

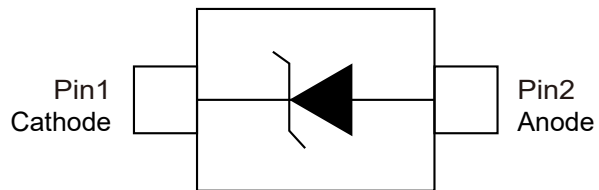
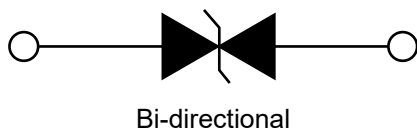
### 1.Features

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- For surface mounted applications
- Low-profile package
- Optimized for LAN protection applications
- Ideal for ESD protection of data lines in accordance with IEC 61000-4-2 (IEC 801-2)
- Ideal for EFT protection of data lines in accordance with IEC 61000-4-4 (IEC 801-4)
- ESD-protection acc. IEC 61000-4-2
  - ± 30 kV contact discharge
  - ± 30 kV air discharge
- Low incremental surge resistance, excellent clamping capability
- 200 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetition rate (duty cycle): 0.01 %
- “Low-Noise” technology - very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- e3 - Sn

### 2.Pinning Information

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### SOD-123FL



### 3. Absolute Maximum Ratings ( $T_{amb}=25^{\circ}\text{C}$ , unless otherwise specified)

Parameter	Symbol	Conditions	Value	Units
Peak pulse current	$I_{PPM}$	$t_p=10/1000 \mu\text{s}$ waveform	see "Electrical Characteristics"	A
Peak pulse power	$P_{PP}$	$t_p=10/1000 \mu\text{s}$ waveform	200	W
Peak forward surge current	$I_{FSM}$	8.3 ms single half sine-wave	50	A
ESD immunity	$V_{ESD}$	Contact discharge acc.IEC61000-4-2;10 pulses	$\pm 30$	kV
		Air discharge acc.IEC61000-4-2;10 pulses	$\pm 30$	kV
Junction Temperature	$T_J$	Junction temperature	-55 to 150	$^{\circ}\text{C}$
Storage temperature	$T_{STG}$		-55 to 150	$^{\circ}\text{C}$



#### 4. Electrical Characteristics ( $T_A=25^\circ\text{C}$ )

Type		Marking		Breakdown Voltage			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$	Working Peak Reverse Voltage $V_{RWM}$	Maximum Reverse Surge Current $I_{PP}$	Maximum Clamping Voltage $V_C$ @ $I_{PP}$
				$V_{BR} @ I_T$						
				Min	Max	$I_T$				
Uni	Bi	Uni	Bi	V	V	mA	$\mu\text{A}$	V	A	V
SMF5.0A	SMF5.0CA	AE	KE	6.40	7.00	10	100	5.0	21.74	9.2
SMF6.0A	SMF6.0CA	AG	NG	6.67	7.37	10	100	6.0	19.42	10.3
SMF6.5A	SMF6.5CA	AK	KK	7.22	7.98	10	100	6.5	17.86	11.2
SMF7.0A	SMF7.0CA	AM	KM	7.78	8.60	10	100	7.0	16.67	12.0
SMF7.5A	SMF7.5CA	AP	KP	8.33	9.21	1	50	7.5	15.50	12.9
SMF8.0A	SMF8.0CA	AR	KR	8.89	9.83	1	1	8.0	14.71	13.6
SMF8.5A	SMF8.5CA	AT	KT	9.44	10.40	1	1	8.5	13.89	14.4
SMF9.0A	SMF9.0CA	AV	KV	10.00	11.10	1	1	9.0	12.99	15.4
SMF10A	SMF10CA	AX	KX	11.10	12.30	1	1	10.0	11.76	17.0
SMF11A	SMF11CA	AZ	KZ	12.20	13.50	1	1	11.0	10.99	18.2
SMF12A	SMF12CA	BE	LE	13.30	14.70	1	1	12.0	10.05	19.9
SMF13A	SMF13CA	BG	LG	14.40	15.90	1	1	13.0	9.30	21.5
SMF14A	SMF14CA	BK	LK	15.60	17.20	1	1	14.0	8.62	23.2
SMF15A	SMF15CA	BM	LM	16.70	18.50	1	1	15.0	8.20	24.4
SMF16A	SMF16CA	BP	LP	17.80	19.70	1	1	16.0	7.69	26.0
SMF17A	SMF17CA	BR	LR	18.90	20.90	1	1	17.0	7.25	27.6
SMF18A	SMF18CA	BT	LT	20.00	22.10	1	1	18.0	6.85	29.2
SMF19A	SMF19CA	BU	LU	21.10	23.30	1	1	19.0	6.54	30.6
SMF20A	SMF20CA	BV	LV	22.20	24.50	1	1	20.0	6.17	32.4
SMF22A	SMF22CA	BX	LX	24.40	26.90	1	1	22.0	5.63	35.5
SMF24A	SMF24CA	BZ	LZ	26.70	29.50	1	1	24.0	5.14	38.9
SMF26A	SMF26CA	CE	ME	28.90	31.90	1	1	26.0	4.75	42.1
SMF28A	SMF28CA	CG	MG	31.10	34.40	1	1	28.0	4.41	45.4



Type		Marking		Breakdown Voltage			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$	Working Peak Reverse Voltage $V_{RWM}$	Maximum Reverse Surge Current $I_{PP}$	Maximum Clamping Voltage $V_C$ @ $I_{PP}$
				$V_{BR} @ I_T$						
				Min	Max	$I_T$				
Uni	Bi	Uni	Bi	V	V	mA	$\mu A$	V	A	V
SMF30A	SMF30CA	CK	MK	33.30	36.80	1	1	30.0	4.13	48.4
SMF33A	SMF33CA	CM	MM	36.70	40.60	1	1	33.0	3.75	53.3
SMF36A	SMF36CA	CP	MP	40.00	44.20	1	1	36.0	3.44	58.1
SMF40A	SMF40CA	CR	MR	44.40	49.10	1	1	40.0	3.10	64.5
SMF43A	SMF43CA	CT	MT	47.80	52.80	1	1	43.0	2.88	69.4
SMF45A	SMF45CA	CV	MV	50.00	55.30	1	1	45.0	2.75	72.7
SMF48A	SMF48CA	CX	MX	53.30	58.90	1	1	48.0	2.58	77.4
SMF51A	SMF51CA	CZ	MZ	56.70	62.70	1	1	51.0	2.43	82.4
SMF54A	SMF54CA	RE	NE	60.00	66.30	1	1	54.0	2.30	87.1
SMF58A	SMF58CA	RG	NG	64.40	71.20	1	1	58.0	2.14	93.6
SMF60A	SMF60CA	RK	NK	66.70	73.70	1	1	60.0	2.07	96.8
SMF64A	SMF64CA	RM	NM	71.10	78.60	1	1	64.0	1.94	103.0
SMF70A	SMF70CA	RP	NP	77.80	86.00	1	1	70.0	1.77	113.0
SMF75A	SMF75CA	RR	NR	83.30	92.10	1	1	75.0	1.65	121.0
SMF78A	SMF78CA	RT	NT	86.70	95.80	1	1	78.0	1.59	126.0
SMF80A	SMF80CA	RU	NU	88.80	97.60	1	1	80.0	1.55	129.0
SMF85A	SMF85CA	RV	NV	94.40	104.00	1	1	85.0	1.46	137.0
SMF90A	SMF90CA	RX	NX	100.00	111.00	1	1	90.0	1.37	146.0
SMF100A	SMF100CA	RZ	NZ	111.00	123.00	1	1	100.0	1.23	162.0
SMF110A	SMF110CA	SE	PE	122.00	135.00	1	1	110.0	1.13	177.0
SMF120A	SMF120CA	SG	PG	133.00	147.00	1	1	120.0	1.04	193.0
SMF130A	SMF130CA	SK	PK	144.00	159.00	1	1	130.0	0.96	209.0
SMF140A	SMF140CA	SL	PL	155.00	171.00	1	1	140.0	0.89	224.0
SMF150A	SMF150CA	SM	PM	167.00	185.00	1	1	150.0	0.82	243.0
SMF160A	SMF160CA	SP	PP	178.00	197.00	1	1	160.0	0.77	259.0



Type		Marking		Breakdown Voltage			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$	Working Peak Reverse Voltage $V_{RWM}$	Maximum Reverse Surge Current $I_{PP}$	Maximum Clamping Voltage $V_C$ @ $I_{PP}$
				$V_{BR} @ I_T$						
				Min	Max	$I_T$				
Uni	Bi	Uni	Bi	V	V	mA	$\mu A$	V	A	V
SMF170A	SMF170CA	SR	PR	189.00	209.00	1	1	170.0	0.73	275.0
SMF180A	SMF180CA	ST	PT	200.00	220.00	1	1	180.0	0.68	292.0
SMF190A	SMF190CA	SU	PU	211.00	232.00	1	1	190.0	0.65	308.0
SMF200A	SMF200CA	SV	PV	224.00	247.00	1	1	200.0	0.62	324.0
SMF220A	SMF220CA	SX	PX	246.00	272.00	1	1	220.0	0.56	356.0

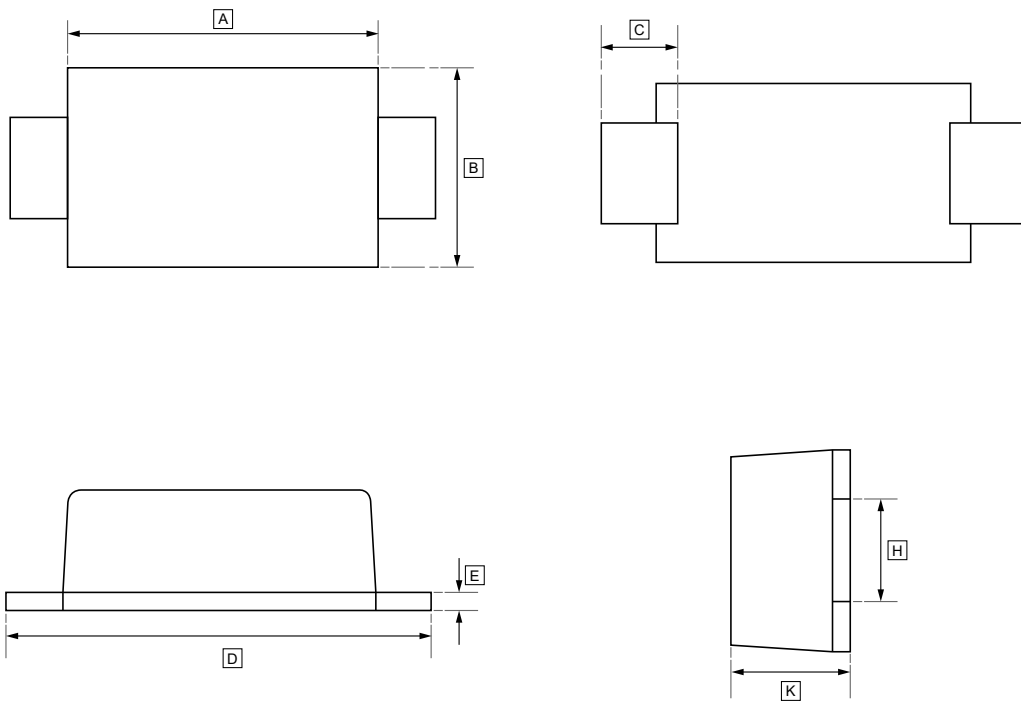


### 5. Typical characteristic

<p>Figure 1: Pulse Derating Curve</p>	<p>Figure 2: Maximum Non-Repetitive Surge Current</p>
<p>Figure 3: Steady State Power Derating Curve</p>	<p>Figure 4: Peak Pulse Power Rating Curve</p>
<p>Figure 5: Pulse Waveform</p>	<p>Figure 6: Typical Junction Capacitance</p>



### 6.SOD-123FL Package Outline Dimensions

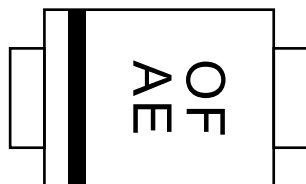


**DIMENSIONS (mm are the original dimensions)**

Symbol	A	B	C	D	E	H	K
Min	2.70	1.70	0.45	3.50	0.10	0.80	0.98
Max	2.90	1.90	0.75	3.70	0.20	1.10	1.30



## 7.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW SMFxxA	SOD-123FL	3000	Tape and reel
UMW SMFxxCA	SOD-123FL	3000	Tape and reel



## **8.Disclaimer**

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