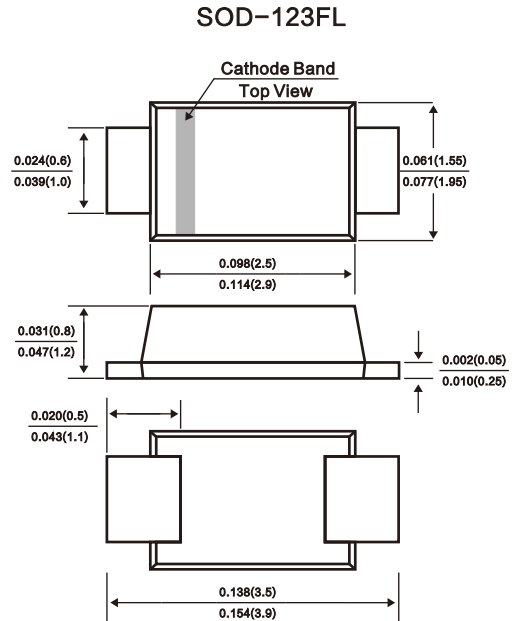


**FEATURES**

- 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
- e 3 - S n
- AEC-Q101 qualified



Dimensions in inches and (millimeters)

**ABSOLUTE MAXIMUM RATINGS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	$t_p = 10/1000\text{ }\mu\text{s}$ waveform	$I_{PPM}$	see “Electrical Characteristics”	A
Peak pulse power	$t_p = 8/20\text{ }\mu\text{s}$ waveform acc. IEC 61000-4-5	$P_{PP}$	1000	W
	$t_p = 10/1000\text{ }\mu\text{s}$ waveform		200	W
Peak forward surge current	8.3 ms single half sine-wave	$I_{FSM}$	50	A
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	$V_{ESD}$	± 30	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 30	kV
Thermal resistance	Mounted on epoxy glass PCB with 3 mm x 3 mm, Cu pads ( $\geq 40\text{ }\mu\text{m}$ thick)	$R_{thJA}$	180	K/W
Forward clamping voltage	$I_F = 50\text{A}$ , $t_p = 400\text{ }\mu\text{s}$	$V_F$	2.5	V
Operating temperature	Junction temperature	$T_J$	- 55 to + 150	$^{\circ}\text{C}$
Storage temperature		$T_{STG}$	- 55 to + 150	$^{\circ}\text{C}$

**Electrical Characteristics( $T_A=25^\circ\text{C}$  unless otherwise noted)**

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
		Uni	Bi	Min (V)	Max (V)	$I_T$ (mA)				
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
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
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

**Note:**

1. The available parts are "A" type only, the parts without A ( $V_{BR}$  is  $\pm 10\%$ ) is not available
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double

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

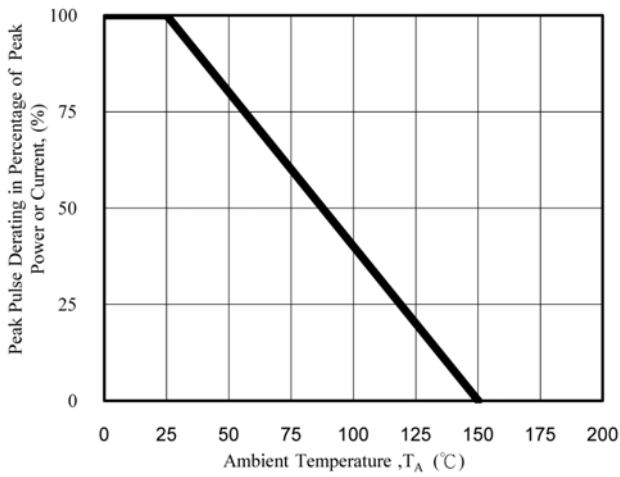


Fig. 1 - Pulse Derating Curve

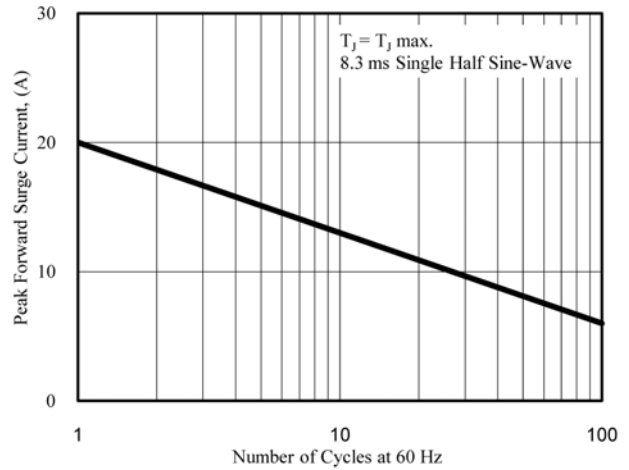


Fig. 2 - Maximum Non-Repetitive Surge Current

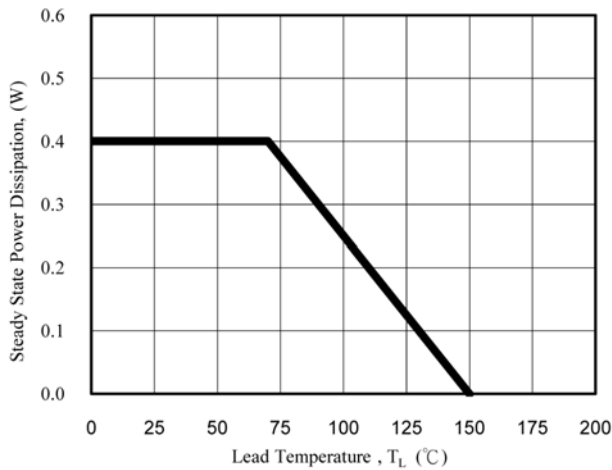


Fig. 3 - Steady State Power Derating Curve

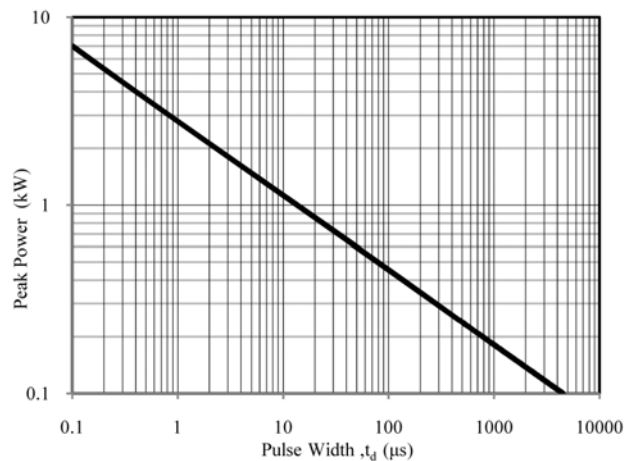


Fig. 4 - Peak Pulse Power Rating Curve

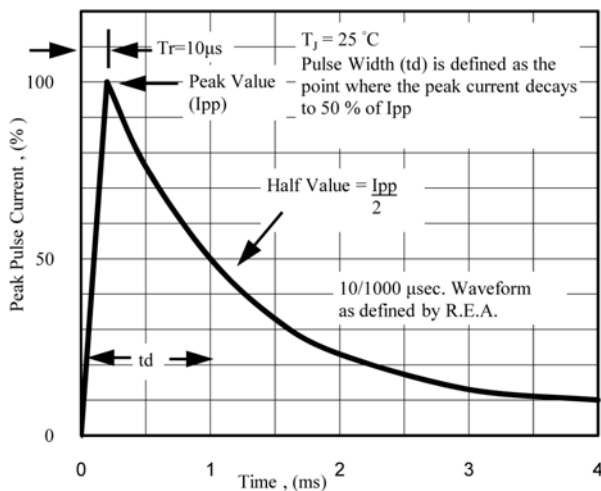


Fig. 5 - Pulse Waveform

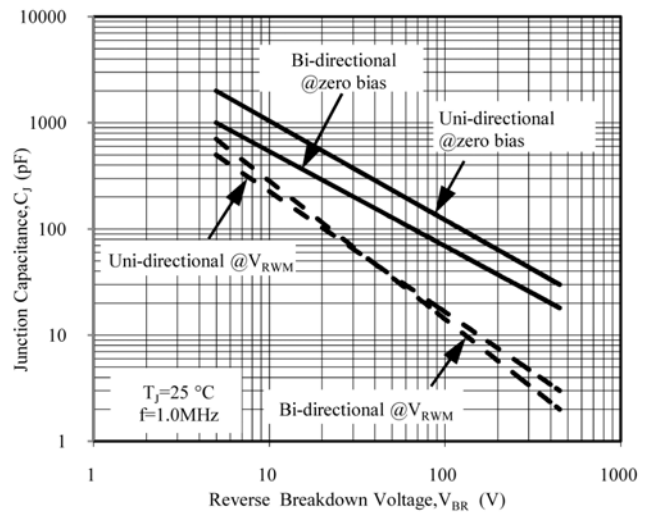


Fig. 6 - Typical Junction Capacitance

**ORDERING INFORMATION**

Order Code	Package	Baseqty	Deliverymode
UMW SMFxxA	SOD-123FL	3000	Tape and reel
UMW SMFxxCA	SOD-123FL	3000	Tape and reel