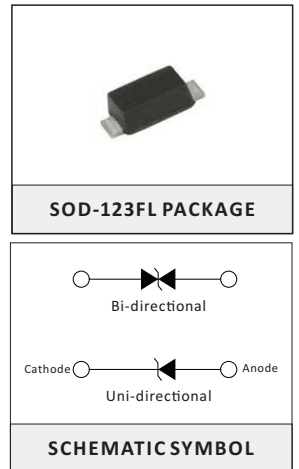


DESCRIPTION

The SMF series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

FEATURES

- > For surface mounted applications in order to optimize board space.
- > Low profile package.
- > Built-in strain relief.
- > Glass passivated junction.
- > Low inductance.
- > Excellent clamping capability.
- > Fast response time: typically less than 1.0ps from 0 Volts to V_{BR} min for unidirectional types.
- > Typical IR less than $1\mu A$ above 10V
- > Plastic package has Underwriters Laboratory Flammability 94V-0.



MAXIMUM RATINGS AND CHARACTERISTICS Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000us waveform (Note1).	PPPM	200	Watts
Peak Pulse Current of on 10/1000us waveform(Note1)	IPPM	See Table	Amps
Junction to Ambient on printed circuit	R θ JA	220	°C/W
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) .(Note2)	IFSM	30	Amps
Operating junction Temperatur Range.	TJ	-55~+150	°C
Storage Temperature Range.	TSTG	-55~+150	°C

NOTES:

1. Non-repetitive current pulse, T α = 25°C.
2. 8.3ms single half sine-wave, or equivalent square wave for Unidirectional Only , Duty cycle=4 pulses per minutes maximum.

ELECTRICAL CHARACTERISTICS

Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I τ	Breakdown Voltage Max.@I τ	Test Current	Maximum Clamping Voltage @I $_{PP}$	Peak Pulse Current	Maximum Reverse Leakage @V $_{RWM}$
UNI	BI	UNI	BI	V $_R$ (V)	V $_B$ (V)	V $_B$ (V)	I τ (mA)	V $_C$ (V)	I $_{PP}$ (A)	I $_R$ (μ A)
SMF5.0A	SMF5.0CA	AE	FE	5	6.4	7	10	9.2	21.7	800
SMF6.0A	SMF6.0CA	AG	FG	6	6.67	7.37	10	10.3	19.4	800
SMF6.5A	SMF6.5CA	AK	FK	6.5	7.22	7.98	10	11.2	17.9	500
SMF7.0A	SMF7.0CA	AM	FM	7	7.78	8.6	10	12	16.7	200
SMF7.5A	SMF7.5CA	AP	FP	7.5	8.33	9.21	1	12.9	15.5	100
SMF8.0A	SMF8.0CA	AR	FR	8	8.89	9.83	1	13.6	14.7	50
SMF8.5A	SMF8.5CA	AT	FT	8.5	9.44	10.4	1	14.4	13.9	20



ELECTRICAL CHARACTERISTICS

Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I _T	Breakdown Voltage Max.@I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Maximum Reverse Leakage @V _{RWM}
UNI	BI	UNI	BI	V _R (V)	V _B (V)	V _B (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)
SMF9.0A	SMF9.0CA	AV	FV	9	10	11.1	1	15.4	13	10
SMF10A	SMF10CA	AX	FX	10	11.1	12.3	1	17	11.8	5
SMF11A	SMF11CA	AZ	FZ	11	12.2	13.5	1	18.2	11	1
SMF12A	SMF12CA	BE	GE	12	13.3	14.7	1	19.9	10.1	1
SMF13A	SMF13CA	BG	GG	13	14.4	15.9	1	21.5	9.3	1
SMF14A	SMF14CA	BK	GK	14	15.6	17.2	1	23.2	8.6	1
SMF15A	SMF15CA	BM	GM	15	16.7	18.5	1	24.4	8.2	1
SMF16A	SMF16CA	BP	GP	16	17.8	19.7	1	26	7.7	1
SMF17A	SMF17CA	BR	GR	17	18.9	20.9	1	27.6	7.2	1
SMF18A	SMF18CA	BT	GT	18	20	22.1	1	29.2	6.8	1
SMF20A	SMF20CA	BV	GV	20	22.2	24.5	1	32.4	6.2	1
SMF22A	SMF22CA	BX	GX	22	24.4	26.9	1	35.5	5.6	1
SMF24A	SMF24CA	BZ	GZ	24	26.7	29.5	1	38.9	5.1	1
SMF26A	SMF26CA	CE	HE	26	28.9	31.9	1	42.1	4.8	1
SMF28A	SMF28CA	CG	HG	28	31.1	34.4	1	45.4	4.4	1
SMF30A	SMF30CA	CK	HK	30	33.3	36.8	1	48.4	4.1	1
SMF33A	SMF33CA	CM	HM	33	36.7	40.6	1	53.3	3.8	1
SMF36A	SMF36CA	CP	HP	36	40	44.2	1	58.1	3.4	1
SMF40A	SMF40CA	CR	HR	40	44.4	49.1	1	64.5	3.1	1
SMF43A	SMF43CA	CT	HT	43	47.8	52.8	1	69.4	2.9	1
SMF45A	SMF45CA	CV	HV	45	50	55.3	1	72.7	2.8	1
SMF48A	SMF48CA	CX	HX	48	53.3	58.9	1	77.4	2.6	1
SMF51A	SMF51CA	CZ	HZ	51	56.7	62.7	1	82.4	2.4	1
SMF54A	SMF54CA	DE	IE	54	60	66.3	1	87.1	2.3	1
SMF58A	SMF58CA	DG	IG	58	64.4	71.2	1	93.6	2.1	1
SMF60A	SMF60CA	DK	IK	60	66.7	73.7	1	96.8	1.86	1
SMF64A	SMF64CA	DM	IM	64	71.1	78.6	1	103	1.75	1
SMF70A	SMF70CA	DP	IP	70	77.8	86	1	113	1.59	1
SMF75A	SMF75CA	DR	IR	75	83.3	92.1	1	121	1.49	1
SMF78A	SMF78CA	DT	IT	78	86.7	95.8	1	126	1.43	1
SMF85A	SMF85CA	DV	IV	85	94.4	104	1	137	1.31	1
SMF90A	SMF90CA	DX	IX	90	100	111	1	146	1.23	1
SMF100A	SMF100CA	EZ	JZ	100	111	123	1	162	1.11	1
SMF110A	SMF110CA	EE	JE	110	122	135	1	177	1.02	1
SMF120A	SMF120CA	EG	JG	120	133	147	1	193	0.93	1
SMF130A	SMF130CA	EK	JK	130	144	159	1	209	0.86	1
SMF150A	SMF150CA	EM	JM	150	167	185	1	243	0.74	1
SMF160A	SMF160CA	EP	JP	160	178	197	1	259	0.69	1
SMF170A	SMF170CA	ER	JR	170	189	209	1	275	0.65	1

RATINGS AND CHARACTERISTIC CURVES ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

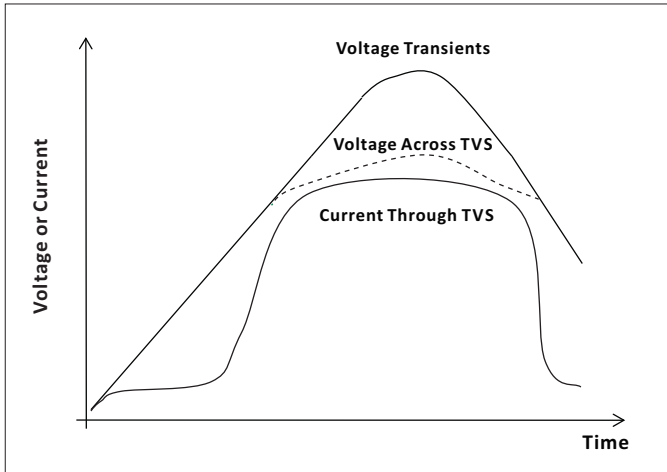


Figure 1 - TVS Transients Clamping Waveform

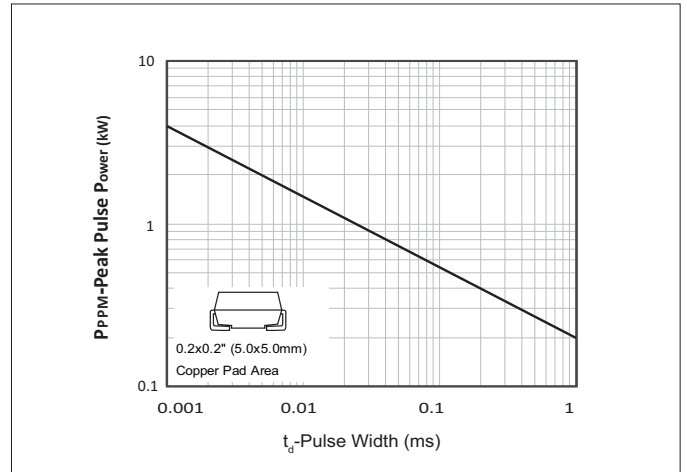


Figure 2 - Peak Pulse Power Rang Curve

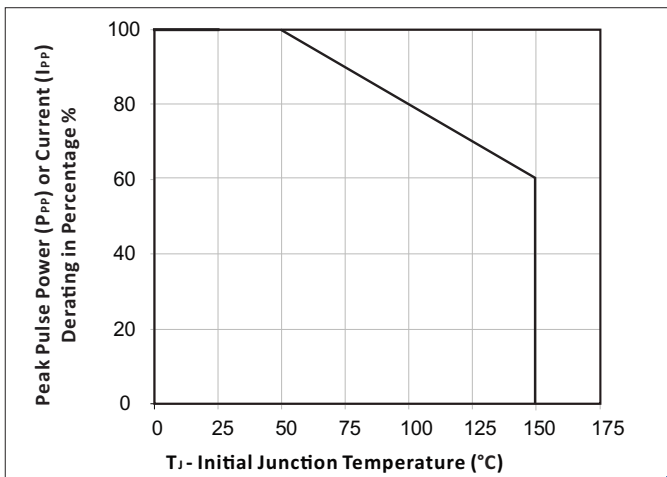


Figure 3 - Peak Pulse Power Derating Curve

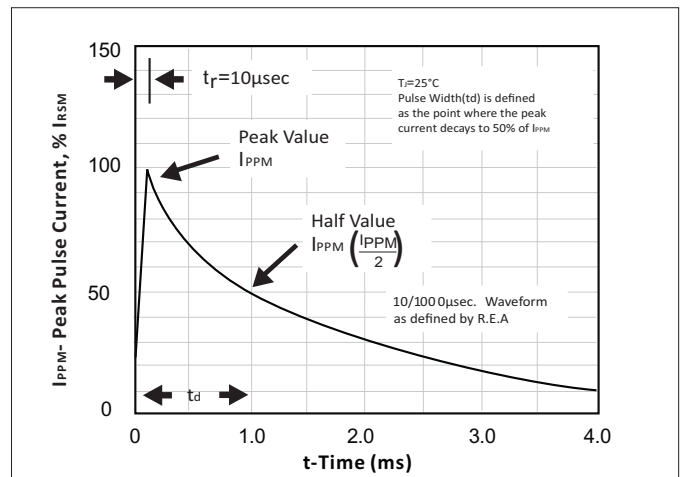


Figure 4 - Pulse Waveform - 10/1000µS

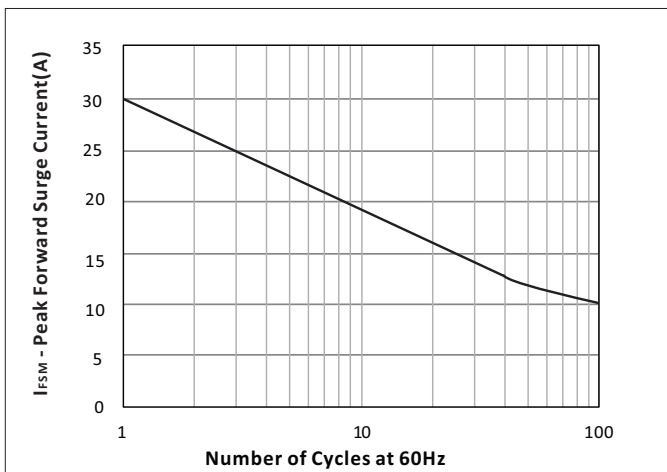
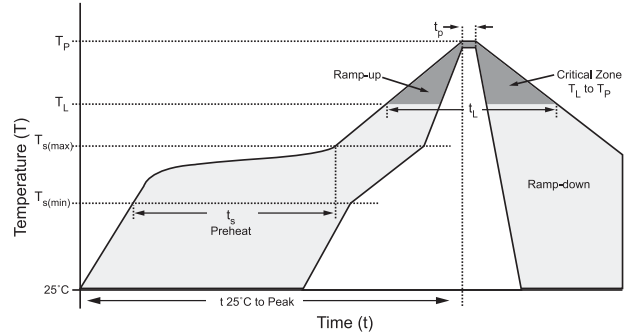


Figure 5 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

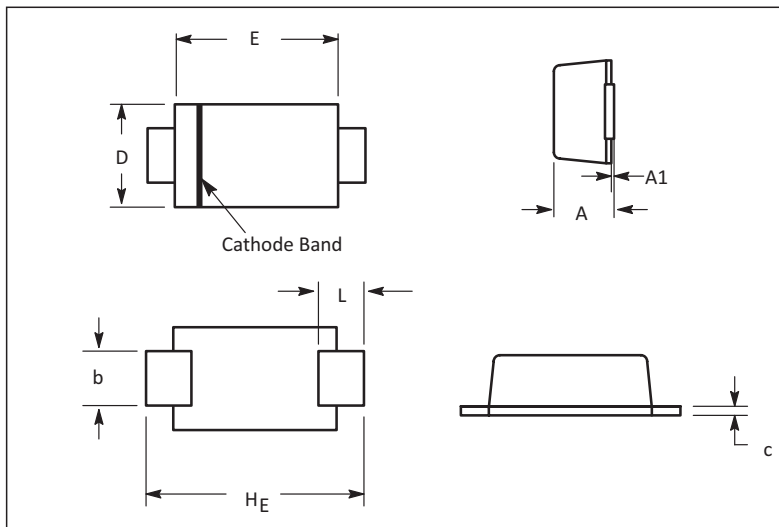


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts)	60 – 180 secs
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/second max
Ts(max)to TL - Ramp-up Rate		3°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Time (min to max) (tl)	60 – 150 seconds
Peak Temperature (TP)		260°C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Do not exceed		260°C



SOD-123FL PACKAGE DIMENSION



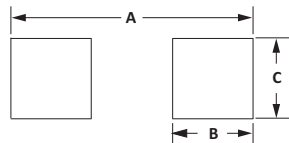
DIM	MILLIMETERS		INCHES	
	Min.	Max.	Min.	Max.
A	1.05	1.45	0.041	0.057
A1	0.00	0.10	0.000	0.004
b	0.80	1.10	0.031	0.043
c	0.15	0.25	0.006	0.010
D	1.75	1.95	0.069	0.077
E	2.70	3.10	0.106	0.122
L	0.80	1.10	0.032	0.043
HE	3.50	3.90	0.138	0.154

NOTES:

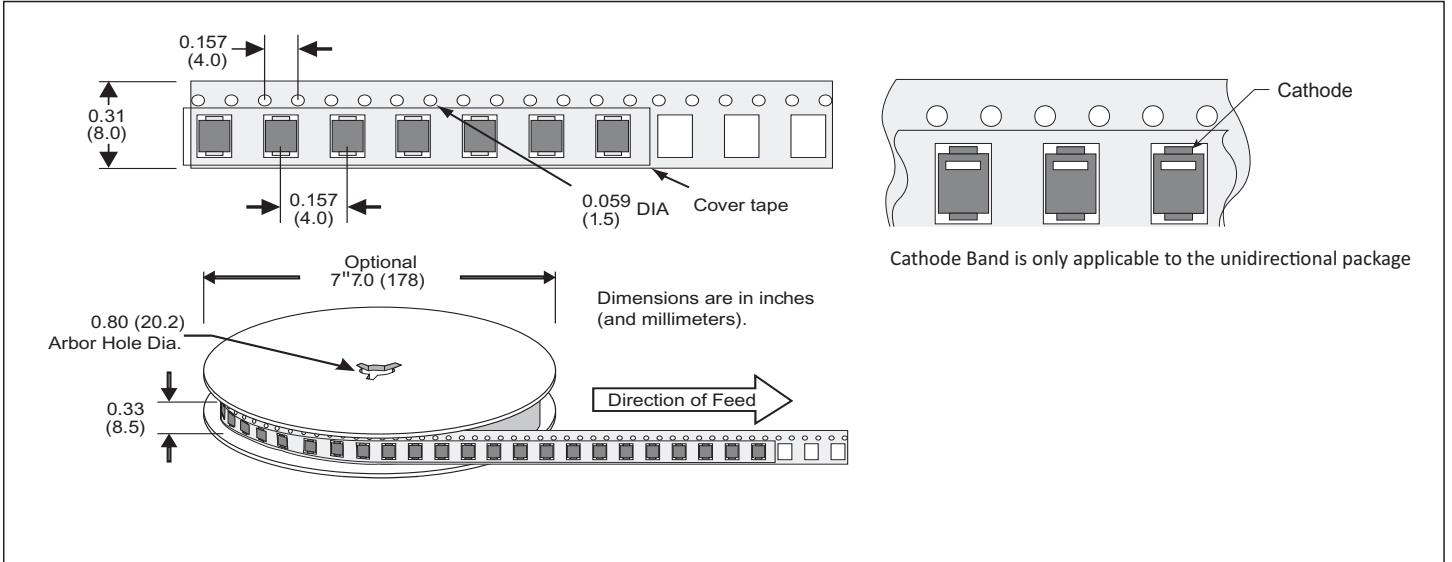
1. Dimensions are exclusive of mold flash and metal burrs
2. Cathode Band is only applicable to the unidirectional package

RECOMMENDED PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS	INCHES
A	4.19	0.165
B	0.91	0.036
C	1.22	0.048



TAPE AND REEL SPECIFICATION



ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SM Fxx(C)A	SOD-123FL	3000PCS	7"

CONTACT US

Headquarters

No.3387 Shendu Road Pujiang I&E Park Minhang Shanghai
China

Hotline

400-021-5756

Web

[Http://www.semiware.com.cn](http://www.semiware.com.cn)

By Telephone

General: 86-21-3463-7172

Sales: 86-21-3463-7345

Technical Support: 86-21-34637172-8811

By Email

General: china@semiware.com.cn

Sales: sales33@semiware.com.cn

Technical Support: fae01@semiware.com.cn

By Fax

General: 86-21-3965-0654

Sales: 86-21-3463-7458

COPYRIGHT ©Semiware 2017 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: Semiware reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES : Semiware reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance.Semiware assumes no responsibility with respect to the selection or specifications of such products.Semiware makes no warranty,representation or guarantee regarding the suitability of its products for any particular purpose, nor does Semiware assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special,consequential or incidental damages.

LIFE SUPPORT POLICY: Semiware products are not authorized for use in life support systems without written consent from the factory



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [SEMIWARE](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [DESD5V0U1BB-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE39CA-TP](#) [P6KE8.2A](#)
[SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ33CATR](#) [SMBJ8.0A](#) [ESD101-B1-02ELS E6327](#) [ESD105-B1-02EL E6327](#) [ESD112-B1-02EL E6327](#) [ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#)
[3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DESD5V0U1BL-7B](#) [DRTR5V0U4SL-7](#)
[SCM1293A-04SO](#) [ESD200-B1-CSP0201 E6327](#) [SM12-7](#) [SMF8.0A-TP](#) [SMLJ45CA-TP](#) [SMQA1000T1G](#) [CEN955 W/DATA](#) [82350120560](#)
[VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [IP4042CX5/LF,135](#) [D1213A-01LP4-7B](#) [D1213A-02WL-7](#) [1SMB33CAT3G-XYZ](#) [MMAD1108/TR13](#) [5KP100A](#) [5KP15A](#)