

200W Transient Voltage Suppressors

TVS Diodes - 200W > SMF Series



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
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-0
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- Glass passivated junction
- Low inductance



Package: SMF / SOD-123FL

Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10x1000µs waveform (Fig.1)(Note 1), (Note 2)	PPPM	200	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	IFSM	40	A
Operating Junction and Storage Temperature Range	TJ, TSTG	-55 to 150	°C
Typical Thermal Resistance Junction to Lead	RθJL	20	°C/W
Typical Thermal Resistance Junction to Ambient	RθJA	100	°C/W

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig. 2.
2. Mounted on 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.

Electrical Characteristics (TA=25°C)



Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Delivery Time
Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	days
SMF3.3A	SMF3.3CA	3.3	4.10	4.75	10	7.3	27.40	400	12days
SMF5.0A	SMF5.0CA	5.0	6.4	7.00	10	9.2	21.70	400	12days
SMF6.0A	SMF6.0CA	6.0	6.67	7.37	10	10.3	19.40	400	12days
SMF6.5A	SMF6.5CA	6.5	7.22	7.98	10	11.2	17.90	250	12days
SMF7.0A	SMF7.0CA	7.0	7.78	8.60	10	12.0	16.70	100	12days
SMF7.5A	SMF7.5CA	7.5	8.33	9.21	1	12.9	15.50	50	12days
SMF8.0A	SMF8.0CA	8.0	8.89	9.83	1	13.6	14.70	25	12days
SMF8.5A	SMF8.5CA	8.5	9.44	10.40	1	14.4	13.90	10	12days
SMF9.0A	SMF9.0CA	9.0	10.00	11.10	1	15.4	13.00	5	12days
SMF10A	SMF10CA	10.0	11.10	12.30	1	17.0	11.80	2.5	12days
SMF11A	SMF11CA	11.0	12.20	13.50	1	18.2	11.00	2.5	12days
SMF12A	SMF12CA	12.0	13.30	14.70	1	19.9	10.10	2.5	12days
SMF13A	SMF13CA	13.0	14.40	15.90	1	21.5	9.3	1	12days
SMF14A	SMF14CA	14.0	15.60	17.20	1	23.2	8.6	1	12days
SMF15A	SMF15CA	15.0	16.70	18.50	1	24.4	8.2	1	12days
SMF16A	SMF16CA	16.0	17.80	19.70	1	26.0	7.7	1	12days
SMF17A	SMF17CA	17.0	18.90	20.90	1	27.6	7.2	1	12days
SMF18A	SMF18CA	18.0	20.00	22.10	1	29.2	6.8	1	12days
SMF20A	SMF20CA	20.0	22.20	24.50	1	32.4	6.2	1	12days
SMF22A	SMF22CA	22.0	24.40	26.90	1	35.5	5.6	1	12days
SMF24A	SMF24CA	24.0	26.70	29.50	1	38.9	5.1	1	12days
SMF26A	SMF26CA	26.0	28.90	31.90	1	42.1	4.8	1	12days
SMF28A	SMF28CA	28.0	31.10	34.40	1	45.4	4.4	1	12days
SMF30A	SMF30CA	30.0	33.30	36.80	1	48.4	4.1	1	12days

Electrical Characteristics (TA=25°C)

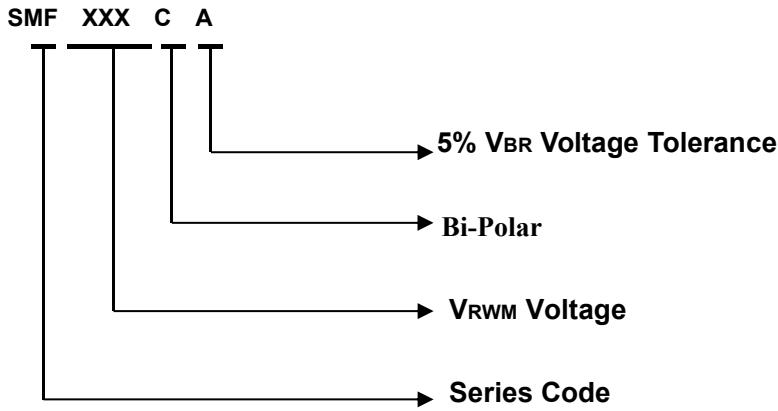
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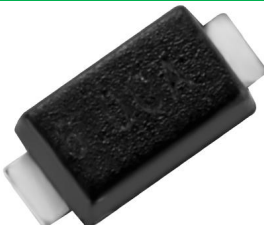
Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}(Volts)@I_T$		Test Current	Maximum Clamping Voltage@ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}	Delivery Time
Uni-Polar	Bi-polar	$V_{RWM}(V)$	Min	Max	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	days
SMF36A	SMF36CA	36.0	40.0	44.20	1	58.1	3.4	1	12days
SMF40A	SMF40CA	40.0	44.4	49.10	1	64.5	3.1	1	12days
SMF43A	SMF43CA	43.0	47.8	52.80	1	69.4	2.9	1	12days
SMF45A	SMF45CA	45.0	50.0	55.30	1	72.7	2.8	1	12days
SMF48A	SMF48CA	48.0	53.3	58.90	1	77.4	2.6	1	12days
SMF51A	SMF51CA	51.0	56.7	62.7	1	82.4	2.4	1	12days
SMF54A	SMF54CA	54.0	60.0	66.3	1	87.1	2.3	1	12days
SMF58A	SMF58CA	58.0	64.4	71.2	1	93.6	2.1	1	12days
SMF60A	SMF60CA	60.0	66.7	73.7	1	96.8	2.0	1	12days
SMF64A	SMF64CA	64.0	71.1	78.6	1	103	1.94	1	12days
SMF70A	SMF70CA	70.0	77.8	86.0	1	113	1.77	1	12days
SMF75A	SMF75CA	75.0	83.3	92.1	1	121	1.65	1	12days
SMF78A	SMF78CA	78.0	86.7	95.8	1	126	1.59	1	12days
SMF85A	SMF85CA	85.0	94.4	104	1	137	1.55	1	12days
SMF90A	SMF90CA	90.0	100	111	1	146	1.46	1	12days
SMF100A	SMF100CA	100.0	111	123	1	162	1.37	1	12days
SMF110A	SMF110CA	110.0	122	135	1	177	1.23	1	12days
SMF120A	SMF120CA	120.0	133	147	1	193	1.13	1	12days
SMF130A	SMF130CA	130.0	144	159	1	209	1.04	1	12days
SMF150A	SMF150CA	150.0	167	185	1	243	0.96	1	12days
SMF160A	SMF160CA	160.0	178	197	1	259	0.89	1	12days
SMF170A	SMF170CA	170.0	189	209	1	275	0.82	1	12days
SMF180A	SMF180CA	180.0	201	222	1	292	0.77	1	12days
SMF190A	SMF190CA	190.0	211	232	1	308	0.73	1	12days

Notes: For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.

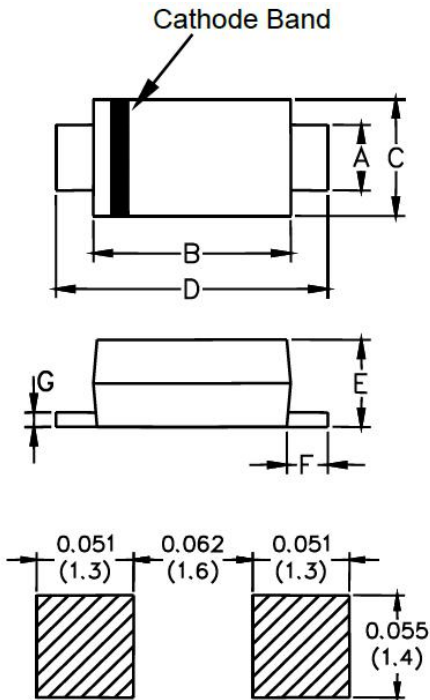
Description of Part Number



Packing Options

Package Type	Packaging Option	Packing Quantity	Industry Standard
 SOD-123FL	Tape & Reel -12mm/7"tape	3000PCS	EIA STD RS-481

Dimensions - SOD-123FL



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.031	0.044	0.77	1.09
B	0.1	0.112	2.51	2.81
C	0.055	0.071	1.38	1.78
D	0.140	0.152	3.51	3.82
E	0.037	0.053	0.93	1.33
F	0.01	-	0.25	-
G	-	0.008	-	0.20

Figure 1 - Peak Pulse Power Rating Curve

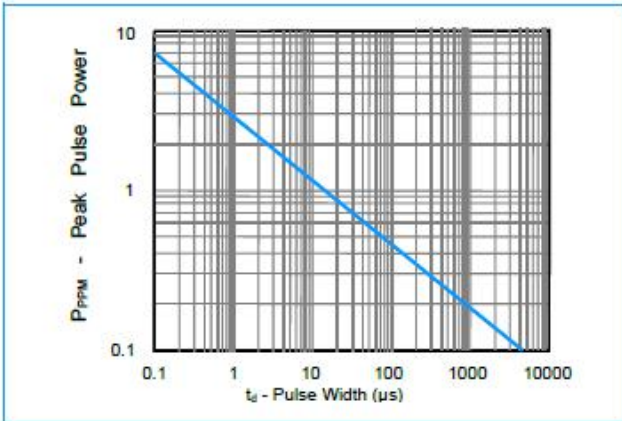


Figure 2 - Pulse Derating Curve

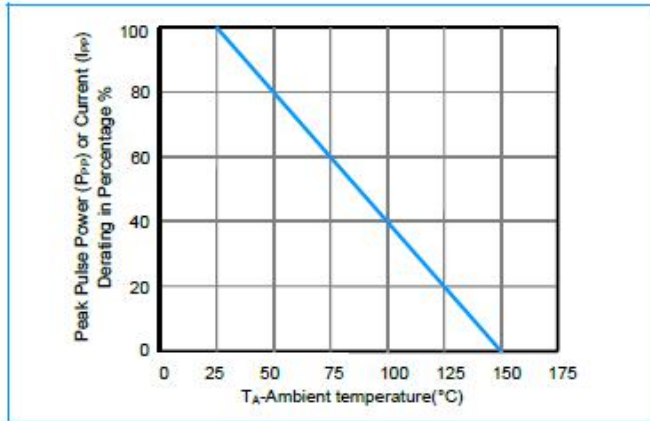


Figure 3 - Pulse Waveform

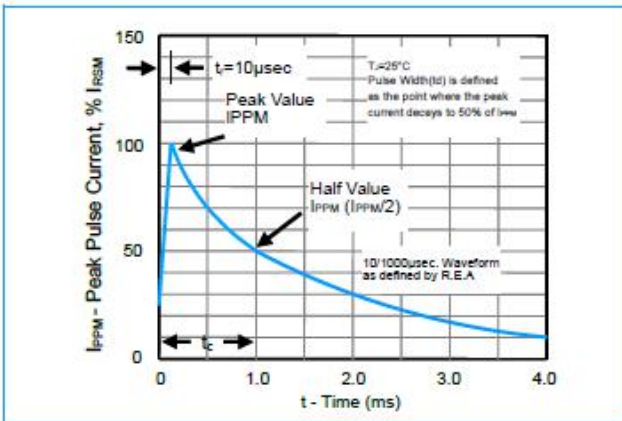


Figure 4 - Typical Junction Capacitance

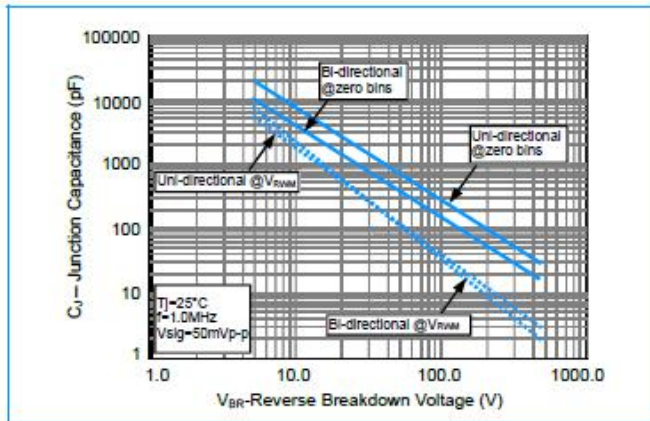


Figure 5 - Steady State Power Derating Curve

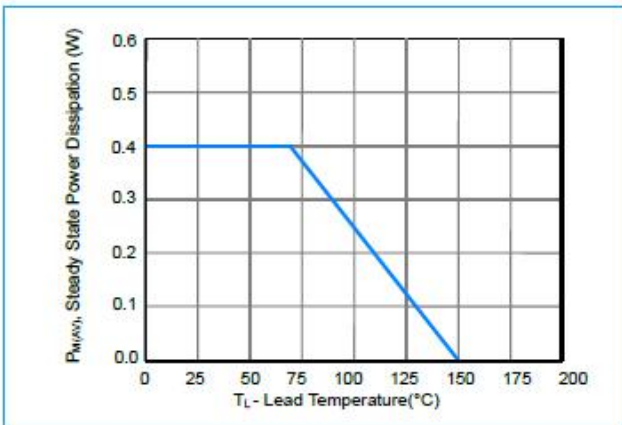


Figure 6 - Maximum Non-Repetitive Surge Current

