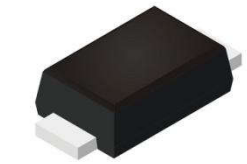
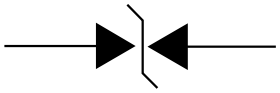
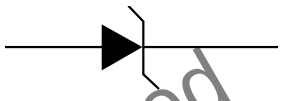
200W Surface Mount Transient Voltage Suppressors

Features





Bi-directional



Uni-directional

- Peak power dissipation 200W @10 x 1000 us Pulse
- Low profile package.
- Excellent clamping capability.
- Glass passivated junction.
- Fast response time: typically less than 1ps from 0 Volts to BV min
- Typical IR less than 1uA when VBR min above 10V.
- IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen free and RoHS compliant
- Lead-free finish

Mechanical Data

- **CASE:** SOD-123 Molded Plastic over glass passivated junction.
- **Mounting Position:** Any
- **Polarity:** Cathode band denotes uni-directional device, except bi-directional device.
- **Terminal:** Solder plated

Maximum Ratings And Characteristics @ 25°C

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1)	P_{PPM}	Min 200	W
Power Dissipation on Infinite Heat Sink at T_L=50°C	P_D	1.5	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	I_{PPM}	See Table 1	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2. 3)	I_{FSM}	20	A
Operating Junction Temperature Range	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.
2. Mounted on 5.0x5.0mm^2 (0.03mm thick) Copper Pads to each terminal.
3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

Electrical Specification @ Tam 25 ℃

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I_T	Breakdown Voltage Max. @ I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RMW}
(Uni)	(Bi)	(Uni)	(Bi)	V_{RMW}(V)	$V_{BR\ MIN}$(V)	$V_{BR\ MAX}$(V)	I_T (mA)	V_C(V)	I_{PP}(A)	I_R(uA)
AED5.0AL0	AED5.0CAL0	AE	WE	5	6.4	7	10	9.2	21.7	400
AED6.0AL0	AED6.0CAL0	AG	WG	6	6.67	7.37	10	10.3	19.4	400
AED6.5AL0	AED6.5CAL0	AK	WK	6.5	7.22	7.98	10	11.2	17.9	250
AED7.0AL0	AED7.0CAL0	AM	WM	7	7.78	8.6	10	12	16.7	100
AED7.5AL0	AED7.5CAL0	AP	WP	7.5	8.33	9.21	1	12.9	15.5	50
AED8.0AL0	AED8.0CAL0	AR	WR	8	8.89	9.83	1	13.6	14.7	25
AED8.5AL0	AED8.5CAL0	AT	WT	8.5	9.44	10.4	1	14.4	13.9	10
AED9.0AL0	AED9.0CAL0	AV	WV	9	10	11.1	1	15.4	13	5
AED10AL0	AED10CAL0	AX	WX	10	11.1	12.3	1	17	11.8	2
AED11AL0	AED11CAL0	AZ	WZ	11	12.2	13.5	1	18.2	11	2
AED12AL0	AED12CAL0	BE	XE	12	13.3	14.7	1	19.9	10.1	2
AED13AL0	AED13CAL0	BG	XG	13	14.4	15.9	1	21.5	9.3	1
AED14AL0	AED14CAL0	BK	XK	14	15.6	17.2	1	23.2	8.62	1
AED15AL0	AED15CAL0	BM	XM	15	16.7	18.5	1	24.4	8.2	1
AED16AL0	AED16CAL0	BP	XP	16	17.8	19.7	1	26	7.69	1
AED17AL0	AED17CAL0	BR	XR	17	18.9	20.9	1	27.6	7.25	1
AED18AL0	AED18CAL0	BT	XT	18	20	22.1	1	29.2	6.85	1
AED20AL0	AED20CAL0	BV	XV	20	22.2	24.5	1	32.4	6.17	1
AED22AL0	AED22CAL0	BX	XX	22	24.4	26.9	1	35.5	5.63	1
AED24AL0	AED24CAL0	BZ	XZ	24	26.7	29.5	1	38.9	5.12	1
AED26AL0	AED26CAL0	CE	YE	26	28.9	31.9	1	42.1	4.75	1
AED28AL0	AED28CAL0	CG	YG	28	31.1	34.4	1	45.4	4.41	1
AED30AL0	AED30CAL0	CK	YK	30	33.3	36.8	1	48.4	4.13	1
AED33AL0	AED33CAL0	CM	YM	33	36.7	40.6	1	53.3	3.75	1
AED36AL0	AED36CAL0	CP	YP	36	40	44.2	1	58.1	3.44	1
AED40AL0	AED40CAL0	CR	YR	40	44.4	49.1	1	64.5	3.1	1
AED43AL0	AED43CAL0	CT	YT	43	47.8	52.8	1	69.4	2.88	1
AED45AL0	AED45CAL0	CV	YV	45	50	55.3	1	72.7	2.75	1
AED48AL0	AED48CAL0	CX	YX	48	53.3	58.9	1	77.4	2.58	1
AED51AL0	AED51CAL0	CZ	YZ	51	56.7	62.7	1	82.4	2.43	1
AED54AL0	AED54CAL0	RE	ZE	54	60	66.3	1	87.1	2.3	1
AED58AL0	AED58CAL0	RG	ZG	58	64.4	71.2	1	93.6	2.14	1
AED60AL0	AED60CAL0	RK	ZK	60	66.7	73.7	1	96.8	2.07	1
AED64AL0	AED64CAL0	RM	ZM	64	71.1	78.6	1	103	1.94	1

Notes:

1. For Bi-directional type having V_{RWM} of 10 Volts and less, the I_R limit is double
2. For parts with A, the V_{BR} is ± 5%.

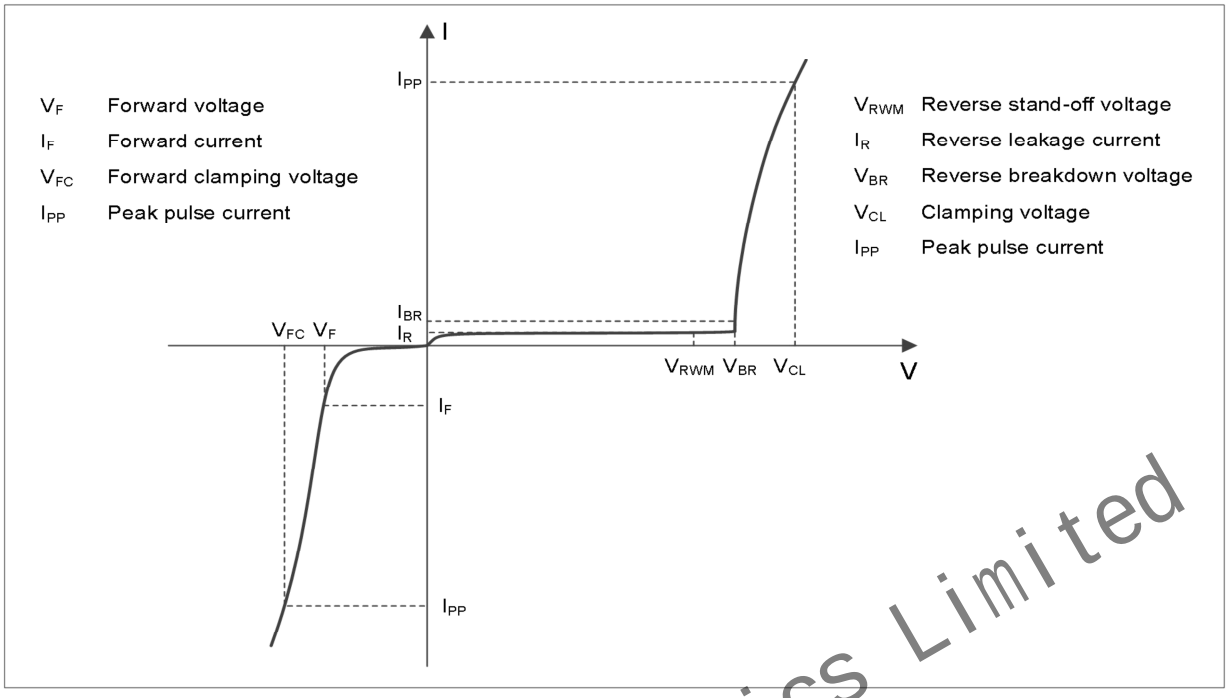
Electrical Specification @ Tam 25 ℃

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I_T	Breakdown Voltage Max. @ I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RMW}
(Uni)	(Bi)	(Uni)	(Bi)	V_{RMW}(V)	$V_{BR\ MIN}$(V)	$V_{BR\ MAX}$(V)	I_T (mA)	V_C(V)	I_{PP}(A)	I_R(uA)
AED70AL0	AED70CAL0	RP	ZP	70	77.8	86	1	113	1.77	1
AED75AL0	AED75CAL0	RR	ZR	75	83.3	92.1	1	121	1.65	1
AED78AL0	AED78CAL0	RT	ZT	78	86.7	95.8	1	126	1.59	1
AED85AL0	AED85CAL0	RV	ZV	85	94.4	104	1	137	1.55	1
AED90AL0	AED90CAL0	RX	ZX	90	100	111	1	146	1.37	1
AED100AL0	AED100CAL0	RZ	ZZ	100	111	123	1	162	1.23	1
AED110AL0	AED110CAL0	SE	VE	110	122	135	1	177	1.13	1
AED120AL0	AED120CAL0	SG	VG	120	133	147	1	193	1.04	1
AED130AL0	AED130CAL0	SK	VK	130	144	159	1	209	0.96	1
AED150AL0	AED150CAL0	SM	VM	150	167	185	1	243	0.82	1
AED160AL0	AED160CAL0	SP	VP	160	178	197	1	259	0.77	1
AED170AL0	AED170CAL0	SR	VR	170	189	209	1	275	0.73	1
AED180AL0	AED180CAL0	ST	VT	180	201	222	1	292	0.68	1
AED200AL0	AED200CAL0	SV	VV	200	224	247	1	324	0.62	1
AED220AL0	AED220CAL0	SX	VX	220	246	272	1	356	0.56	1

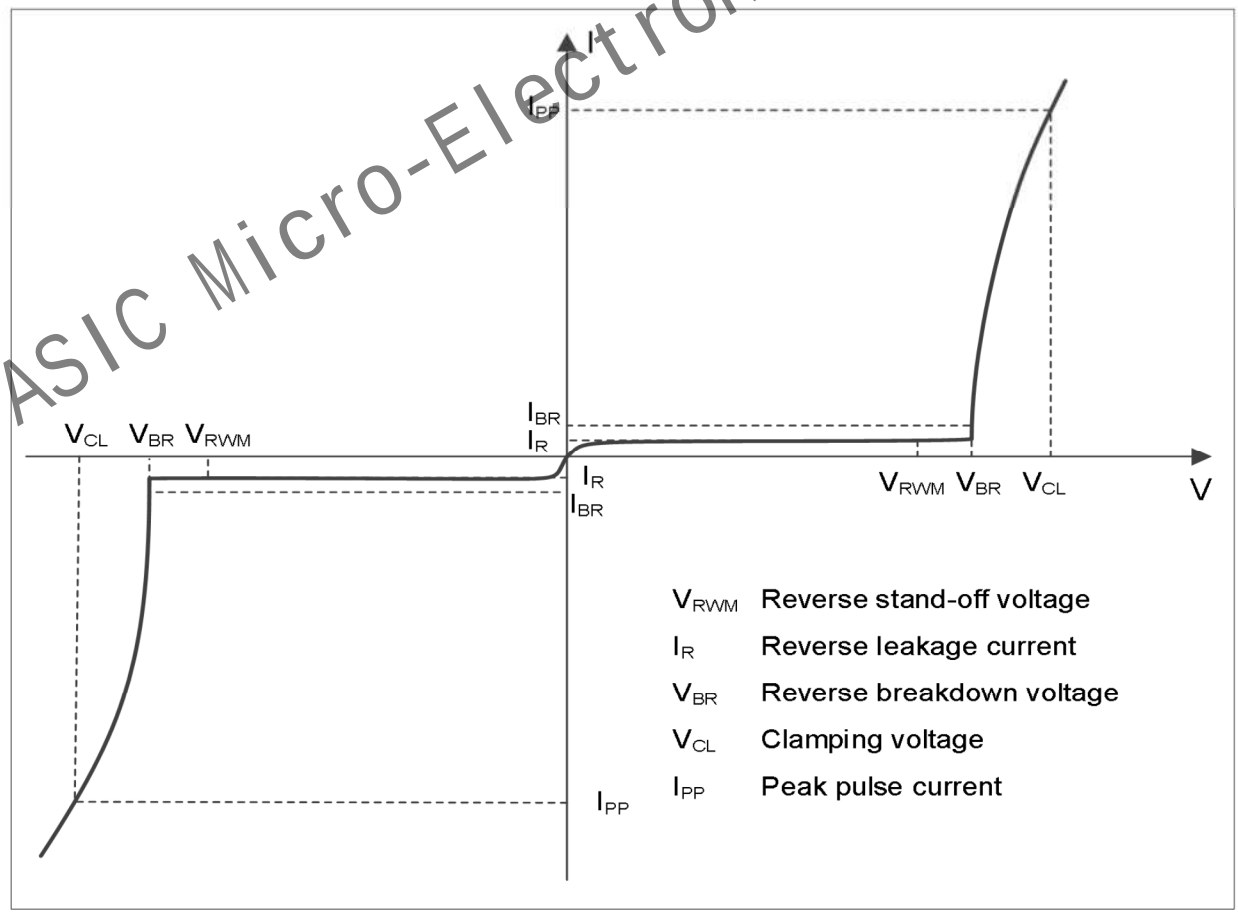
Notes:

1. For Bi-directional type having V_{RWM} of 10 Volts and less, the I_R limit is double
2. For parts with A, the V_{BR} is ± 5%.

Electrical Characteristics （TA=25°C unless otherwise noted）



Definitions of electrical characteristics (Uni-directional)



Definitions of electrical characteristics (Bi-directional)

Electrical Characteristics （TA=25°C unless otherwise noted）

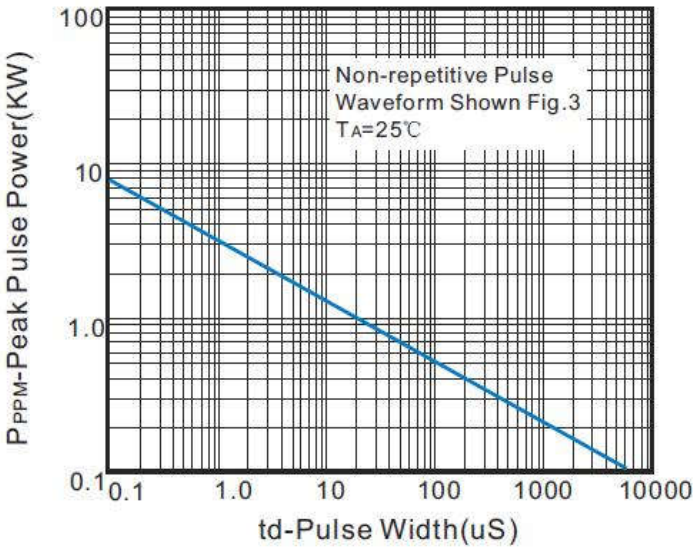


Fig.1 Peak Pulse Power Rating

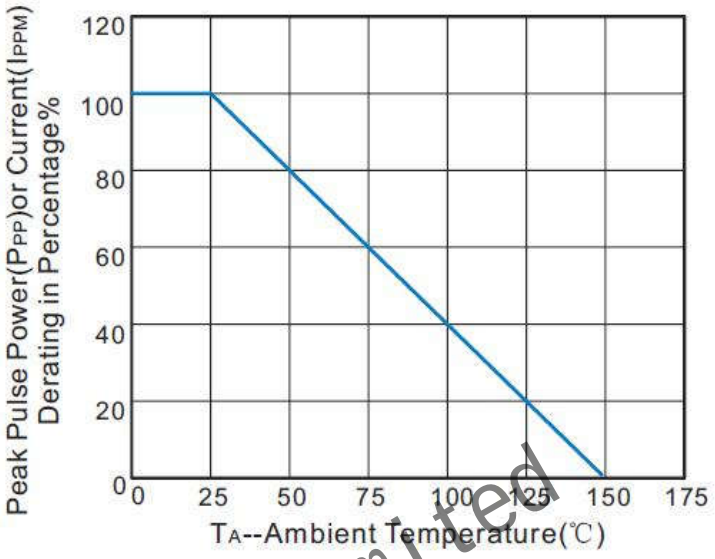


Fig.2 Pulse Derating Cure

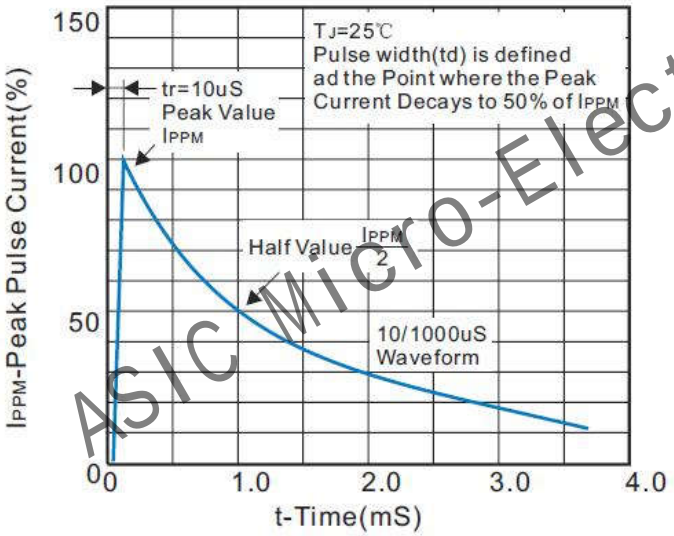


Fig.3 Pulse Waveform

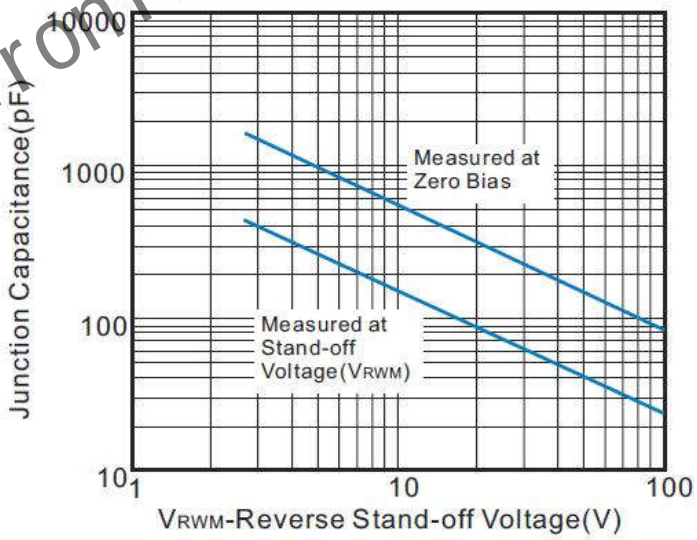
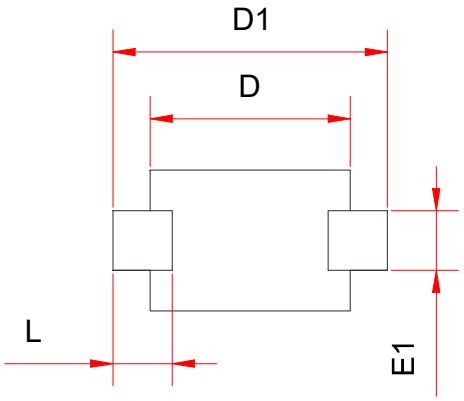


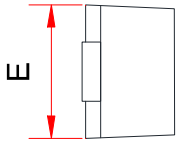
Fig.4 Typical Junction Capacitance

Package outline dimensions （Unit:mm）

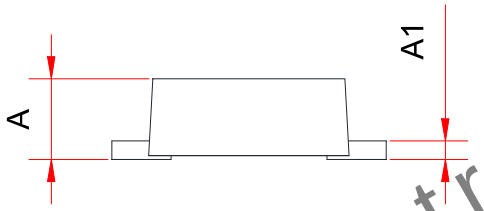
SOD-123FL



Bottom View



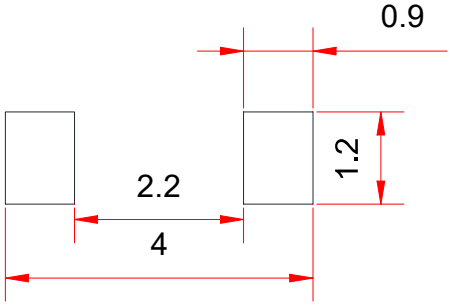
Side View



Side View

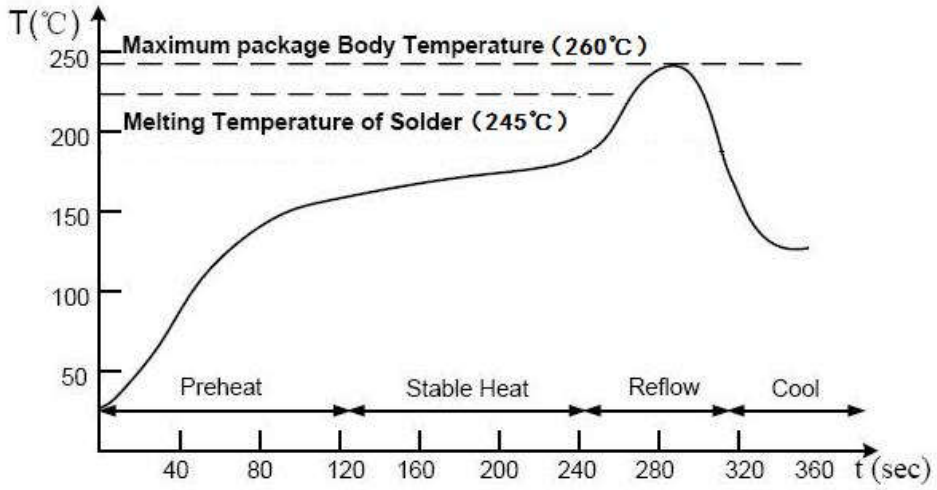
Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.7	1.04	1.4
A1	0.05	0.15	0.3
D	2.5	2.7	3.05
D1	3.3	3.675	4.05
E	1.38	1.675	2
E1	0.5	0.8	1.2
L	0.25	0.8	1.1

Recommend land pattern (Unit: mm)



Notes:
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

Suggested Soldering Temperature Profile



Note

Recommended reflow methods:IR,vapor phase oven,hot air oven,wave solder. The device can be exposed to a maximum temperature of 260° C for10seconds. Devices can be cleaned using standard industry method sand solvents. If reflow temperatures exceed there commended profile, devices may not meet the performance requirements.