TECH PUBLIC
台舟电子

SMAFJ Series
Power TVS in SMAFL

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Features

- Glass passivated chip
- 400W peak pulse power(10/1000us)
- Uni and Bidirectional unit
- Low clamping voltage
- Low Leakage current
- Very fast response time

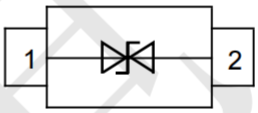
Mechanical Data

- **Case:** SMAFL (plastic package). RoHS compliant

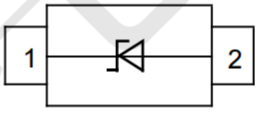
Applications

- Computers
- Telecom system
- Industrial equipments
- Consumer electronic applications
- Other VCC bus and I/O interfaces

SMAFL



Bidirectional



Unidirectional

Absolute Maximum Ratings(T_A=25。C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000us waveform (1)	P_{PP}	400	W
Maximum peak reverse pulse current a 10/1000us waveform (1)	I_{PP}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave (2)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25A for unidirectional only(3)	V_F	3.5/5.0	V
ESD Voitage per IEC6100-4-2 Air Contact	Vesd	±8 ±15	kv
Thermal resistance	$R_{\theta JA}$	120	℃/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	℃

Electrical Characteristics (T =25。C unless otherwise noted)

Part Number	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(uA)	Breakdown Voltage@I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@ I_{PP} V_C (V)
				V_{BR} min(V)	V_{BR} max(V)	I_T(mA)		
SMAFJ5.0A	Uni-Dir	5.0	400	6.4	7.07	10	65.22	9.2
SMAFJ5.0CA	Bi-Dir	5.0	800	6.4	7.07	10	65.22	9.2
SMAFJ6.0A	Uni-Dir	6.0	400	6.67	7.37	10	58.25	10.3
SMAFJ6.0CA	Bi-Dir	6.0	800	6.67	7.37	10	58.25	10.3
SMAFJ6.5A	Uni-Dir	6.5	250	7.22	7.98	10	53.57	11.2
SMAFJ6.5CA	Bi-Dir	6.5	500	7.22	7.98	10	53.57	11.2
SMAFJ7.0A	Uni-Dir	7.0	100	7.78	8.60	10	50.00	12.0
SMAFJ7.0CA	Bi-Dir	7.0	200	7.78	8.60	10	50.00	12.0
SMAFJ7.5A	Uni-Dir	7.5	50	8.33	9.21	1	46.51	12.9
SMAFJ7.5CA	Bi-Dir	7.5	100	8.33	9.21	1	46.51	12.9
SMAFJ8.0A	Uni-Dir	8.0	25	8.89	9.83	1	44.12	13.6
SMAFJ8.0CA	Bi-Dir	8.0	50	8.89	9.83	1	44.12	13.6
SMAFJ8.5A	Uni-Dir	8.5	5	9.44	10.40	1	41.67	14.4
SMAFJ8.5CA	Bi-Dir	8.5	10	9.44	10.40	1	41.67	14.4
SMAFJ9.0A	Uni-Dir	9.0	5	10.00	11.10	1	38.96	15.4
SMAFJ9.0CA	Bi-Dir	9.0	10	10.00	11.10	1	38.96	15.4
SMAFJ10A	Uni-Dir	10.0	5	11.10	12.30	1	35.29	17.0
SMAFJ10CA	Bi-Dir	10.0	10	11.10	12.30	1	35.29	17.0
SMAFJ11A	Uni-Dir	11.0	1	12.20	13.50	1	32.97	18.2
SMAFJ11CA	Bi-Dir	11.0	1	12.20	13.50	1	32.97	18.2
SMAFJ12A	Uni-Dir	12.0	1	13.30	14.70	1	30.15	19.9
SMAFJ12CA	Bi-Dir	12.0	1	13.30	14.70	1	30.15	19.9
SMAFJ13A	Uni-Dir	13.0	1	14.40	15.90	1	27.91	21.5
SMAFJ13CA	Bi-Dir	13.0	1	14.40	15.90	1	27.91	21.5
SMAFJ14A	Uni-Dir	14.0	1	15.60	17.20	1	25.86	23.2
SMAFJ14CA	Bi-Dir	14.0	1	15.60	17.20	1	25.86	23.2
SMAFJ15A	Uni-Dir	15.0	1	16.70	18.50	1	24.59	24.4
SMAFJ15CA	Bi-Dir	15.0	1	16.70	18.50	1	24.59	24.4
SMAFJ16A	Uni-Dir	16.0	1	17.80	19.70	1	23.08	26.0
SMAFJ16CA	Bi-Dir	16.0	1	17.80	19.70	1	23.08	26.0
SMAFJ17A	Uni-Dir	17.0	1	18.90	20.90	1	21.74	27.6
SMAFJ17CA	Bi-Dir	17.0	1	18.90	20.90	1	21.74	27.6
SMAFJ18A	Uni-Dir	18.0	1	20.00	22.10	1	20.55	29.2
SMAFJ18CA	Bi-Dir	18.0	1	20.00	22.10	1	20.55	29.2
SMAFJ19A	Uni-Dir	19.0	1	21.10	23.30	1	19.49	30.8
SMAFJ19CA	Bi-Dir	19.0	1	21.10	23.30	1	19.49	30.8
SMAFJ20A	Uni-Dir	20.0	1	22.20	24.50	1	18.52	32.4
SMAFJ20CA	Bi-Dir	20.0	1	22.20	24.50	1	18.52	32.4

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Part Number	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(uA)	Breakdown Voltage@I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@I_{PP} V_C (V)
				V_{BR} min(V)	V_{BR} max(V)	I_T(mA)		
SMAFJ22A	Uni-Dir	22.0	1	24.40	26.90	1	16.90	35.5
SMAFJ22CA	Bi-Dir	22.0	1	24.40	26.90	1	16.90	35.5
SMAFJ24A	Uni-Dir	24.0	1	26.70	29.50	1	15.42	38.9
SMAFJ24CA	Bi-Dir	24.0	1	26.70	29.50	1	15.42	38.9
SMAFJ26A	Uni-Dir	26.0	1	28.90	31.90	1	14.25	42.1
SMAFJ26CA	Bi-Dir	26.0	1	28.90	31.90	1	14.25	42.1
SMAFJ28A	Uni-Dir	28.0	1	31.10	34.40	1	13.22	45.4
SMAFJ28CA	Bi-Dir	28.0	1	31.10	34.40	1	13.22	45.4
SMAFJ30A	Uni-Dir	30.0	1	33.30	36.80	1	12.40	48.4
SMAFJ30CA	Bi-Dir	30.0	1	33.30	36.80	1	12.40	48.4
SMAFJ33A	Uni-Dir	33.0	1	36.70	40.60	1	11.26	53.3
SMAFJ33CA	Bi-Dir	33.0	1	36.70	40.60	1	11.26	53.3
SMAFJ36A	Uni-Dir	36.0	1	40.00	44.20	1	10.33	58.1
SMAFJ36CA	Bi-Dir	36.0	1	40.00	44.20	1	10.33	58.1
SMAFJ40A	Uni-Dir	40.0	1	44.40	49.10	1	9.30	64.5
SMAFJ40CA	Bi-Dir	40.0	1	44.40	49.10	1	9.30	64.5
SMAFJ43A	Uni-Dir	43.0	1	47.80	52.80	1	8.65	69.4
SMAFJ43CA	Bi-Dir	43.0	1	47.80	52.80	1	8.65	69.4
SMAFJ45A	Uni-Dir	45.0	1	50.00	55.30	1	8.25	72.7
SMAFJ45CA	Bi-Dir	45.0	1	50.00	55.30	1	8.25	72.7
SMAFJ48A	Uni-Dir	48.0	1	53.30	58.90	1	7.75	77.4
SMAFJ48CA	Bi-Dir	48.0	1	53.30	58.90	1	7.75	77.4
SMAFJ51A	Uni-Dir	51.0	1	56.70	62.70	1	7.28	82.4
SMAFJ51CA	Bi-Dir	51.0	1	56.70	62.70	1	7.28	82.4
SMAFJ54A	Uni-Dir	54.0	1	60.00	66.30	1	6.89	87.1
SMAFJ54CA	Bi-Dir	54.0	1	60.00	66.30	1	6.89	87.1
SMAFJ58A	Uni-Dir	58.0	1	64.40	71.20	1	6.41	93.6
SMAFJ58CA	Bi-Dir	58.0	1	64.40	71.20	1	6.41	93.6
SMAFJ60A	Uni-Dir	60.0	1	66.70	73.70	1	6.20	96.8
SMAFJ60CA	Bi-Dir	60.0	1	66.70	73.70	1	6.20	96.8
SMAFJ64A	Uni-Dir	64.0	1	71.10	78.60	1	5.83	103.0
SMAFJ64CA	Bi-Dir	64.0	1	71.10	78.60	1	5.83	103.0
SMAFJ70A	Uni-Dir	70.0	1	77.80	86.00	1	5.31	113.0
SMAFJ70CA	Bi-Dir	70.0	1	77.80	86.00	1	5.31	113.0
SMAFJ75A	Uni-Dir	75.0	1	83.30	92.10	1	4.96	121.0
SMAFJ75CA	Bi-Dir	75.0	1	83.30	92.10	1	4.96	121.0
SMAFJ78A	Uni-Dir	78.0	1	86.70	95.80	1	4.76	126.0
SMAFJ78CA	Bi-Dir	78.0	1	86.70	95.80	1	4.76	126.0

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				V_{BR} min(V)	V_{BR} max(V)	I_T(mA)		
SMAFJ80A	Uni-Dir	80.0	1	88.80	97.60	1	4.63	129.6
SMAFJ80CA	Bi-Dir	80.0	1	88.80	97.60	1	4.63	129.6
SMAFJ85A	Uni-Dir	85.0	1	94.40	104.00	1	4.38	137.0
SMAFJ85CA	Bi-Dir	85.0	1	94.40	104.00	1	4.38	137.0
SMAFJ90A	Uni-Dir	90.0	1	100.00	111.00	1	4.11	146.0
SMAFJ90CA	Bi-Dir	90.0	1	100.00	111.00	1	4.11	146.0
SMAFJ100A	Uni-Dir	100.0	1	111.00	123.00	1	3.70	162.0
SMAFJ100CA	Bi-Dir	100.0	1	111.00	123.00	1	3.70	162.0
SMAFJ110A	Uni-Dir	110.0	1	122.00	135.00	1	3.39	177.0
SMAFJ110CA	Bi-Dir	110.0	1	122.00	135.00	1	3.39	177.0
SMAFJ120A	Uni-Dir	120.0	1	133.00	147.00	1	3.11	193.0
SMAFJ120CA	Bi-Dir	120.0	1	133.00	147.00	1	3.11	193.0
SMAFJ130A	Uni-Dir	130.0	1	144.00	159.00	1	2.87	209.0
SMAFJ130CA	Bi-Dir	130.0	1	144.00	159.00	1	2.87	209.0
SMAFJ140A	Uni-Dir	140.0	1	155.00	171.00	1	2.65	226.8
SMAFJ140CA	Bi-Dir	140.0	1	155.00	171.00	1	2.65	226.8
SMAFJ150A	Uni-Dir	150.0	1	167.00	185.00	1	2.47	243.0
SMAFJ150CA	Bi-Dir	150.0	1	167.00	185.00	1	2.47	243.0
SMAFJ160A	Uni-Dir	160.0	1	178.00	197.00	1	2.32	259.0
SMAFJ160CA	Bi-Dir	160.0	1	178.00	197.00	1	2.32	259.0
SMAFJ170A	Uni-Dir	170.0	1	189.00	209.00	1	2.18	275.0
SMAFJ170CA	Bi-Dir	170.0	1	189.00	209.00	1	2.18	275.0
SMAFJ180A	Uni-Dir	180.0	1	200.00	220.00	1	2.06	291.6
SMAFJ180CA	Bi-Dir	180.0	1	200.00	220.00	1	2.06	291.6
SMAFJ190A	Uni-Dir	190.0	1	211.00	232.00	1	1.95	307.8
SMAFJ190CA	Bi-Dir	190.0	1	211.00	232.00	1	1.95	307.8
SMAFJ200A	Uni-Dir	200.0	1	224.00	247.00	1	1.85	324.0
SMAFJ200CA	Bi-Dir	200.0	1	224.00	247.00	1	1.85	324.0

Typical Characteristics (Tamb = 25 。C unless otherwise specified)

Fig. 1 - Peak Pulse Power Rating Curve

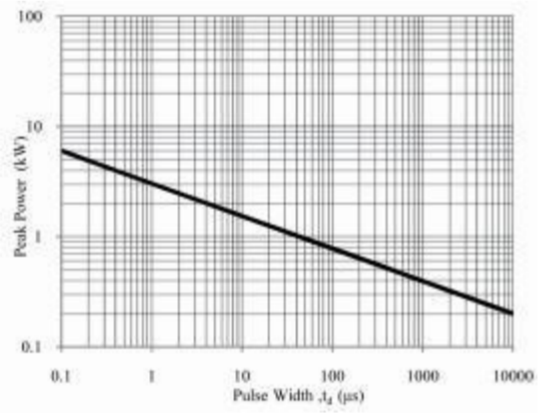


Fig. 2 - Pulse Derating Curve

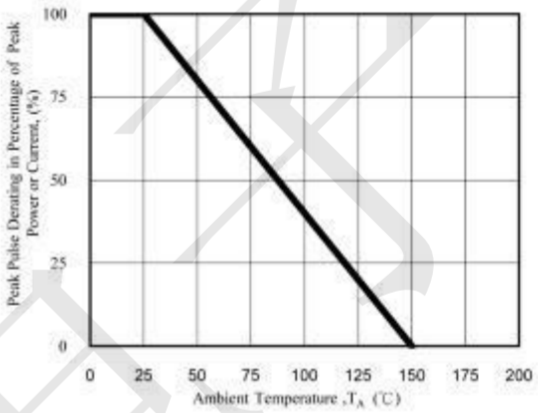


Fig. 3 - Pulse Waveform

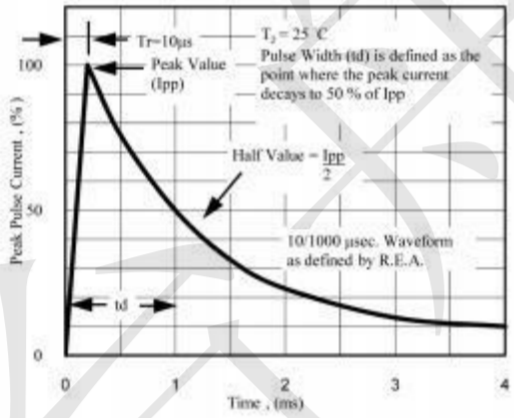
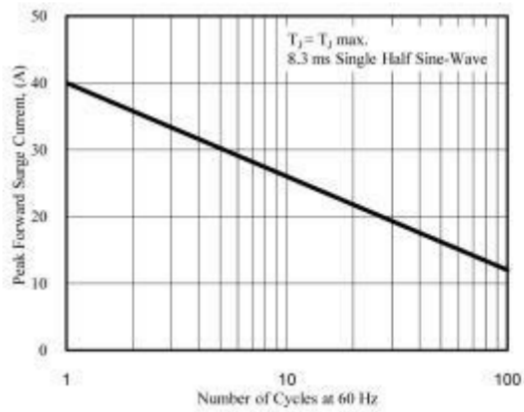
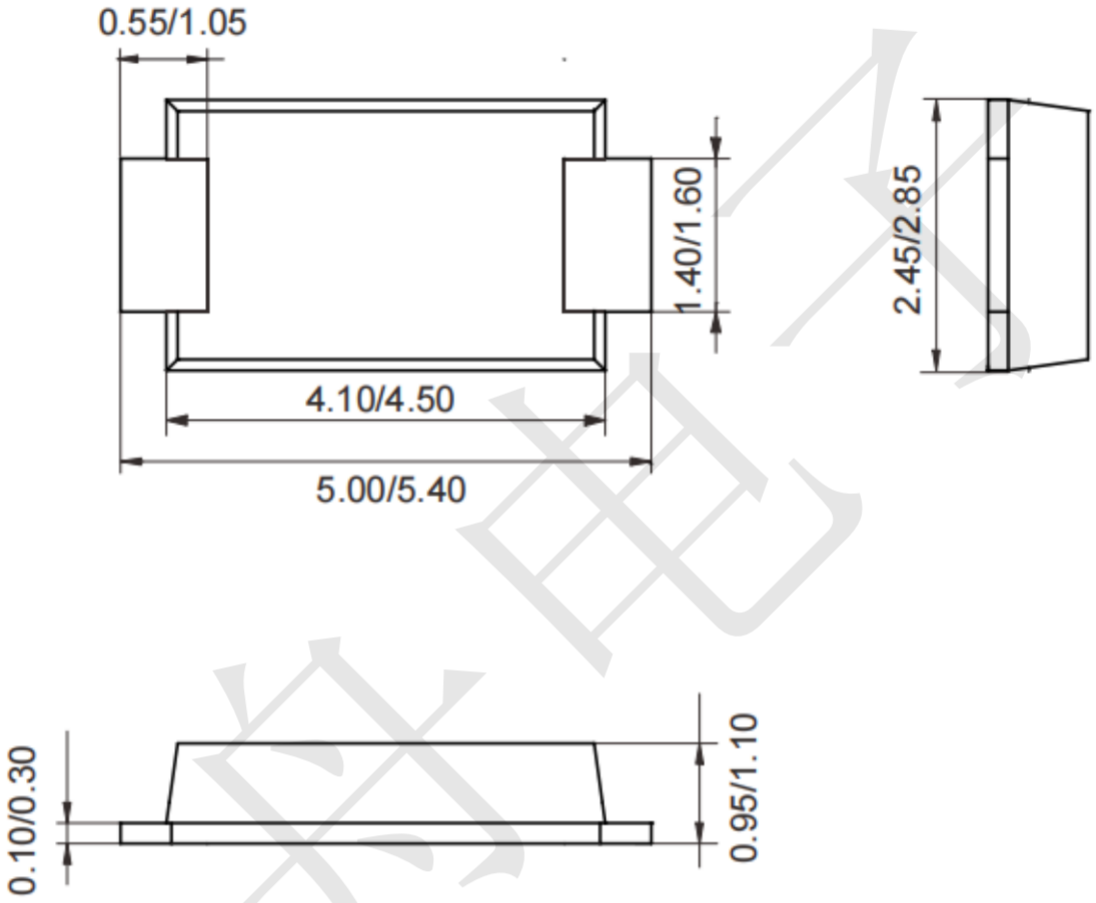
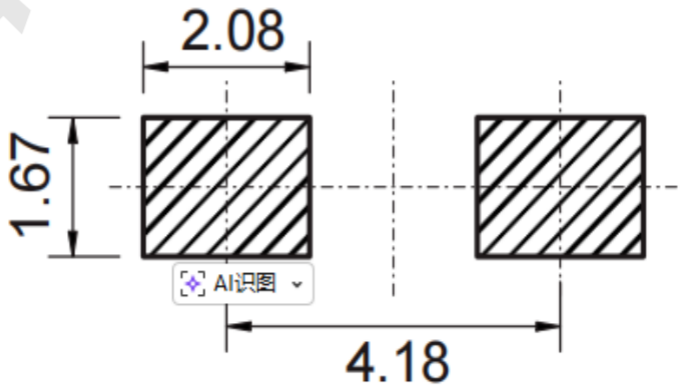


Fig. 4- Maximum Non-Repetitive Surge Current



Outline Drawing - SMAFL(Unit: mm)



Mounting Pad Layout-SMAFL(Unit: mm)