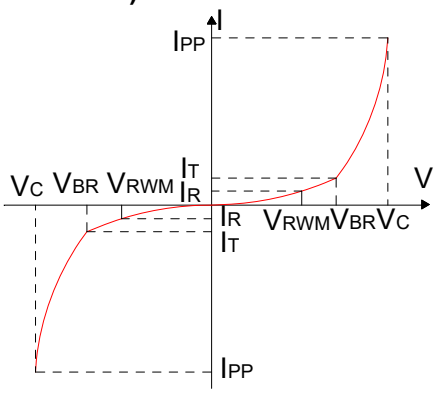


FIG.2: Pulse waveform (8/20μs)

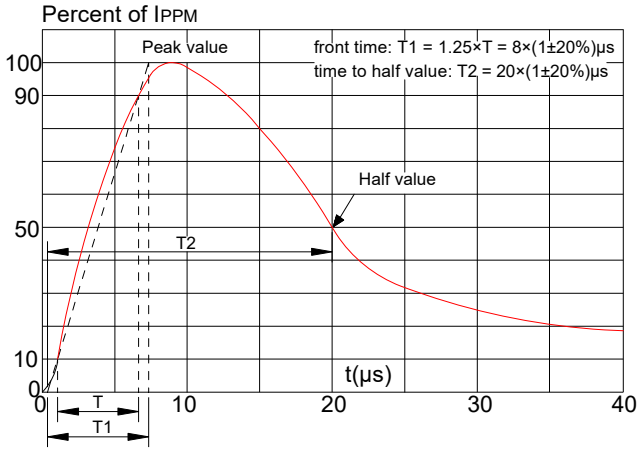


FIG.3: Pulse derating curve

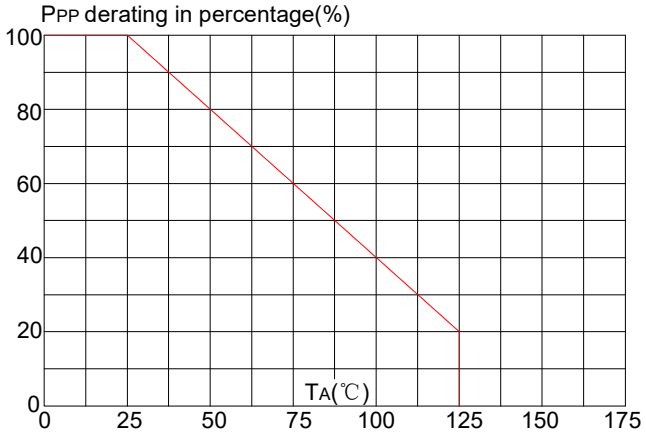
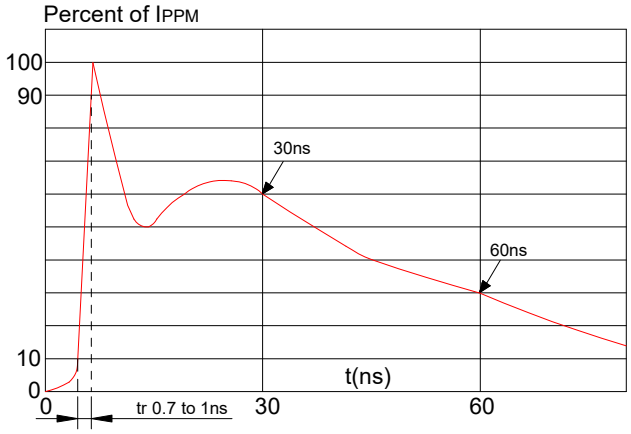
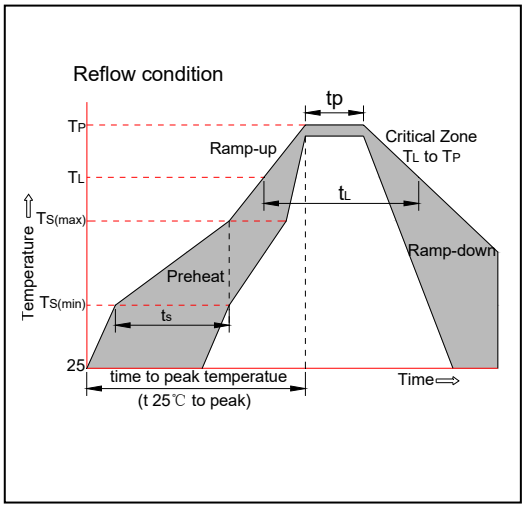


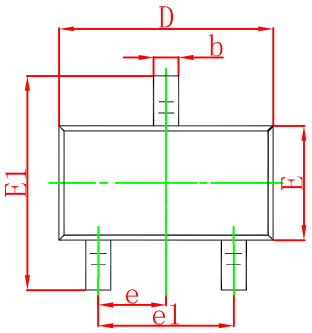
FIG.4: ESD clamping (30KV contact)

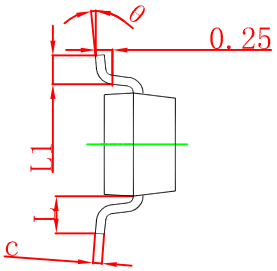


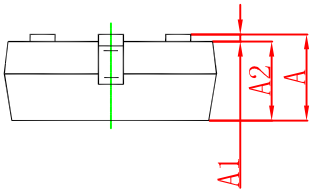
SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L)to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃



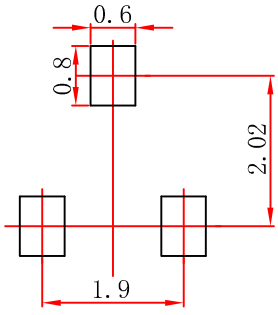






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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.