SMF4L Series
Transient Voltage Suppressor

Working Voltage： 5.0 to 250Volts
Peak Pulse Power: 400 Watts

Features

- ◇ Maximun 400 W peak pulse capability with a 10/1000 μs waveform,repetitive rate(duty cycle):0.01%
- ◇ Low inductance,excellent clamping capability
- ◇ For surface mounted applications to optimize board space
- ◇ Typical failure mode is short from over-specifice Voltage or current
- ◇ Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- ◇ IEC-61000-4-2 ESD 30KV(Air),30KV(Contact)
- ◇ ESD protection of data lines in accordance with IEC61000-4-2
- ◇ EFT protection of data lines in accordance with IEC-61000-4-4
- ◇ Fast response time:typically less than 1.0ns from 0 volts to VBRmin.
- ◇ High temperature soldering:260℃/30seconds at terminals
- ◇ Glass passivated junction
- ◇ Built-in strain relief
- ◇ Halogen-free and RoHS compliant

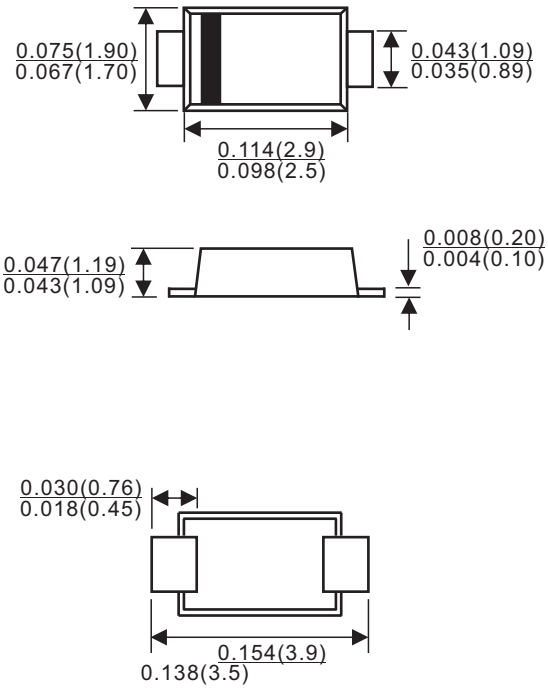
Applications

- ◇ The protection of I/O interfaces,VCC bus and other Vulnerable circuit used in cellular phones,portable devices,business machines,power supplies and other consumer applications.

Mechanical Data

- ◇ Moisture Sensitivity: MSL Level 1,per J-STD-020
- ◇ Terminals:Matte Tin lead-free plated Finish. Solderable per MIL-STD-202 Method 208
- ◇ Case Material： Molded Plastic; Molding compound meet UL Flammability ClassificationRating 94V-0
- ◇ Case:JEDEC SOD-123FL

SOD-123FL



Dimensions in inches and(millimeters)

ODERING PACK INFORMATION

Part No.	Packge	Packing (pcs/reel)	Box Size L×W×H(mm)	Quatity (pcs/box)	Carton Size L×W×H(mm)	Quatity (pcs/carton)
SMFxxxA/CA	SOD-123FL	3000	210×210×210	45000	420×420×210	180000

MAXIMUM RATING CHARACTERISTICS

Ratings at 25℃ ambient tepmerature unless otherwise specified.

PARAMETER	SYMBOL	VALUE	UNITS
Peak power dissipation with a 10/1000 μs waveform(1)(3)	P_{PP}	400	W
Peak power dissipation with a 8/20 μs waveform(1)	P_{PP}	2000	W
Peak pulse current with a 10/1000 μs waveform(1)	I_{PP}	See next table	A
Peak forward surge current,8.3ms single half sine-wave unidirectional only(2)	I_{FSM}	30	A
Maximum instantaneous forward voltage at 25A for unidirectional only	V_F	3.5	V
Thermal resistance Junction to Ambient	$R_{\Theta JA}$	220	℃/W
Thermal resistance Junction to Leadd	$R_{\Theta JL}$	100	℃/W
Junction temperature	T_J	150	℃
Storage temperature range	T_{STG}	-55~150	℃

Note:

(1)Non-repetitive current pulse per Fig.3 and derated above ETA=25℃ per Fig.1

(2)Measured on 8.3ms single half sine-wave or equivalent auqare wave,duty cycle=4 pulses per minute maximum

ELELTRICAL CHARACTERISTICS

Part Number		Marking Code		Breakdown Voltage V_{BR}(Volts)@I_T		Test Current I_T(mA)	Reverse Stand off Voltage V_R(V)	Maximum Reverse Leakage @V_R I_R(μ A)	Maximum Peak Pulse Curreent I_{PP}(A)	Maximum Clamping Voltage @I_{PP} V_C(V)
Uni-directional	Bi-directional	Uni-directional	Bi-directional	Min	Max					
SMF4L5.0A	SMF4L5.0CA	KE	AE	6.40	7.00	10	5.0	800	43.48	9.2
SMF4L6.0A	SMF4L6.0CA	KG	AG	6.67	7.37	10	6.0	800	38.83	10.3
SMF4L6.5A	SMF4L6.5CA	KK	AK	7.22	7.98	10	6.5	500	35.71	11.2
SMF4L7.0A	SMF4L7.0CA	KM	AM	7.78	8.60	10	7.0	200	33.33	12.0
SMF4L7.5A	SMF4L7.5CA	KP	AP	8.33	9.21	1	7.5	100	31.01	12.9
SMF4L8.0A	SMF4L8.0CA	KR	AR	8.89	9.83	1	8.0	50	29.41	13.6
SMF4L8.5A	SMF4L8.5CA	KT	AT	9.44	10.40	1	8.5	20	27.78	14.4
SMF4L9.0A	SMF4L9.0CA	KV	AV	10.00	11.10	1	9.0	10	25.97	15.4
SMF4L10A	SMF4L10CA	KX	AX	11.10	12.30	1	10	5	23.53	17.0
SMF4L11A	SMF4L11CA	KZ	AZ	12.20	13.50	1	11	1	21.98	18.2
SMF4L12A	SMF4L12CA	LE	BE	13.30	14.70	1	12	1	20.10	19.9
SMF4L13A	SMF4L13CA	LG	BG	14.40	15.90	1	13	1	18.60	21.5
SMF4L14A	SMF4L14CA	LK	BK	15.60	17.20	1	14	1	17.24	23.2
SMF4L15A	SMF4L15CA	LM	BM	16.70	18.50	1	15	1	16.39	24.4
SMF4L16A	SMF4L16CA	LP	BP	17.80	19.70	1	16	1	15.38	26.0
SMF4L17A	SMF4L17CA	LR	BR	18.90	20.90	1	17	1	14.49	27.6
SMF4L18A	SMF4L18CA	LT	BT	20.00	22.10	1	18	1	13.70	29.2
SMF4L20A	SMF4L20CA	LV	BV	22,20	24.50	1	20	1	12.35	32.4
SMF4L22A	SMF4L22CA	LX	BX	24.40	26.90	1	22	1	11.27	35.5
SMF4L24A	SMF4L24CA	LZ	BZ	26.70	29.50	1	24	1	10.28	38.9
SMF4L26A	SMF4L26CA	ME	CE	28.90	31.90	1	26	1	9.50	42.1
SMF4L28A	SMF4L28CA	MG	CG	31.10	34.40	1	28	1	8.81	45.4
SMF4L30A	SMF4L30CA	MK	CK	33.30	36.80	1	30	1	8.26	48.4
SMF4L33A	SMF4L33CA	MM	CM	36.70	40.60	1	33	1	7.50	53.3
SMF4L36A	SMF4L36CA	MP	CP	40.00	44.20	1	36	1	6.88	58.1
SMF4L40A	SMF4L40CA	MR	CR	44.40	49.10	1	40	1	6.20	64.5
SMF4L43A	SMF4L43CA	MT	CT	47.80	52.80	1	43	1	5.76	69.4
SMF4L45A	SMF4L45CA	MV	CV	50.00	55.30	1	45	1	5.50	72.7
SMF4L48A	SMF4L48CA	MX	CX	53.30	58.90	1	48	1	5.17	77.4
SMF4L51A	SMF4L51CA	MZ	CZ	56.70	62.70	1	51	1	4.85	82.4
SMF4L54A	SMF4L54CA	NE	DE	60.00	66.30	1	54	1	4.59	87.1
SMF4L58A	SMF4L58CA	NG	DG	64.40	71.20	1	58	1	4.27	93.6
SMF4L60A	SMF4L60CA	NK	DK	66.70	73.70	1	60	1	4.13	96.8
SMF4L64A	SMF4L64CA	NM	DM	71.10	78.60	1	64	1	3.88	103.0
SMF4L70A	SMF4L70CA	NP	DP	77.80	86.00	1	70	1	3.54	113.0
SMF4L75A	SMF4L75CA	NR	DR	83.30	92.10	1	75	1	3.31	121.0
SMF4L78A	SMF4L78CA	NT	DT	86.70	95.80	1	78	1	3.17	126.0
SMF4L85A	SMF4L85CA	NV	DV	94.40	104.00	1	85	1	2.92	137.0
SMF4L90A	SMF4L90CA	NX	DX	100.00	111.00	1	90	1	2.74	146.0
SMF4L100A	SMF4L100CA	NZ	DZ	111.00	123.00	1	100	1	2.47	162.0
SMF4L110A	SMF4L110CA	OE	EE	122.00	135.00	1	110	1	2.26	177.0
SMF4L120A	SMF4L120CA	OG	EG	133.00	147.00	1	120	1	2.07	193.0
SMF4L130A	SMF4L130CA	OK	EK	144.00	159.00	1	130	1	1.91	209.0
SMF4L150A	SMF4L150CA	OM	EM	167.00	185.00	1	150	1	1.65	243.0
SMF4L160A	SMF4L160CA	OP	EP	178.00	197.00	1	160	1	1.54	259.0
SMF4L170A	SMF4L170CA	OR	ER	189.00	209.00	1	170	1	1.45	275.0
SMF4L180A	SMF4L180CA	OT	ET	201.00	222.00	1	180	1	1.37	291.6
SMF4L188A	SMF4L188CA	OV	EV	209.00	231.00	1	188	1	1.32	304.0
SMF4L200A	SMF4L200CA	OX	EX	224.00	247.00	1	200	1	1.23	324.0
SMF4L220A	SMF4L220CA	OZ	EZ	246.00	272.00	1	220	1	1.12	356.0
SMF4L250A	SMF4L250CA	PE	FE	279.00	309.00	1	250	1	0.99	405.0

Note:

1. VBR measured after IT applied for 300μs, IT = square wave pulse or equivalent.
2. Surge current waveform per 10/1000μs exponential wave and derated per Fig.2.
3. All terms and symbols are consistent with ANSI/IEEE C62.35.

RATING AND CHARACTERISTICS CURVES

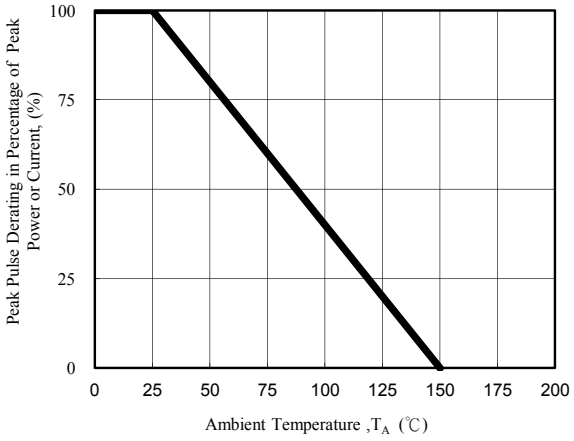


Fig. 1 - Pulse Derating Curve

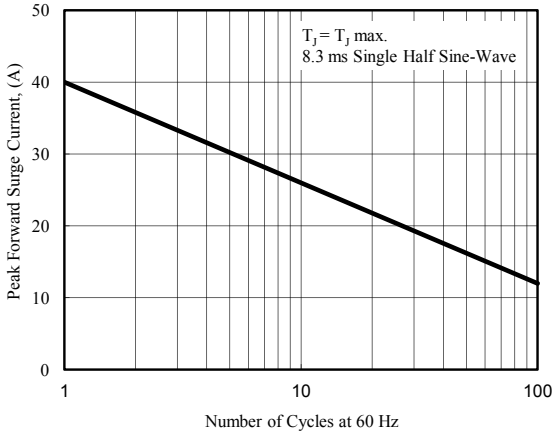


Fig. 2 - Maximum Non-Repetitive Surge Current

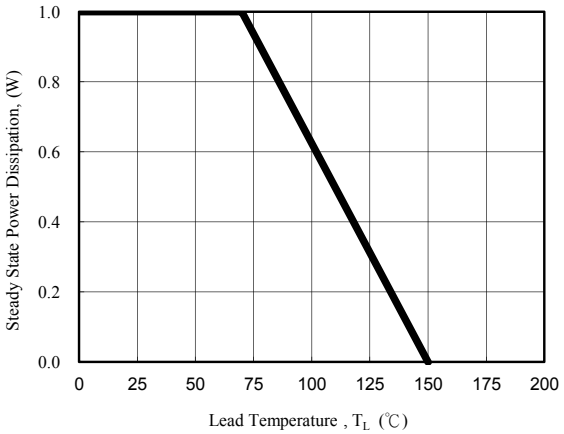


Fig. 3 - Steady State Power Derating Curve

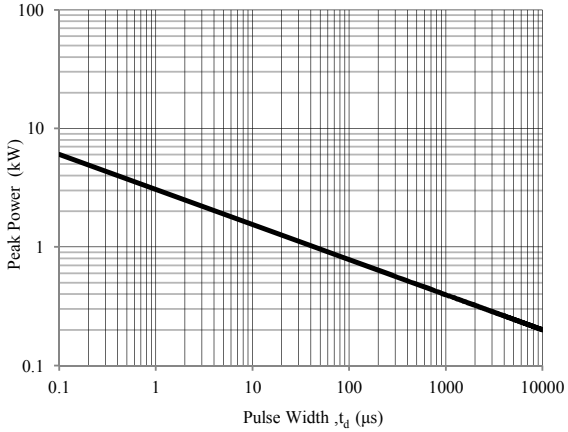


Fig. 4 - Peak Pulse Power Rating Curve

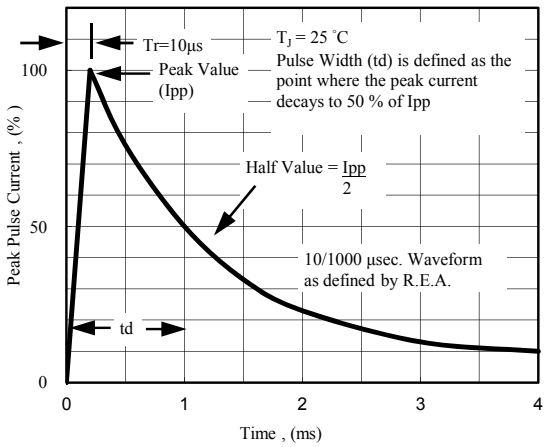


Fig. 5 - Pulse Waveform

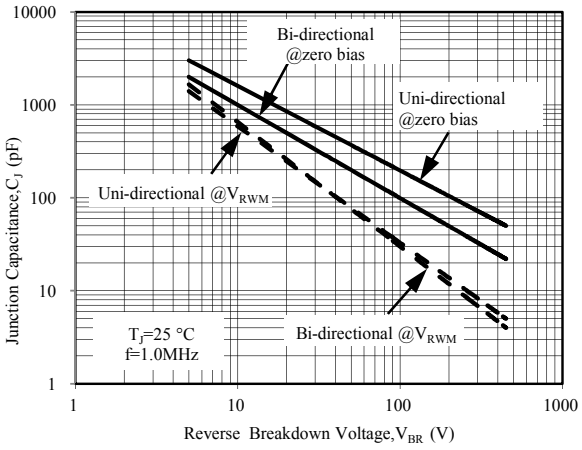


Fig. 6 - Typical Junction Capacitance