

SMAFJ*** CASeries

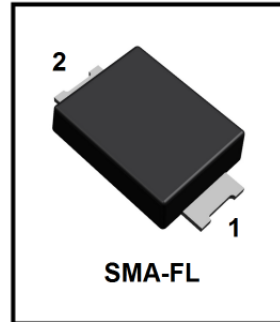
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 5.0 TO 250 Volts

400 Watt Peak Pulse Power

FEATURES

- * Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- * For surface mounted applications in order to optimize board space
- * Low profile package
- * Built-in strain relief
- * Glass passivated junction
- * Low inductance
- * Excellent clamping capability
- * Repetition Rate (duty cycle):0.01%
- * Fast response time: typically less than 1.0ps from 0 Volts to V(BR) for unidirectional types
- * Typical IR less than 1mA above 10V
- * High temperature soldering guaranteed: 260°C/10 seconds,
- * We declare that the material of product compliance with RoHS requirements and Halogen Free.



MECHANICAL DATA

Case: JEDEC SMA-FL molded plastic

Terminals: Plated leads, solderable per MIL-STD-202, Method 208

Polarity: Without Color band denoted cathode except Bipolar

Mounting Position: Any

Weight: 28mg

1.DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SMBFJ5.0CA thru types SMAFJ250CA

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ\text{C}$, $T_P=1\text{ms}$ (Note 1)	P_{PPM}	Minimum400	Watts
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ (Note 2)	$P_{M(AV)}$	1.0	Watts
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

NOTES:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.
2. Mounted on Copper Leaf area of 1.57in²(40mm²).
3. 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.

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Bidirectional- Directional Part Number	Device marking code	Reverse Stand-off Voltage VRWM (V)	Breakdown Voltage VBR (V) Min. @IT	Breakdown Voltage VBR (V) Max. @IT	Test Current IT (mA)	Maximum Clamping Voltage @IPP VC (V)	Peak Pulse Current Ipp (A)	Reverse Leakage @VRWM IR (uA)
SMAFJ5.0CA	5.0A	5.00	6.40	7.00	10.00	9.20	43.5	800
SMAFJ6.0CA	6.0A	6.00	6.67	7.37	10.00	10.30	38.8	800
SMAFJ6.5CA	6.5A	6.50	7.22	7.98	10.00	11.20	35.7	500
SMAFJ7.0CA	7.0A	7.00	7.78	8.60	10.00	12.00	33.3	200
SMAFJ7.5CA	7.5A	7.50	8.33	9.21	1.00	12.90	31.0	100
SMAFJ8.0CA	8.0A	8.00	8.89	9.83	1.00	13.60	29.4	50
SMAFJ8.5CA	8.5A	8.50	9.44	10.40	1.00	14.40	27.8	20
SMAFJ9.0CA	9.0A	9.00	10.00	11.10	1.00	15.40	26.0	10
SMAFJ10CA	10A	10.00	11.10	12.30	1.00	17.00	23.5	1
SMAFJ11CA	11A	11.00	12.20	13.50	1.00	18.20	22.0	1
SMAFJ12CA	12A	12.00	13.30	14.70	1.00	19.90	20.1	1
SMAFJ13CA	13A	13.00	14.40	15.90	1.00	21.50	18.6	1
SMAFJ14CA	14A	14.00	15.60	17.20	1.00	23.20	17.2	1
SMAFJ15CA	15A	15.00	16.70	18.50	1.00	24.40	16.4	1
SMAFJ16CA	16A	16.00	17.80	19.70	1.00	26.00	15.4	1
SMAFJ17CA	17A	17.00	18.90	20.90	1.00	27.60	14.5	1
SMAFJ18CA	18A	18.00	20.00	22.10	1.00	29.20	13.7	1
SMAFJ20CA	20A	20.00	22.20	24.50	1.00	32.40	12.3	1
SMAFJ22CA	22A	22.00	24.40	26.90	1.00	35.50	11.3	1
SMAFJ24CA	24A	24.00	26.70	29.50	1.00	38.90	10.3	1
SMAFJ26CA	26A	26.00	28.90	31.90	1.00	42.10	9.5	1
SMAFJ28CA	28A	28.00	31.10	34.40	1.00	45.40	8.8	1
SMAFJ30CA	30A	30.00	33.30	36.80	1.00	48.40	8.3	1
SMAFJ33CA	33A	33.00	36.70	40.60	1.00	53.30	7.5	1
SMAFJ36CA	36A	36.00	40.00	44.20	1.00	58.10	6.9	1
SMAFJ40CA	40A	40.00	44.40	49.10	1.00	64.50	6.2	1
SMAFJ43CA	43A	43.00	47.80	52.80	1.00	69.40	5.8	1
SMAFJ45CA	45A	45.00	50.00	55.30	1.00	72.70	5.5	1
SMAFJ48CA	48A	48.00	53.30	58.90	1.00	77.40	5.2	1
SMAFJ51CA	51A	51.00	56.70	62.70	1.00	82.40	4.9	1
SMAFJ54CA	54A	54.00	60.00	66.30	1.00	87.10	4.6	1
SMAFJ58CA	58A	58.00	64.40	71.20	1.00	93.60	4.3	1
SMAFJ60CA	60A	60.00	66.70	73.70	1.00	96.80	4.1	1
SMAFJ64CA	64A	64.00	71.10	78.60	1.00	103.00	3.9	1
SMAFJ70CA	70A	70.00	77.80	86.00	1.00	113.00	3.5	1
SMAFJ75CA	75A	75.00	83.30	92.10	1.00	121.00	3.3	1
SMAFJ78CA	78A	78.00	86.70	95.80	1.00	126.00	3.2	1
SMAFJ85CA	85A	85.00	94.40	104.00	1.00	137.00	2.9	1
SMAFJ90CA	90A	90.00	100.00	111.00	1.00	146.00	2.7	1
SMAFJ100CA	100A	100.00	111.00	123.00	1.00	162.00	2.5	1
SMAFJ110CA	110A	110.00	122.00	135.00	1.00	177.00	2.3	1
SMAFJ120CA	120A	120.00	133.00	147.00	1.00	193.00	2.1	1
SMAFJ130CA	130A	130.00	144.00	159.00	1.00	209.00	1.9	1
SMAFJ150CA	150A	150.00	167.00	185.00	1.00	243.00	1.6	1
SMAFJ160CA	160A	160.00	178.00	197.00	1.00	259.00	1.5	1
SMAFJ170CA	170A	170.00	189.00	209.00	1.00	275.00	1.5	1
SMAFJ180CA	180A	180.00	198.00	221.00	1.00	291.00	1.4	1
SMAFJ190CA	190A	190.00	209.00	233.00	1.00	307.00	1.3	1
SMAFJ200CA	200A	200.00	220.00	246.00	1.00	324.00	1.2	1
SMAFJ220CA	220A	220.00	246.00	272.00	1.00	356.00	1.1	1
SMAFJ250CA	250A	250.00	279.00	309.00	1.00	405.00	1.0	1

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.
For parts without A , the VBR is + 10%

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2.Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Fig. 1-Peak Pulse Power Rating Curve

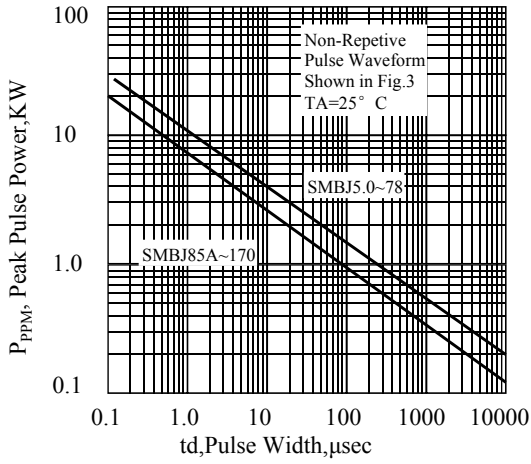


Fig. 2-Pulse Derating Curve

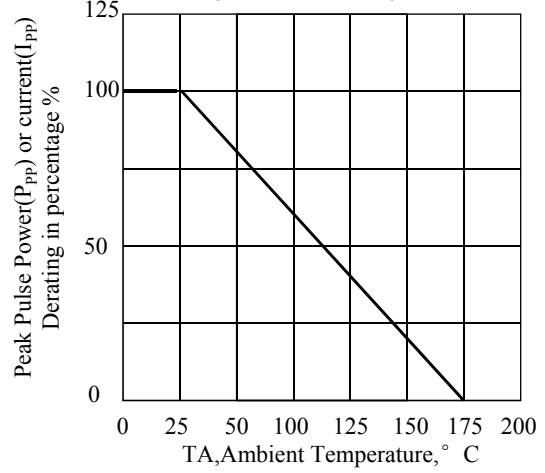


Fig. 3-Pulse Waveform

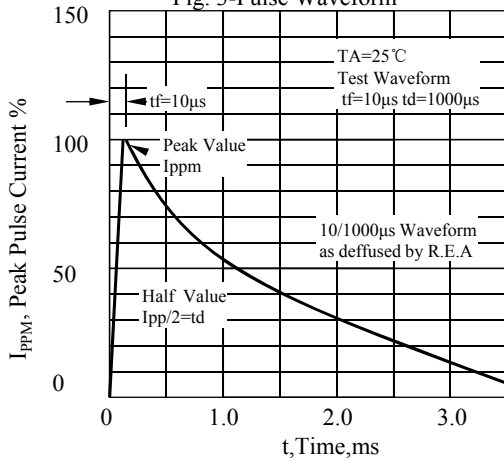


Fig. 4-Typical Junction Capacitance Unidirectional

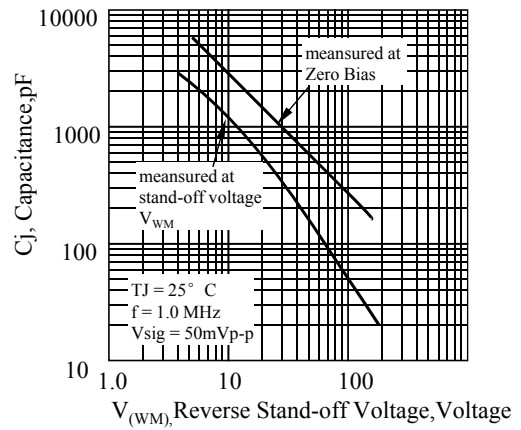
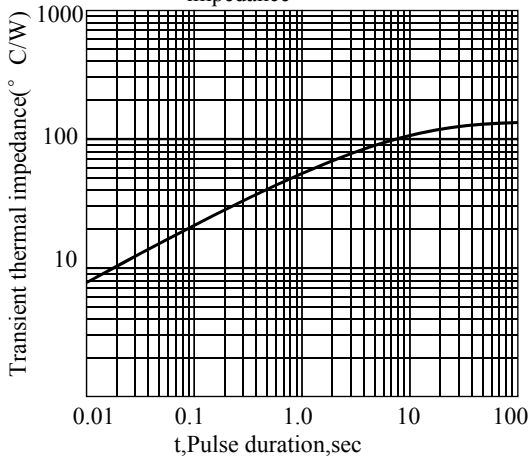
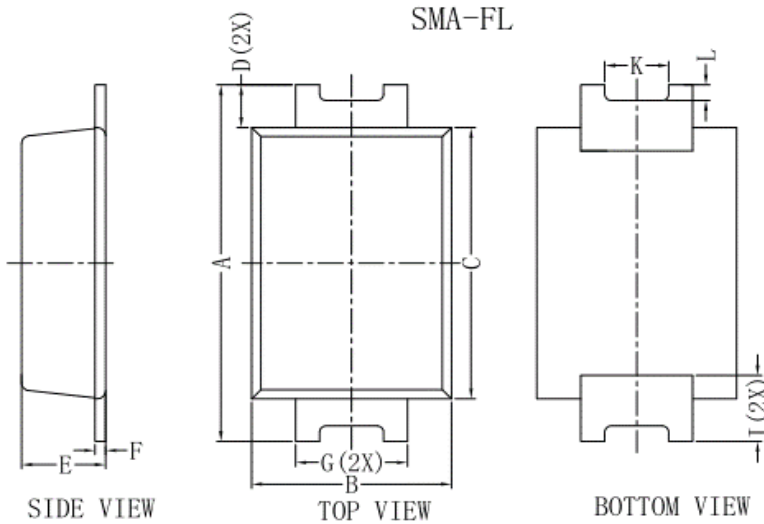


Fig 5. - typical transient thermal impedance



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3.OUTLINE AND DIMENSIONS

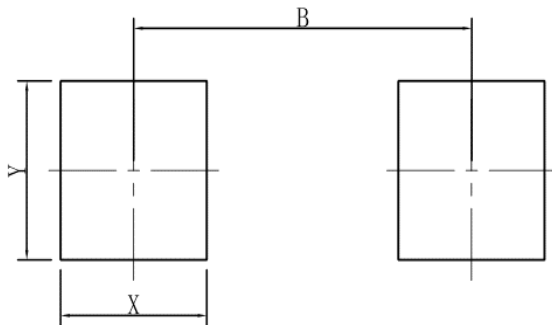


SMA-FL			
DIM	MIN	MAX	Typ.
A	4.40	4.80	4.60
B	2.30	2.70	2.60
C	3.30	3.70	3.50
D			0.55
E	0.90	1.20	1.05
F	0.11	0.21	0.17
G	1.30	1.50	1.40
I	-	-	0.90
K	-	-	0.80
L	-	-	0.20
All Dimensions in mm			

GENERAL NOTES

- 1.Top package surface finish Ra0.4±0.2um
- 2.Bottom package surface finish Ra0.7±0.2um

4.SOLDERING FOOTPRINT



SMA-FL	
DIM	(mm)
X	1.60
Y	1.80
B	3.70



Proprietary Information

Title: Power Packages Product Packing Specification

功率产品包装规范

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8.1.2 Label position and QA stamp position.(Empty area) 标签张贴位置及QA印章位置。(印章盖在标签空白区)

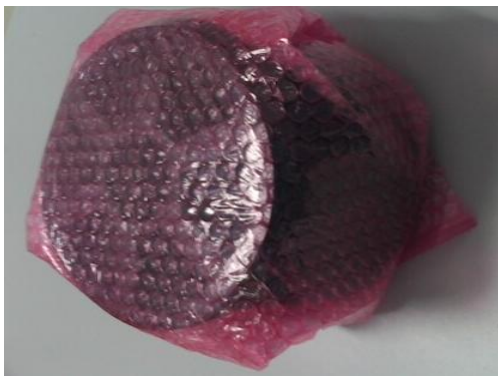


7英寸卷盘标签张贴及QA印章位置



13英寸卷盘标签张贴及QA印章位置

8.1.3 Ensure direction In the same reel. The same steel coil plate direction, With antistatic bubble to package reel. Refer to the below picture.
同一箱内的卷盘方向一致,用防静电泡沫对卷盘进行包裹。



7英寸卷盘防静电泡沫包裹



13英寸卷盘防静电泡沫包裹



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8.1.4 Put in the antistatic packing box after packaged reels. And QA stamp on the box label .

将包装好的卷盘放入防静电纸箱中，并在盒标签上盖章。



7 英寸卷盘内盒及标签



13 英寸卷盘内盒及标签

8.1.5 Product use printing inner box. 产品使用LRC印字内箱。



7英寸卷盘内箱印字（侧面）



13英寸卷盘内箱印字（正面）

8.1.6 Inner box packing quantity requirement. 内盒包装数量要求。

Product Description	QTY
SOD123-FL	1-10Reels
SOD323-HE	1-10Reels
SMA-FL	1-7Reels
SMB-FL	1-4Reels

8.1.7 With transparent tape sealing. 透明胶带封箱。



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7英寸内箱封盒



13英寸内箱封盒

8.1.8 Outer box size and packing quantity requirement, 外箱尺寸及包装数量要求。

Product Description	卷盘尺寸	Height (H)	Width (W)	Length (L)	Max. Qty
Power Device	7 英寸	410mm	400mm	445mm	12
Power Device	13 英寸	410mm	400mm	445mm	5



7 英寸卷盘产品装箱



13 英寸卷盘产品装箱

统一方向



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Title: Power Packages Marking & Taping Specification

功率封装字模和编带规范

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8.2 Standard Products Taping Specification

标准产品编带规范

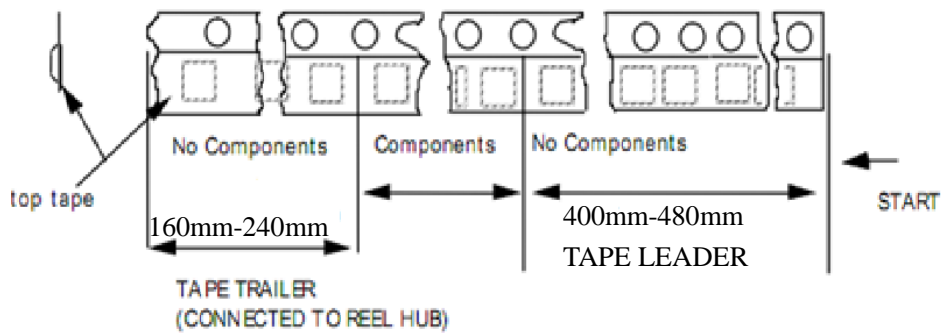
8.2.1 Tape length of no component

空带长度说明

Taping leader length 引导部分: $440\text{mm} \pm 40\text{mm}$, Tape trailer 尾部: $200\text{mm} \pm 40\text{mm}$

Figure 4

Tape Ends For Finished Goods Reel



8.2.2 Component packaging orientation: The cathode lead is close to the carrier tape's index hole.

产品放置方向: 印阴极带引脚邻近载带索引孔





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Title: Power Packages Marking & Taping Specification

功率封装字模和编带规范

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8.2.3 Tape enwind orientation

编带缠绕方向要求



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