

SMF SERIES

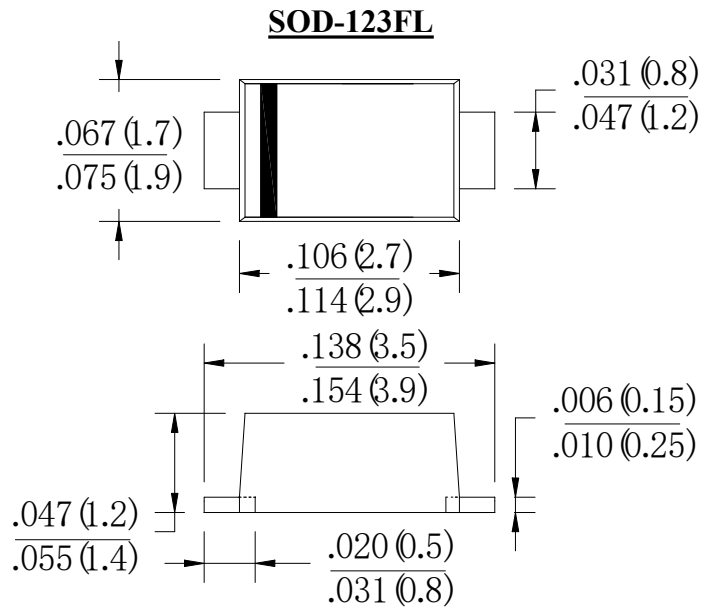
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODES

FEATURE

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 200W surge capability at 10/1000us waveform, Duty cycle:0.01%
- Excellent clamping capability
- Low zener impedance
- Fast response time: Typically less than 1.0ps from 0 volts to BV min.
- Typical IR less than 1 μ A above 13V
- High temperature soldering guaranteed: 260°C/10 seconds at terminals.

MECHANICAL DATA

- Case: JEDEC SOD-123FL Molded Plastic
- Epoxy: UL94V-0 rate flame retardant
- Lead: MIL-STD- 202E, Method 208 guaranteed
- Polarity:Color band denotes cathode end
- Mounting position: Any



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise stated.

Single-phase, half-wave, 60HZ, resistive or inductive load. For capacitive load, derate current by 20%

Type Number	SYM BOL	Value	units
Peak Power Dissipation at Ta=25°C, Tp=1ms (note 1)	P_{PPM}	Minimum 200	Watts
Steady State Power Dissipation .375" lead length at T _L =75°C (note 2)	P_D	1.0	Watts
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (note 3)	I_{FSM}	20	Amps
Storage Temperature	T_{STG}	-55 to +150	°C
Operating Junction Temperature	T_J	-55 to +150	°C

Note:

1. Non-repetitive Current Pulse Per Fig.3 and Derated above Ta=25°C Per Fig.2 .
2. Mounted on Copper Pad Area of 0.2×0.2" (5×5mm) Per Fig.5 .
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minutes Maximum.

Devices for Bipolar Applications

1. For Bidirectional Use CA Suffix for Types SMF 5.0 thru Types SMF 220.
2. Electrical Characteristics Apply in Both Directions.

ELECTRICAL CHARACTERISTICS(TA=25°C unless otherwise noted)

Device		Working Peak Reverse Voltage (volts)	Breakdown Voltage		Test Current@IT (mA)	Maximum Reverse Leakage At VWM ID(μA)(2)	Maximum Peak Pulse Surge Current IPPM (Amps)(3)	Maximum Clamping Voltage at IPPM VC(Volts)
			VBR(volts)(1)					
UNI	BI		Min	Max				
SMF 5.0A	SMF 5.0CA	5	6.40	7.00	10	400	21.74	9.2
SMF 6.0A	SMF 6.0CA	6	6.67	7.37	10	400	19.42	10.3
SMF 6.5A	SMF 6.5CA	6.5	7.22	7.98	10	250	17.86	11.2
SMF 7.0A	SMF 7.0CA	7	7.78	8.60	10	100	16.67	12
SMF 7.5A	SMF 7.5CA	7.5	8.33	9.21	1	50	15.50	12.9
SMF 8.0A	SMF 8.0CA	8	8.89	9.83	1	25	14.71	13.6
SMF 8.5A	SMF 8.5CA	8.5	9.44	10.4	1	10	13.89	14.4
SMF 9.0A	SMF 9.0CA	9	10.0	11.1	1	10	12.99	15.4
SMF 10A	SMF 10CA	10	11.1	12.3	1	5	11.76	17
SMF 11A	SMF 11CA	11	12.2	13.5	1	5	10.99	18.2
SMF 12A	SMF 12CA	12	13.3	14.7	1	5	10.05	19.9
SMF 13A	SMF 13CA	13	14.4	15.9	1	5	9.30	21.5
SMF 14A	SMF 14CA	14	15.6	17.2	1	1	8.62	23.2
SMF 15A	SMF 15CA	15	16.7	18.5	1	1	8.20	24.4
SMF 16A	SMF 16CA	16	17.8	19.7	1	1	7.69	26
SMF 17A	SMF 17CA	17	18.9	20.9	1	1	7.25	27.6
SMF 18A	SMF 18CA	18	20.0	22.1	1	1	6.85	29.2
SMF 20A	SMF 20CA	20	22.2	24.5	1	1	6.17	32.4
SMF 22A	SMF 22CA	22	24.4	26.9	1	1	5.63	35.5
SMF 24A	SMF 24CA	24	26.7	29.5	1	1	5.14	38.9
SMF 26A	SMF 26CA	26	28.9	31.9	1	1	4.75	42.1
SMF 28A	SMF 28CA	28	31.1	34.4	1	1	4.41	45.4
SMF 30A	SMF 30CA	30	33.3	36.8	1	1	4.13	48.4
SMF 33A	SMF 33CA	33	36.7	40.6	1	1	3.75	53.3
SMF 36A	SMF 36CA	36	40.0	44.2	1	1	3.44	58.1
SMF 40A	SMF 40CA	40	44.4	49.1	1	1	3.10	64.5
SMF 43A	SMF 43CA	43	47.8	52.8	1	1	2.88	69.4
SMF 45A	SMF 45CA	45	50.0	55.3	1	1	2.75	72.7
SMF 48A	SMF 48CA	48	53.3	58.9	1	1	2.58	77.4
SMF 51A	SMF 51CA	51	56.7	62.7	1	1	2.43	82.4
SMF 54A	SMF 54CA	54	60.0	66.3	1	1	2.30	87.1
SMF 58A	SMF 58CA	58	64.4	71.2	1	1	2.14	93.6
SMF 60A	SMF 60CA	60	66.7	73.7	1	1	2.07	96.8
SMF 64A	SMF 64CA	64	71.1	78.6	1	1	1.94	103
SMF 70A	SMF 70CA	70	77.8	86.0	1	1	1.77	113

SMF 75A	SMF 75CA	75	83.3	92.1	1	1	1.65	121
SMF 78A	SMF 78CA	78	86.7	95.8	1	1	1.59	126
SMF 85A	SMF 85CA	85	94.4	104	1	1	1.46	137
SMF 90A	SMF 90CA	90	100	111	1	1	1.37	146
SMF 100A	SMF 100CA	100	111	123	1	1	1.23	162
SMF 110A	SMF 110CA	110	122	135	1	1	1.13	177
SMF 120A	SMF 120CA	120	133	147	1	1	1.04	193
SMF 130A	SMF 130CA	130	144	159	1	1	0.96	209
SMF 150A	SMF 150CA	150	167	185	1	1	0.82	243
SMF 160A	SMF 160CA	160	178	197	1	1	0.77	259
SMF 170A	SMF 170CA	170	189	209	1	1	0.73	275
SMF 180A	SMF 180CA	180	201	222	1	1	0.68	292
SMF 190A	SMF 190CA	190	209	243	1	1	0.65	308
SMF 200A	SMF 200CA	200	224	247	1	1	0.62	324
SMF 210A	SMF 210CA	210	231	268	1	1	0.59	340
SMF 220A	SMF 220CA	220	246	272	1	1	0.56	356

Note:

1. VBR measured after IT applied for 300us, IT=square wave pulse or equivalent.
2. Surge current waveform per Figure 3 and derate per Figure 2.
3. All terms and symbols are consistent with ANSI/IEEE C62.35.

RATING AND CHARACTERISTIC CURVES

FIG.1-PEAK PULSE POWER RATING CURVE

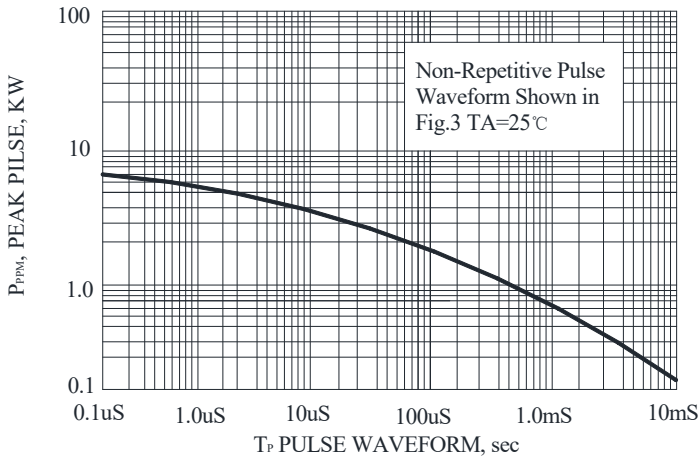


FIG.2-PULSE DERATING CURVE

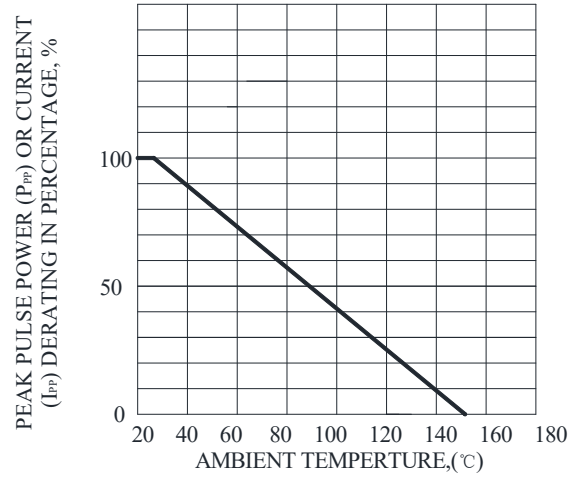


FIG.3-PULSE WAVEFORM

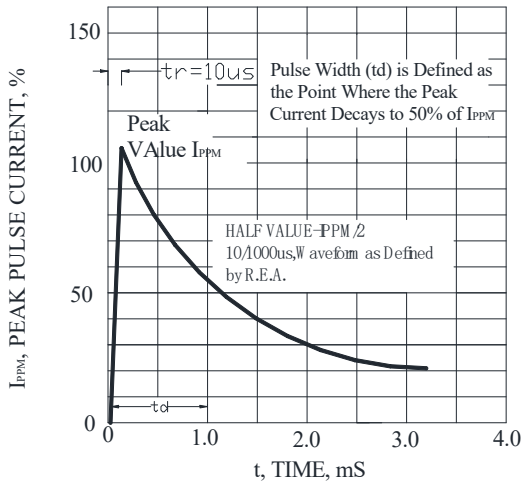


FIG.4- TYPICAL JUNCTION CAPACITANCE

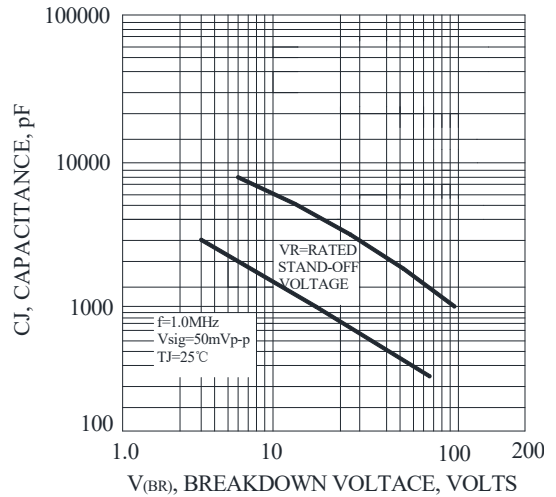


FIG.5- STEADY STATE POWER DERATING CURVE

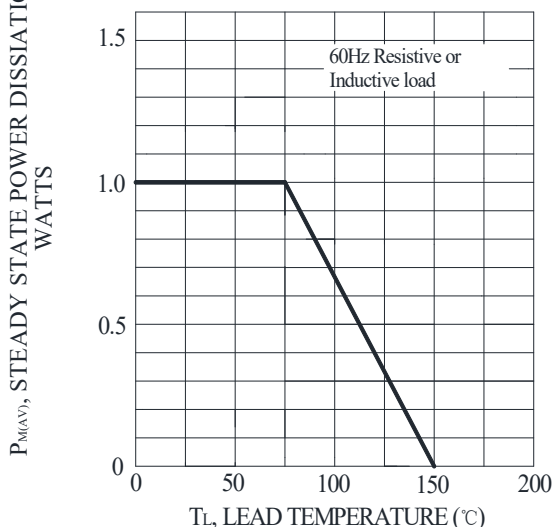
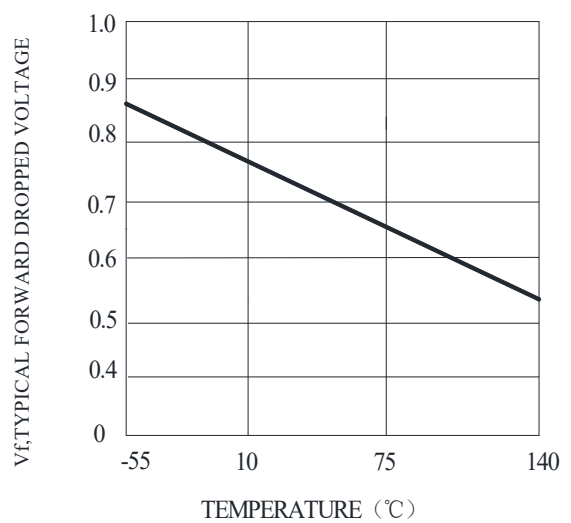
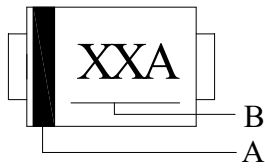


FIG.6-FORWARD VOLTAGE



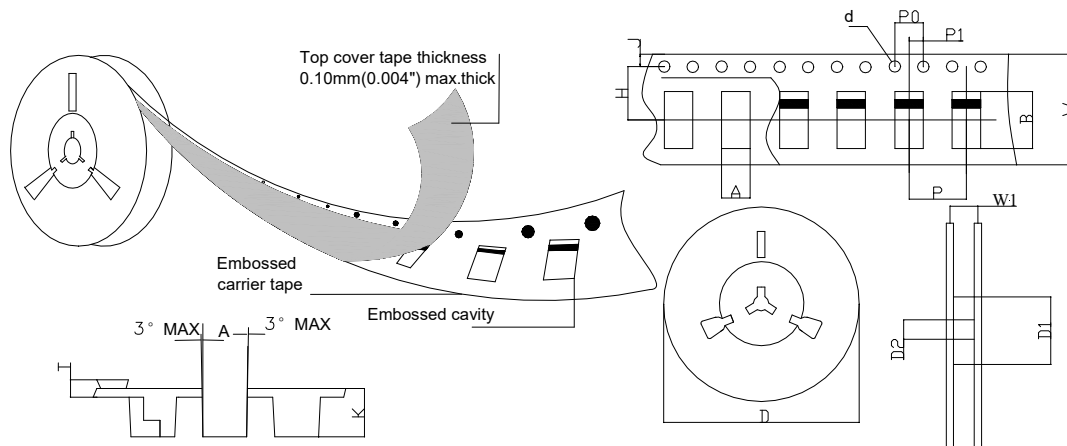
Marking and packaging illustration

1、Marking



SYMBOL	Explanation
A	Color Band Denotes Cathode
B	Product name

2、Packaging



SPECIFICATIONS mm(inch)		PACKAGE
SYMBOL	ITEM	SOD-123FL
Carrier width	A	2.1(0.083)Max
Carrier length	B	4.0(0.157)Max
Sprocket hole	d	ø1.55(0.061)Typ
Reel outer diameter	D	177.8(7)Typ
Reel inner diameter	D1	50.0(1.969)Min
Feed hole diameter	D2	13.0(0.512)Typ
Sprocket hole position	J	1.75(0.069)Typ
Punch hole position	H	3.50(0.138)Typ
Carrier depth	K	1.60(0.063)Typ
Punch hole pitch	P	4.00(0.157)Typ
Sprocket hole pitch	P0	4.00(0.157)Typ
Embossment center	P1	2.00(0.079)Typ
Overall tape thickness	T	0.25(0.098)Typ
Tape width	W	8.15(0.321)Typ
Reel width	W1	10.5(0.413)Min