

## 200Watts Transient Voltage Suppressor SMF3.3(C)A ~ SMF440A

### Features

- Glass passivated chip
- 200 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard



**SMF  
SOD-123FL**



### Mechanical Characteristics

- JEDEC SOD-123FL package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481

### Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

### Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak power dissipation with a 10/1000 us waveform <sup>(1)</sup>	PPPM	200	W
Peak pulse current with a 10/1000 us waveform <sup>(1)</sup>	IPPM	See Next Table	A
Power dissipation on infinite heatsink at TL = 75 °C	Pd	1.0	W
Peak forward surge current, 8.3 ms single half sine wave unidirectional only <sup>(2)</sup>	IFSM	30	A
Maximum instantaneous forward voltage at 10 A for unidirectional only <sup>(3)</sup>	VF	3.5/6.5	V
Operating junction and storage temperature range	TJ , TStg	-55 to +150	°C

1) Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1 ;

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

3) VF<3.5V for devices of VBR<200V and VF<6.5V for devices of VBR>201V.

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### Electrical Characteristics

Part Number		Marking		Reverse Stand Off Voltage $V_R$ (V)	Breakdown Voltage		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_C$ (V) @ $I_{PP}$	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ ( $\mu$ A) @ $V_R$
Uni	Bi	Uni	Bi		$V_{BR}$ (V) @ $I_T$ Min.	Max.				
SMF3.3A	SMF3.3CA	HZ	GZ	3.3	4.30	5.30	10	7.3	27.40	800
SMF5.0A	SMF5.0CA	KE	AE	5.0	6.40	7.00	10	9.2	21.74	800
SMF6.0A	SMF6.0CA	KG	AG	6.0	6.67	7.37	10	10.3	19.42	800
SMF6.5A	SMF6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	17.86	500
SMF7.0A	SMF7.0CA	KM	AM	7.0	7.78	8.60	10	12.0	16.67	200
SMF7.5A	SMF7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	15.50	100
SMF8.0A	SMF8.0CA	KR	AR	8.0	8.89	9.83	1	13.6	14.71	50
SMF8.5A	SMF8.5CA	KT	AT	8.5	9.44	10.40	1	14.4	13.89	20
SMF9.0A	SMF9.0CA	KV	AV	9.0	10.00	11.10	1	15.4	12.99	10
SMF10A	SMF10CA	KX	AX	10	11.10	12.30	1	17.0	11.76	5
SMF11A	SMF11CA	KZ	AZ	11	12.20	13.50	1	18.2	10.99	1
SMF12A	SMF12CA	LE	BE	12	13.30	14.70	1	19.9	10.05	1
SMF13A	SMF13CA	LG	BG	13	14.40	15.90	1	21.5	9.30	1
SMF14A	SMF14CA	LK	BK	14	15.60	17.20	1	23.2	8.62	1
SMF15A	SMF15CA	LM	BM	15	16.70	18.50	1	24.4	8.20	1
SMF16A	SMF16CA	LP	BP	16	17.80	19.70	1	26.0	7.69	1
SMF17A	SMF17CA	LR	BR	17	18.90	20.90	1	27.6	7.25	1
SMF18A	SMF18CA	LT	BT	18	20.00	22.10	1	29.2	6.85	1
SMF20A	SMF20CA	LV	BV	20	22.20	24.50	1	32.4	6.17	1
SMF22A	SMF22CA	LX	BX	22	24.40	26.90	1	35.5	5.63	1
SMF24A	SMF24CA	LZ	BZ	24	26.70	29.50	1	38.9	5.14	1
SMF26A	SMF26CA	ME	CE	26	28.90	31.90	1	42.1	4.75	1
SMF28A	SMF28CA	MG	CG	28	31.10	34.40	1	45.4	4.41	1
SMF30A	SMF30CA	MK	CK	30	33.50	36.80	1	48.4	4.13	1
SMF33A	SMF33CA	MM	CM	33	36.70	40.60	1	53.3	3.75	1
SMF36A	SMF36CA	MP	CP	36	40.00	44.20	1	58.1	3.44	1
SMF40A	SMF40CA	MR	CR	40	44.40	49.10	1	64.5	3.10	1
SMF43A	SMF43CA	MT	CT	43	47.80	52.80	1	69.4	2.88	1
SMF45A	SMF45CA	MV	CV	45	50.00	55.30	1	72.7	2.75	1
SMF48A	SMF48CA	MX	CX	48	53.30	58.90	1	77.4	2.58	1
SMF51A	SMF51CA	MZ	CZ	51	56.70	62.70	1	82.4	2.43	1
SMF54A	SMF54CA	NE	DE	54	60.00	66.30	1	87.1	2.30	1
SMF58A	SMF58CA	NG	DG	58	64.40	71.20	1	93.6	2.14	1
SMF60A	SMF60CA	NK	DK	60	66.70	73.70	1	96.8	2.07	1
SMF64A	SMF64CA	NM	DM	64	71.10	78.60	1	103.0	1.94	1
SMF70A	SMF70CA	NP	DP	70	77.80	86.00	1	113.0	1.77	1
SMF75A	SMF75CA	NR	DR	75	83.30	92.10	1	121.0	1.65	1
SMF78A	SMF78CA	NT	DT	78	86.70	95.80	1	126.0	1.59	1
SMF85A	SMF85CA	NV	DV	85	94.40	104.0	1	137.0	1.46	1
SMF90A	SMF90CA	NX	DX	90	100.0	111.0	1	146.0	1.37	1
SMF100A	SMF100CA	NZ	DZ	100	111.0	123.0	1	162.0	1.23	1
SMF110A	SMF110CA	PE	EE	110	122.0	135.0	1	177.0	1.13	1
SMF120A	SMF120CA	PG	EG	120	133.0	147.0	1	193.0	1.04	1
SMF130A	SMF130CA	PK	EK	130	144.0	159.0	1	209.0	0.96	1
SMF150A	SMF150CA	PM	EM	150	167.0	185.0	1	243.0	0.82	1
SMF160A	SMF160CA	PP	EP	160	178.0	197.0	1	259.0	0.77	1
SMF170A	SMF170CA	PR	ER	170	189.0	209.0	1	275.0	0.73	1
SMF180A	SMF180CA	PT	ET	180	201.0	222.0	1	292.0	0.68	1
SMF190A	SMF190CA	PV	EV	190	209.0	243.0	1	308.0	0.65	1
SMF200A	SMF200CA	TX	PX	200	224.0	247.0	1	324.0	0.62	1
SMF210A	SMF210CA	PZ	EZ	210	231.0	268.0	1	340.0	0.62	1
SMF220A	SMF220CA	QE	FE	220	246.0	272.0	1	356.0	0.56	1
SMF250A	SMF250CA	QG	FG	250	279.0	309.0	1	405.0	0.49	1
SMF300A		QK		300	335.0	371.0	1	486.0	0.41	1
SMF350A		QM		350	391.0	432.0	1	567.0	0.35	1
SMF400A		QP		400	447.0	494.0	1	648.0	0.31	1
SMF440A		QR		440	492.0	543.0	1	713.0	0.28	1

**Ratings and Characteristics Curves (TA=25°C unless otherwise noted)**

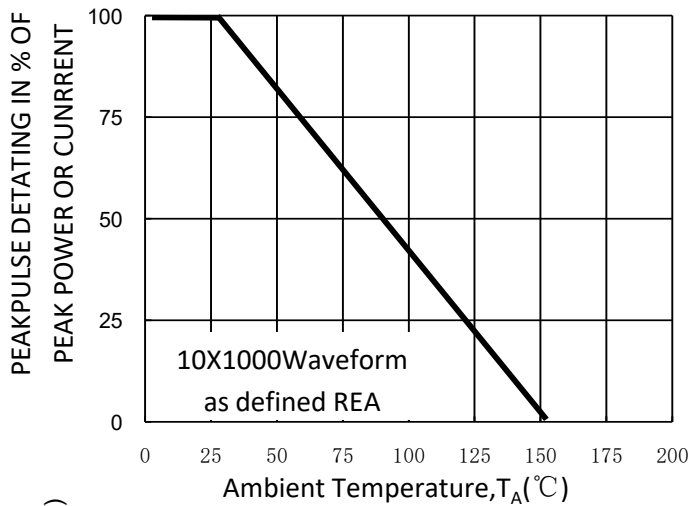


Fig. 1-Pulse Derating Curve

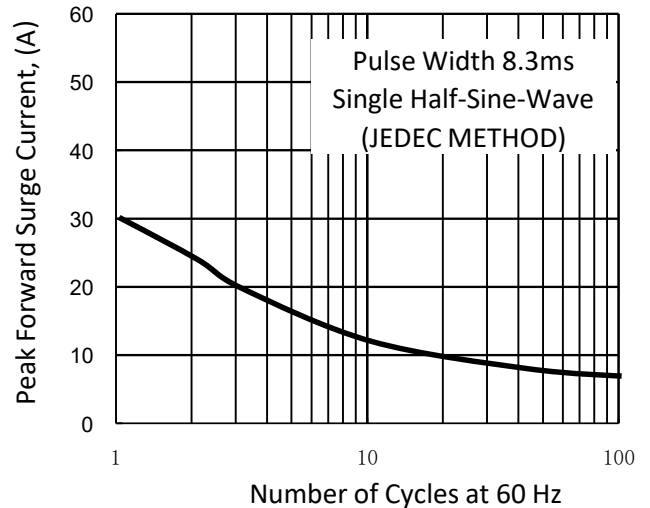


Fig. 2-Maximum Non-Repetitive Surge Current

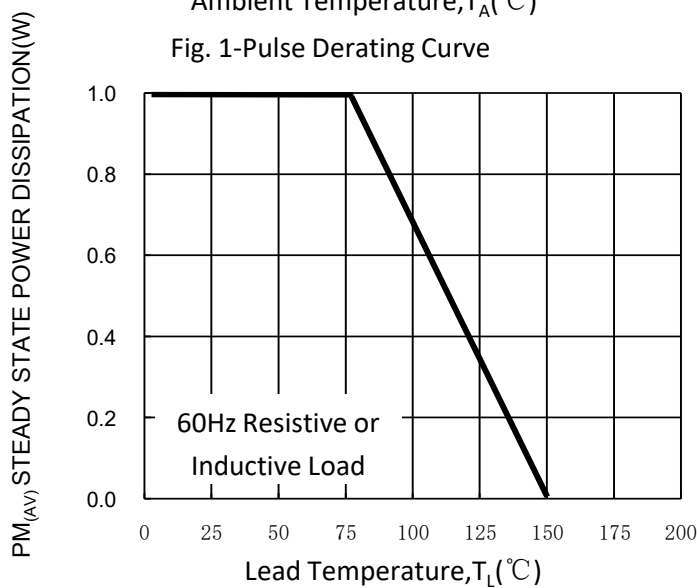


Fig. 3-Steady State Power Derating Curve

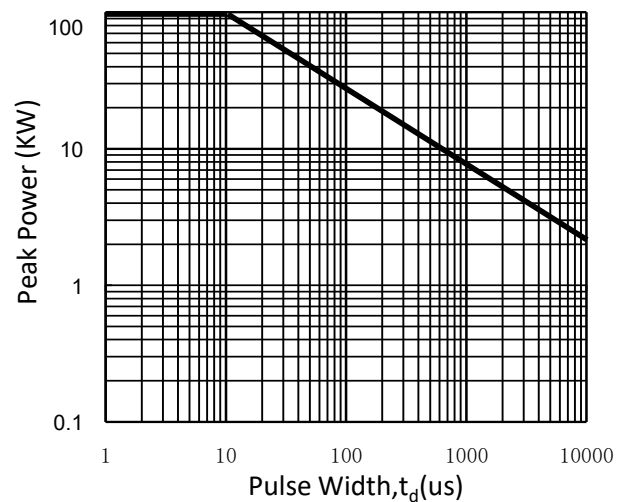


Fig. 4-Peak Pulse Power Rating Curve

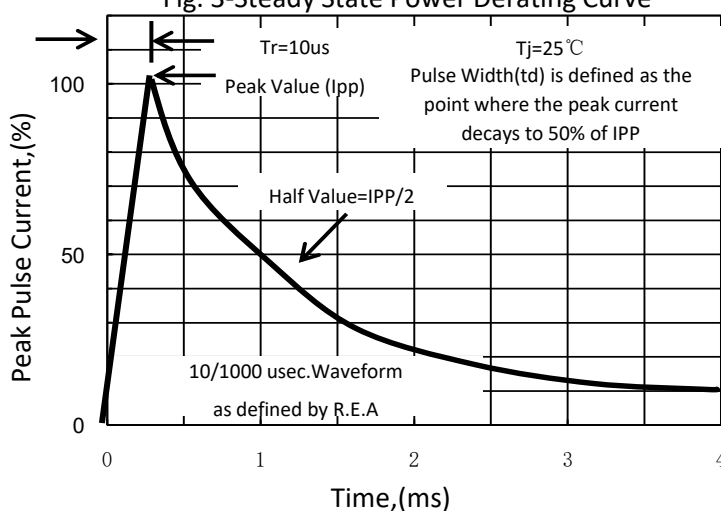


Fig. 5-Pulse Waveform

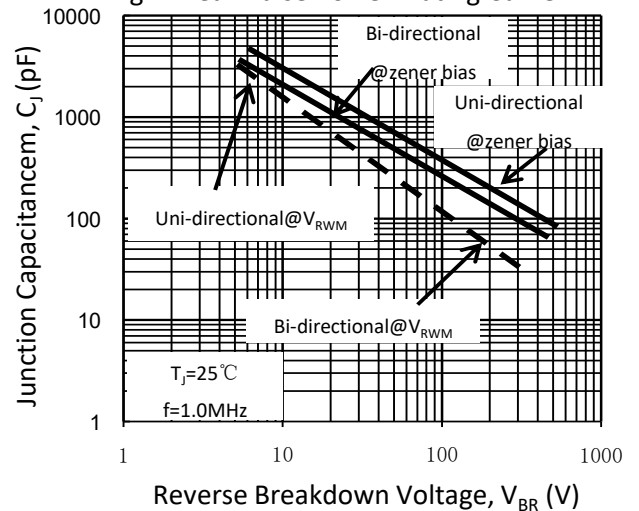
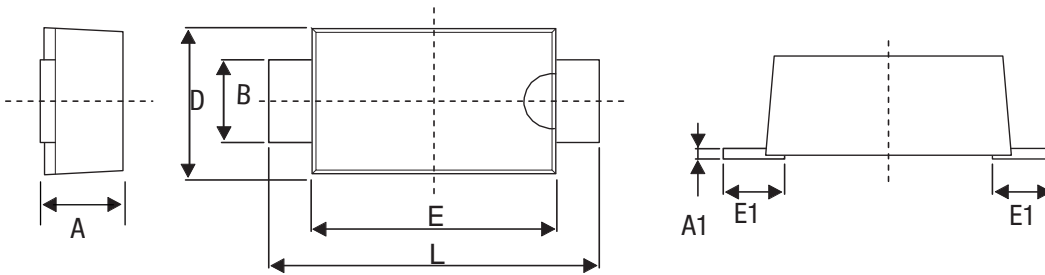


Fig. 6-Typical Junction Capacitance

**200Watts**  
**Transient Voltage Suppressor**  
**SMF3.3(C)A ~ SMF440A**

**Dimensions** (Unit: mm)



A		A1		B		E		E1		D		L	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1.200	1.400	0.150	0.250	0.800	1.100	2.700	2.900	0.350	0.850	1.750	1.950	3.500	3.900

**Packaging: 3,000/Tape & Reel**

**Part Marking System**

