Elektronische Bauelemente

S2MF Series-C

Voltage 5V~220V

200W Peak Power Surface Mount TVS

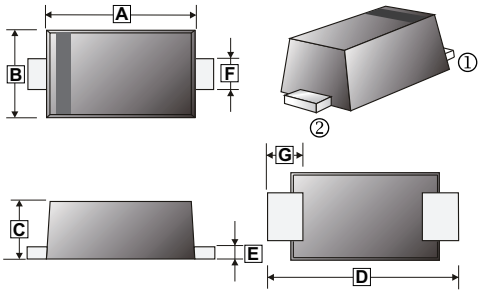
RoHS Compliant Product

A suffix of "-C" specifies halogen-free and lead-free

FEATURES

- Low-profile package
- Ideal for automated placement
- Available in Uni and Bi-directional unit
- Low incremental surge resistance
- Excellent clamping capability
- Very fast response time
- Meets MSL level 1
- High temperature soldering guaranteed: 260℃/10s a t terminals
- 200W peak pulse power capability with a 10/1000μs waveform

SOD-123FL



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.40	3.10	E	0.05	0.30
B	1.40	2.10	F	0.60	1.35
C	0.80	1.55	G	0.80 TYP.	
D	3.30	3.95			

MECHANICAL DATA

- Epoxy : UL94V-0 rate flame retardant
- Case : SOD-123FL
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity : Color band denotes cathode end except Bipolar
- Mounting Position : Any

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOD-123FL	3K	7 inch

ORDER INFORMATION

Part Number	Type
S2MF Series-C	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating 25℃ ambient temperature unless otherwise s pecified. Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, de-rate current by 20%.)

Ratings		Symbol	Value	Units
Peak Power Dissipation [1,2] @10/1000μs waveform (Fig.1)		P_{PP}	200	W
Peak Pulse Current [1] @10/1000μs waveform		I_{PP}	(See Next Table.)	A
Power Dissipation on Infinite Heatsink	T_L=75℃	P_D	0.4	W
Peak Forward Surge Current [3] @8.3ms single half sine-wave unidirectional only		I_{FSM}	20	A
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance from Junction-Ambient		$R_{\theta JA}$	300	℃/W
Thermal Resistance from Junction-Case		$R_{\theta JC}$	40	
Thermal Resistance from Junction-Lead		$R_{\theta JL}$	26	

Notes:

1. Non-repetitive current pulse at T_A=25℃, per waveform of Fig.2.
2. T_L=30℃ unless otherwise noted, V_F≤1.25V @200mA.
3. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

Elektronische Bauelemente

S2MF Series-C

Voltage 5V~220V

200W Peak Power Surface Mount TVS

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Part Number		Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @I_T		Test Current	Maximum Clamping Voltage V_C @I_{PP}	Maximum Reverse Surge Current	Maximum Reverse Leakage I_R @V_{RWM}
					Min.	Max.				
Directional		Directional		V_{RWM}	V_{BR}		I_T [1]	V_C	I_{PP} [2]	I_R [3]
Uni	Bi	Uni	Bi	V	V		mA	V	A	μA
S2MF5.0A-C	S2MF5.0CA-C	5.0A	5.0CA	5	6.4	7.07	10	9.2	21.74	400
S2MF6.0A-C	S2MF6.0CA-C	6.0A	6.0CA	6	6.67	7.37	10	10.3	19.42	400
S2MF6.5A-C	S2MF6.5CA-C	6.5A	6.5CA	6.5	7.22	7.98	10	11.2	17.86	250
S2MF7.0A-C	S2MF7.0CA-C	7.0A	7.0CA	7	7.78	8.6	10	12	16.67	100
S2MF7.5A-C	S2MF7.5CA-C	7.5A	7.5CA	7.5	8.33	9.21	1	12.9	15.5	50
S2MF8.0A-C	S2MF8.0CA-C	8.0A	8.0CA	8	8.89	9.83	1	13.6	14.71	25
S2MF8.5A-C	S2MF8.5CA-C	8.5A	8.5CA	8.5	9.44	10.4	1	14.4	13.89	10
S2MF9.0A-C	S2MF9.0CA-C	9.0A	9.0CA	9	10	11.1	1	15.4	12.99	5
S2MF10A-C	S2MF10CA-C	10A	10CA	10	11.1	12.3	1	17	11.76	2.5
S2MF11A-C	S2MF11CA-C	11A	11CA	11	12.2	13.5	1	18.2	10.99	2.5
S2MF12A-C	S2MF12CA-C	12A	12CA	12	13.3	14.7	1	19.9	10.05	2.5
S2MF13A-C	S2MF13CA-C	13A	13CA	13	14.4	15.9	1	21.5	9.3	1
S2MF14A-C	S2MF14CA-C	14A	14CA	14	15.6	17.2	1	23.2	8.62	1
S2MF15A-C	S2MF15CA-C	15A	15CA	15	16.7	18.5	1	24.4	8.2	1
S2MF16A-C	S2MF16CA-C	16A	16CA	16	17.8	19.7	1	26	7.69	1
S2MF17A-C	S2MF17CA-C	17A	17CA	17	18.9	20.9	1	27.6	7.25	1
S2MF18A-C	S2MF18CA-C	18A	18CA	18	20	22.1	1	29.2	6.85	1
S2MF19A-C	S2MF19CA-C	19A	19CA	19	21.1	23.3	1	30.6	6.54	1
S2MF20A-C	S2MF20CA-C	20A	20CA	20	22.2	24.5	1	32.4	6.17	1
S2MF22A-C	S2MF22CA-C	22A	22CA	22	24.4	26.9	1	35.5	5.63	1
S2MF24A-C	S2MF24CA-C	24A	24CA	24	26.7	29.5	1	38.9	5.14	1
S2MF26A-C	S2MF26CA-C	26A	26CA	26	28.9	31.9	1	42.1	4.75	1
S2MF28A-C	S2MF28CA-C	28A	28CA	28	31.1	34.4	1	45.4	4.41	1
S2MF30A-C	S2MF30CA-C	30A	30CA	30	33.3	36.8	1	48.4	4.13	1
S2MF33A-C	S2MF33CA-C	33A	33CA	33	36.7	40.6	1	53.3	3.75	1
S2MF36A-C	S2MF36CA-C	36A	36CA	36	40	44.2	1	58.1	3.44	1
S2MF40A-C	S2MF40CA-C	40A	40CA	40	44.4	49.1	1	64.5	3.1	1
S2MF43A-C	S2MF43CA-C	43A	43CA	43	47.8	52.8	1	69.4	2.88	1
S2MF45A-C	S2MF45CA-C	45A	45CA	45	50	55.3	1	72.7	2.75	1
S2MF48A-C	S2MF48CA-C	48A	48CA	48	53.3	58.9	1	77.4	2.58	1

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Part Number		Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Maximum Clamping Voltage V_C @I_{PP}	Maximum Reverse Surge Current	Reverse Leakage I_R @V_{RWM}
					Min.	Max.				
Directional		Directional		V_{RWM}	V_{BR}		I_T [1]	V_C	I_{PP} [2]	I_R [3]
Uni	Bi	Uni	Bi	V	V		mA	V	A	μA
S2MF51A-C	S2MF51CA-C	51A	51CA	51	56.7	62.7	1	82.4	2.43	1
S2MF54A-C	S2MF54CA-C	54A	54CA	54	60	66.3	1	87.1	2.3	1
S2MF58A-C	S2MF58CA-C	58A	58CA	58	64.4	71.2	1	93.6	2.14	1
S2MF60A-C	S2MF60CA-C	60A	60CA	60	66.7	73.7	1	96.8	2.07	1
S2MF64A-C	S2MF64CA-C	64A	64CA	64	71.1	78.6	1	103	1.94	1
S2MF70A-C	S2MF70CA-C	70A	70CA	70	77.8	86	1	113	1.77	1
S2MF75A-C	S2MF75CA-C	75A	75CA	75	83.3	92.1	1	121	1.65	1
S2MF78A-C	S2MF78CA-C	78A	78CA	78	86.7	95.8	1	126	1.59	1
S2MF80A-C	S2MF80CA-C	80A	80CA	80	88.8	97.6	1	129	1.55	1
S2MF85A-C	S2MF85CA-C	85A	85CA	85	94.4	104	1	137	1.46	1
S2MF90A-C	S2MF90CA-C	90A	90CA	90	100	111	1	146	1.37	1
S2MF100A-C	S2MF100CA-C	100A	100CA	100	111	123	1	162	1.23	1
S2MF110A-C	S2MF110CA-C	110A	110CA	110	122	135	1	177	1.13	1
S2MF120A-C	S2MF120CA-C	120A	120CA	120	133	147	1	193	1.04	1
S2MF130A-C	S2MF130CA-C	130A	130CA	130	144	159	1	209	0.96	1
S2MF140A-C	S2MF140CA-C	140A	140CA	140	155	171	1	224	0.89	1
S2MF150A-C	S2MF150CA-C	150A	150CA	150	167	185	1	243	0.82	1
S2MF160A-C	S2MF160CA-C	160A	160CA	160	178	197	1	259	0.77	1
S2MF170A-C	S2MF170CA-C	170A	170CA	170	189	209	1	275	0.73	1
S2MF180A-C	S2MF180CA-C	180A	180CA	180	200	220	1	292	0.68	1
S2MF190A-C	S2MF190CA-C	190A	190CA	190	211	232	1	308	0.65	1
S2MF200A-C	S2MF200CA-C	200A	200CA	200	224	247	1	324	0.62	1
S2MF220A-C	S2MF220CA-C	220A	220CA	220	246	272	1	356	0.56	1

Notes:
1. tp≤50ms, Pulse test: tp≤50ms.
2. Surge current waveform per Fig. 2 and derated per Fig.3.
3. For bi-directional types having V_{RWM} of 10V and less, the I_R limit is doubled.

RATINGS AND CHARACTERISTIC CURVES

FIG1:Peak Pulse Power Rating Curve

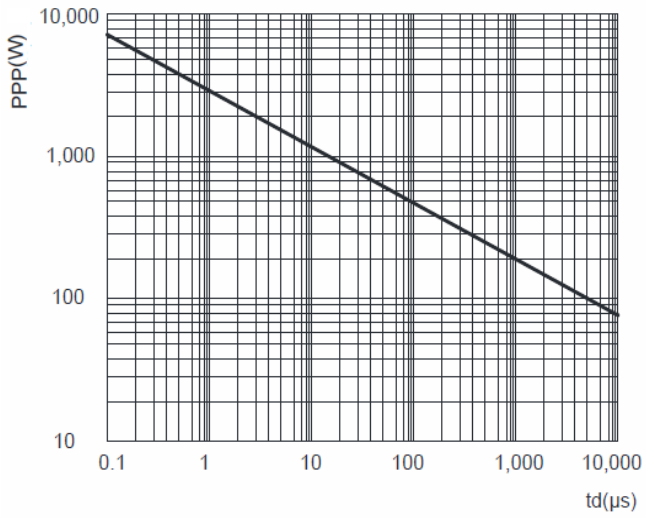


FIG2: Pulse Waveform

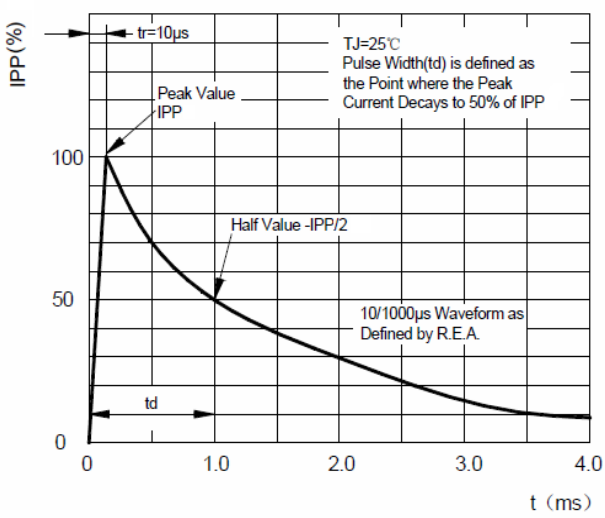


FIG3: Pulse Power or Current vs. Initial Junction Temperature

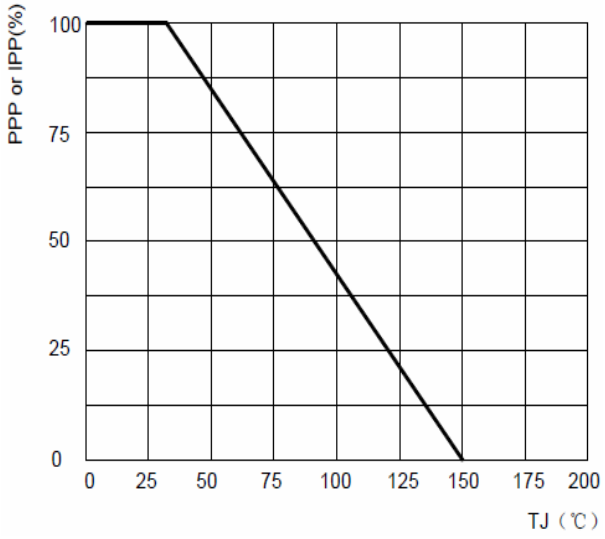


FIG4: Forward Voltage Curve