



Surface Mount Uni/Bi-Directional TVS Diodes

Peak Pulse Power - 200 W
Reverse Stand Off Voltage - 5 to 180 V



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
- Low profile package
- 200W Peak pulse power capability at 10/1000µs waveform
- Excellent clamping capability
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- High temperature soldering: 260°C/10s

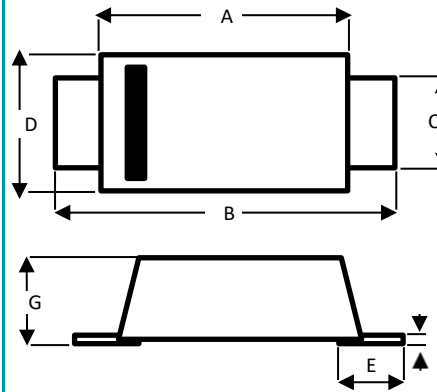
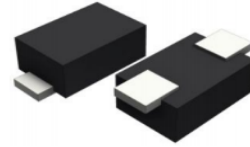
Mechanical Data

- Case:SOD-123FL package
 - Case material: "green" molding compound
 - UL flammability classification rating 94V-0
 - Polarity : by cathode band denotes uni-directional device, none cathode band denotes bi-directional device
 - Weight: 0.017grams
- Note: Products with logo  or  are made by HY Electronic (Cayman) Limited

Applications

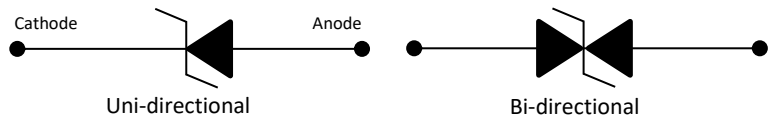
TVS devices are ideal for the protection of I/O interfaces, Vcc bus and other vulnerable circuits used in cellular phones, portable devices, business machines, power supplies and other consumer applications.

Package Outline Dimensions



SOD-123FL Package		
Dim	Min	Max
A	2.50	3.00
B	3.40	4.00
C	0.70	1.10
D	1.50	1.90
E	0.45	0.95
F	0.05	0.26
G	0.80	1.10
All Dimensions in mm		

Device Schematic



Ordering Information

- Package :SOD-123FL
- Reel Size :7 (inches)
- Quantity Per Reel :3Kpcs
- Quantity Per Box :21Kpcs
- Quantity Per Carton :252Kpcs

Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Absolute Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10/1000us Waveform (Note 1)	PPP	200	W
Power Dissipation on Infinite Heat Sink at TL=50°C	PM(AV)	1	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2)	IFSM	20	A
Operating Temperature Range	Tj	-55 to +150	° C
Storage Temperature Range	TSTG	-55 to +150	° C

Note:

1. Non-repetitive current pulse, per Fig.4 and derated above Tj(initial) =25°C per Fig.1
2. For unidirectional units only

Electrical Characteristics (@TA = 25°C, unless otherwise specified.)

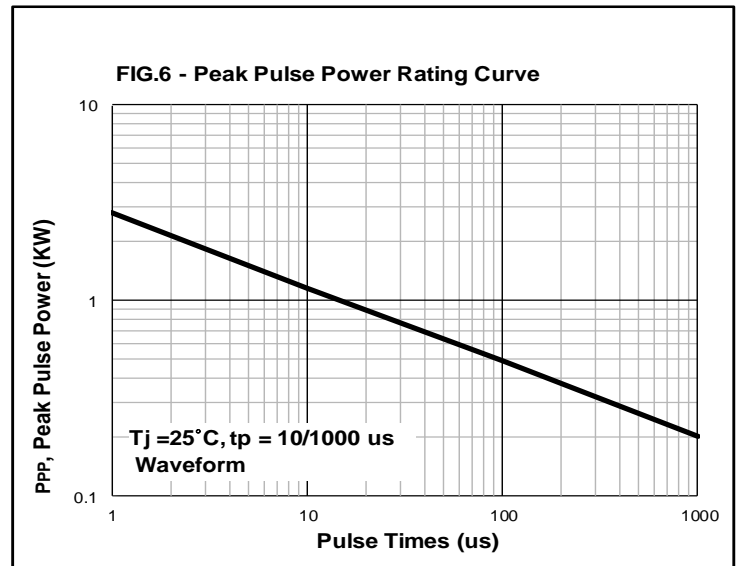
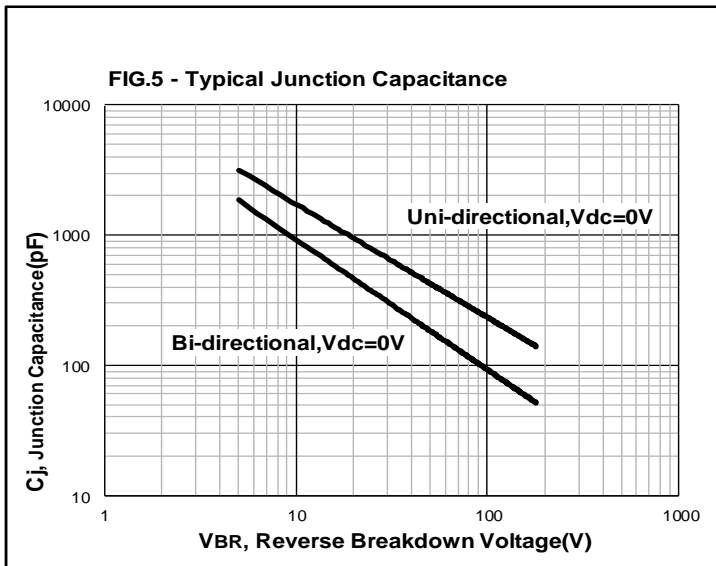
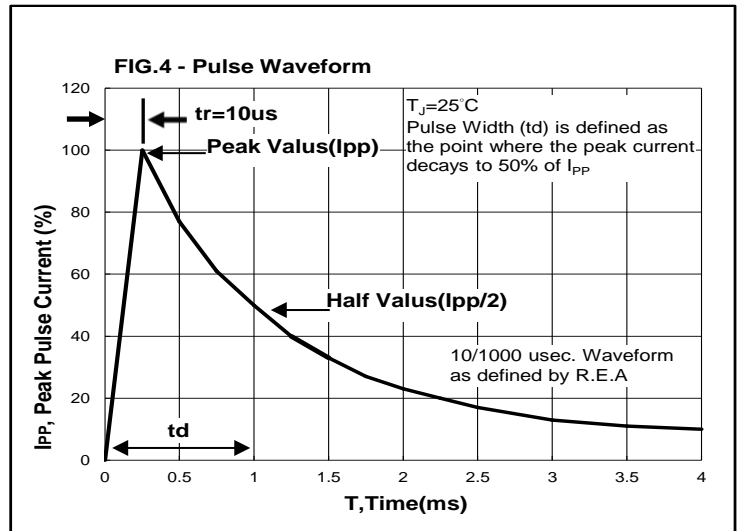
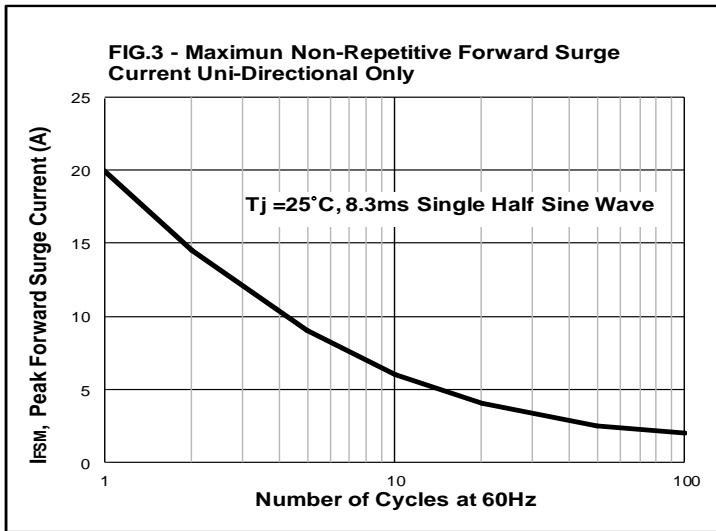
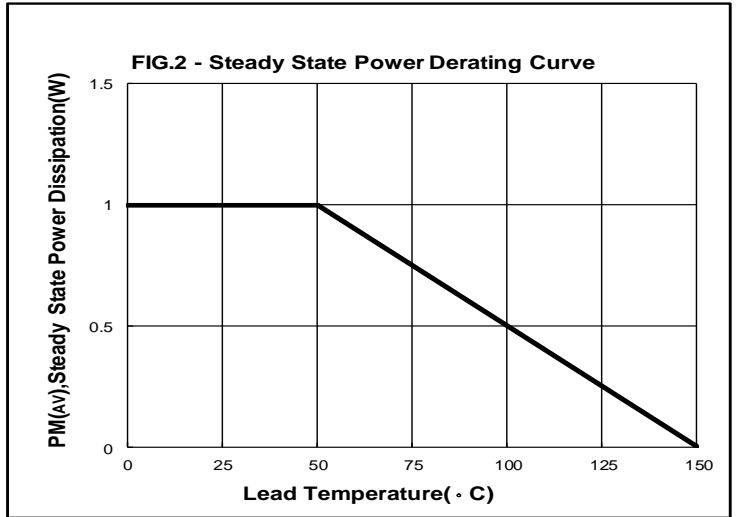
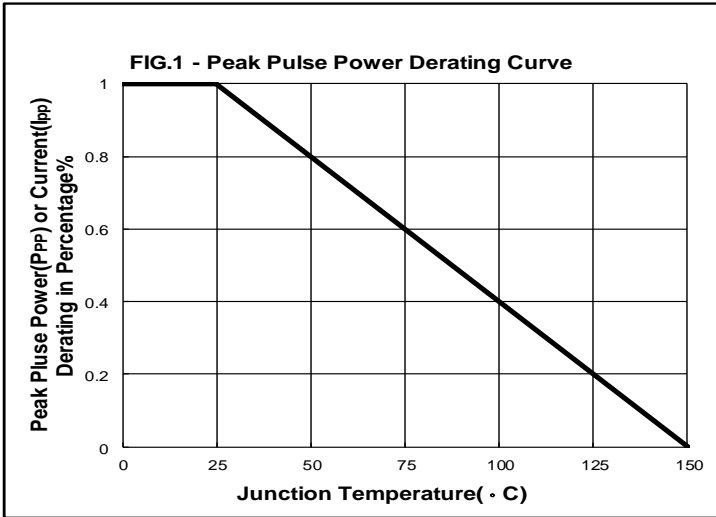
Part Number		Marking Code		Reverse Working Voltage VRWM(V)	Reverse Breakdown Voltage VB(V)			Reverse Leakage (Max) IR(μA) @VR	Reverse Clamping Voltage (Max) VC(V) @IPP	Peak Pulse Current (Max) IPP(A)
Uni.	Bi.	Uni.	Bi.		Min.	Max.	@IR(mA)			
SMF5.0A	SMF5.0CA	5.0A	5.0CA	5.0	6.40	7.00	10	400	9.2	21.74
SMF6.0A	SMF6.0CA	6.0A	6.0CA	6.0	6.67	7.37	10	400	10.3	19.42
SMF6.5A	SMF6.5CA	6.5A	6.5CA	6.5	7.22	7.98	10	250	11.2	17.86
SMF7.0A	SMF7.0CA	7.0A	7.0CA	7.0	7.78	8.60	10	100	12.0	16.67
SMF7.5A	SMF7.5CA	7.5A	7.5CA	7.5	8.33	9.21	1	50	12.9	15.51
SMF8.0A	SMF8.0CA	8.0A	8.0CA	8.0	8.89	9.83	1	25	13.6	14.71
SMF8.5A	SMF8.5CA	8.5A	8.5CA	8.5	9.44	10.40	1	10	14.4	13.89
SMF9.0A	SMF9.0CA	9.0A	9.0CA	9.0	10.0	11.1	1	5	15.4	12.99
SMF10A	SMF10CA	10A	10CA	10	11.1	12.3	1	2.5	17.0	11.77
SMF11A	SMF11CA	11A	11CA	11	12.2	13.5	1	2.5	18.2	10.99
SMF12A	SMF12CA	12A	12CA	12	13.3	14.7	1	2.5	19.9	10.06
SMF13A	SMF13CA	13A	13CA	13	14.4	15.9	1	1	21.5	9.31
SMF14A	SMF14CA	14A	14CA	14	15.6	17.2	1	1	23.2	8.63
SMF15A	SMF15CA	15A	15CA	15	16.7	18.5	1	1	24.4	8.20
SMF16A	SMF16CA	16A	16CA	16	17.8	19.7	1	1	26.0	7.70
SMF17A	SMF17CA	17A	17CA	17	18.9	20.9	1	1	27.6	7.25
SMF18A	SMF18CA	18A	18CA	18	20.0	22.1	1	1	29.2	6.85
SMF20A	SMF20CA	20A	20CA	20	22.2	24.5	1	1	32.4	6.18
SMF22A	SMF22CA	22A	22CA	22	24.4	26.9	1	1	35.5	5.64
SMF24A	SMF24CA	24A	24CA	24	26.7	29.5	1	1	38.9	5.15
SMF26A	SMF26CA	26A	26CA	26	28.9	31.9	1	1	42.1	4.76
SMF28A	SMF28CA	28A	28CA	28	31.1	34.4	1	1	45.4	4.41
SMF30A	SMF30CA	30A	30CA	30	33.3	36.8	1	1	48.4	4.14
SMF33A	SMF33CA	33A	33CA	33	36.7	40.6	1	1	53.3	3.76
SMF36A	SMF36CA	36A	36CA	36	40.0	44.2	1	1	58.1	3.45
SMF40A	SMF40CA	40A	40CA	40	44.4	49.1	1	1	64.5	3.11
SMF43A	SMF43CA	43A	43CA	43	47.8	52.8	1	1	69.4	2.89
SMF45A	SMF45CA	45A	45CA	45	50.0	55.3	1	1	72.7	2.76
SMF48A	SMF48CA	48A	48CA	48	53.3	58.9	1	1	77.4	2.59
SMF51A	SMF51CA	51A	51CA	51	56.7	62.7	1	1	82.4	2.43
SMF54A	SMF54CA	54A	54CA	54	60.0	66.3	1	1	87.1	2.30
SMF58A	SMF58CA	58A	58CA	58	64.4	71.2	1	1	93.6	2.14
SMF60A	SMF60CA	60A	60CA	60	66.7	73.7	1	1	96.8	2.07
SMF64A	SMF64CA	64A	64CA	64	71.1	78.6	1	1	103	1.95
SMF70A	SMF70CA	70A	70CA	70	77.8	86.0	1	1	113	1.77
SMF75A	SMF75CA	75A	75CA	75	83.3	92.1	1	1	121	1.66
SMF78A	SMF78CA	78A	78CA	78	86.7	95.8	1	1	126	1.59
SMF85A	SMF85CA	85A	85CA	85	94.4	104.0	1	1	137	1.46
SMF90A	SMF90CA	90A	90CA	90	100	111	1	1	146	1.37
SMF100A	SMF100CA	100A	100CA	100	111	123	1	1	162	1.24
SMF110A	SMF110CA	110A	110CA	110	122	135	1	1	177	1.13
SMF120A	SMF120CA	120A	120CA	120	133	147	1	1	193	1.04
SMF130A	SMF130CA	130A	130CA	130	144	159	1	1	209	0.96
SMF150A	SMF150CA	150A	150CA	150	167	185	1	1	243	0.83
SMF160A	SMF160CA	160A	160CA	160	178	197	1	1	259	0.78
SMF170A	SMF170CA	170A	170CA	170	189	209	1	1	275	0.73
SMF180A	SMF180CA	180A	180CA	180	201	222	1	1	292	0.69

Note:

1. Suffix "A" denotes 5% tolerance device.
2. Add suffix "CA" after part number to specify bi-directional devices.
3. The IR limit is double for bi-directional devices.



Rating and Characteristic Curves



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