SMAFJ*** Series
S-SMAFJ*** Series

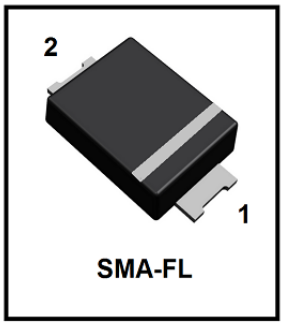
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

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.
* S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



MECHANICAL DATA

Case: JEDEC SMA-FL molded plastic
Terminals: Plated leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denoted cathode except Bipolar
Mounting Position: Any
Weight: 28mg

1.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°C, T_P=1ms(Note 1)	P_{PPM}	Minimum400	Watts
Steady State Power Dissipation at T_L=75°C(Note 2)	$P_{M(AV)}$	1.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load(JECED Method) (Note 3)	I_{FSM}	40	Amps
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 TA=25°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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Uni-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)
SMAFJ5.0A	5.0A	5.00	6.40	7.00	10.00	9.20	43.5	800
SMAFJ6.0A	6.0A	6.00	6.67	7.37	10.00	10.30	38.8	800
SMAFJ6.5A	6.5A	6.50	7.22	7.98	10.00	11.20	35.7	500
SMAFJ7.0A	7.0A	7.00	7.78	8.60	10.00	12.00	33.3	200
SMAFJ7.5A	7.5A	7.50	8.33	9.21	1.00	12.90	31.0	100
SMAFJ8.0A	8.0A	8.00	8.89	9.83	1.00	13.60	29.4	50
SMAFJ8.5A	8.5A	8.50	9.44	10.40	1.00	14.40	27.8	20
SMAFJ9.0A	9.0A	9.00	10.00	11.10	1.00	15.40	26.0	10
SMAFJ10A	10A	10.00	11.10	12.30	1.00	17.00	23.5	1
SMAFJ11A	11A	11.00	12.20	13.50	1.00	18.20	22.0	1
SMAFJ12A	12A	12.00	13.30	14.70	1.00	19.90	20.1	1
SMAFJ13A	13A	13.00	14.40	15.90	1.00	21.50	18.6	1
SMAFJ14A	14A	14.00	15.60	17.20	1.00	23.20	17.2	1
SMAFJ15A	15A	15.00	16.70	18.50	1.00	24.40	16.4	1
SMAFJ16A	16A	16.00	17.80	19.70	1.00	26.00	15.4	1
SMAFJ17A	17A	17.00	18.90	20.90	1.00	27.60	14.5	1
SMAFJ18A	18A	18.00	20.00	22.10	1.00	29.20	13.7	1
SMAFJ20A	20A	20.00	22.20	24.50	1.00	32.40	12.3	1
SMAFJ22A	22A	22.00	24.40	26.90	1.00	35.50	11.3	1
SMAFJ24A	24A	24.00	26.70	29.50	1.00	38.90	10.3	1
SMAFJ26A	26A	26.00	28.90	31.90	1.00	42.10	9.5	1
SMAFJ28A	28A	28.00	31.10	34.40	1.00	45.40	8.8	1
SMAFJ30A	30A	30.00	33.30	36.80	1.00	48.40	8.3	1
SMAFJ33A	33A	33.00	36.70	40.60	1.00	53.30	7.5	1
SMAFJ36A	36A	36.00	40.00	44.20	1.00	58.10	6.9	1
SMAFJ40A	40A	40.00	44.40	49.10	1.00	64.50	6.2	1
SMAFJ43A	43A	43.00	47.80	52.80	1.00	69.40	5.8	1
SMAFJ45A	45A	45.00	50.00	55.30	1.00	72.70	5.5	1
SMAFJ48A	48A	48.00	53.30	58.90	1.00	77.40	5.2	1
SMAFJ51A	51A	51.00	56.70	62.70	1.00	82.40	4.9	1
SMAFJ54A	54A	54.00	60.00	66.30	1.00	87.10	4.6	1
SMAFJ58A	58A	58.00	64.40	71.20	1.00	93.60	4.3	1
SMAFJ60A	60A	60.00	66.70	73.70	1.00	96.80	4.1	1
SMAFJ64A	64A	64.00	71.10	78.60	1.00	103.00	3.9	1
SMAFJ70A	70A	70.00	77.80	86.00	1.00	113.00	3.5	1
SMAFJ75A	75A	75.00	83.30	92.10	1.00	121.00	3.3	1
SMAFJ78A	78A	78.00	86.70	95.80	1.00	126.00	3.2	1
SMAFJ85A	85A	85.00	94.40	104.00	1.00	137.00	2.9	1
SMAFJ90A	90A	90.00	100.00	111.00	1.00	146.00	2.7	1
SMAFJ100A	100A	100.00	111.00	123.00	1.00	162.00	2.5	1
SMAFJ110A	110A	110.00	122.00	135.00	1.00	177.00	2.3	1
SMAFJ120A	120A	120.00	133.00	147.00	1.00	193.00	2.1	1
SMAFJ130A	130A	130.00	144.00	159.00	1.00	209.00	1.9	1
SMAFJ150A	150A	150.00	167.00	185.00	1.00	243.00	1.6	1
SMAFJ160A	160A	160.00	178.00	197.00	1.00	259.00	1.5	1
SMAFJ170A	170A	170.00	189.00	209.00	1.00	275.00	1.5	1
SMAFJ180A	180A	180.00	198.00	221.00	1.00	291.00	1.4	1
SMAFJ190A	190A	190.00	209.00	233.00	1.00	307.00	1.3	1
SMAFJ200A	200A	200.00	220.00	246.00	1.00	324.00	1.2	1
SMAFJ220A	220A	220.00	246.00	272.00	1.00	356.00	1.1	1
SMAFJ250A	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

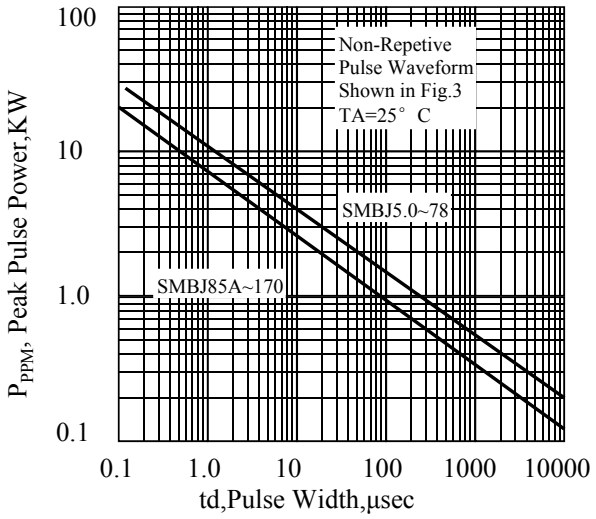


Fig. 2-Pulse Derating Curve

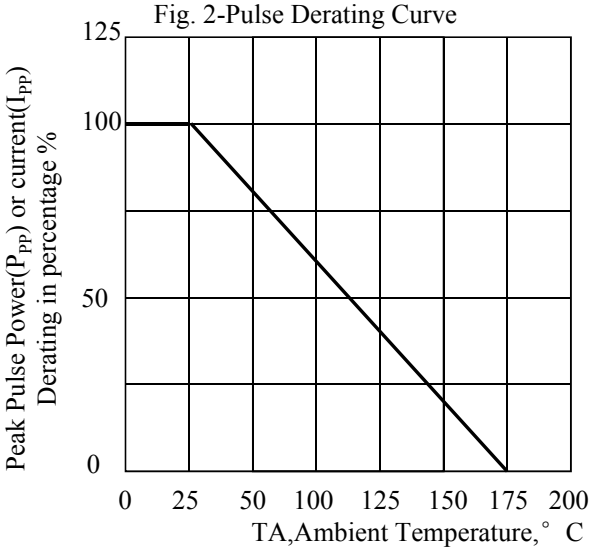


Fig. 3-Pulse Waveform

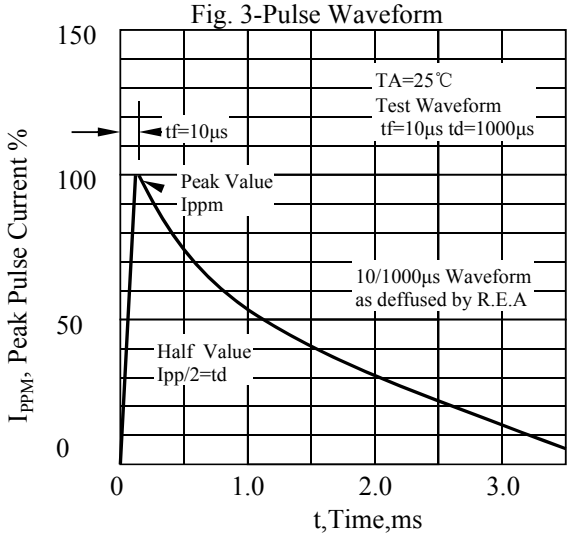


Fig. 4-Typical Junction Capacitance
Unidirectional

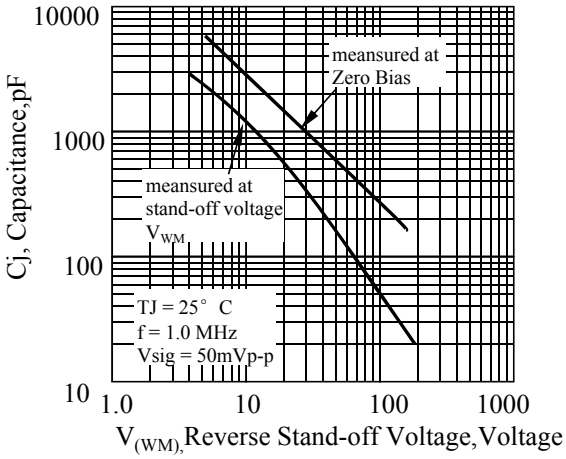


Fig 5. – typical transient thermal
impedance

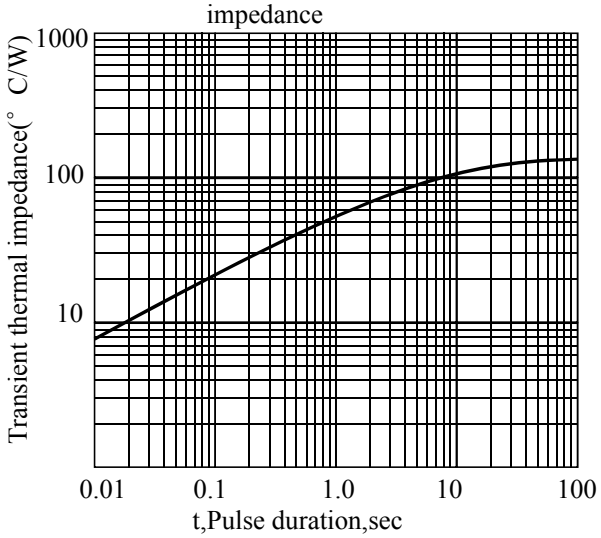
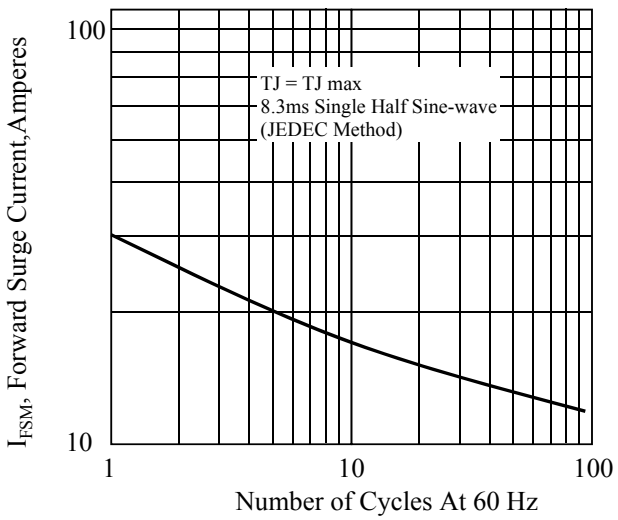
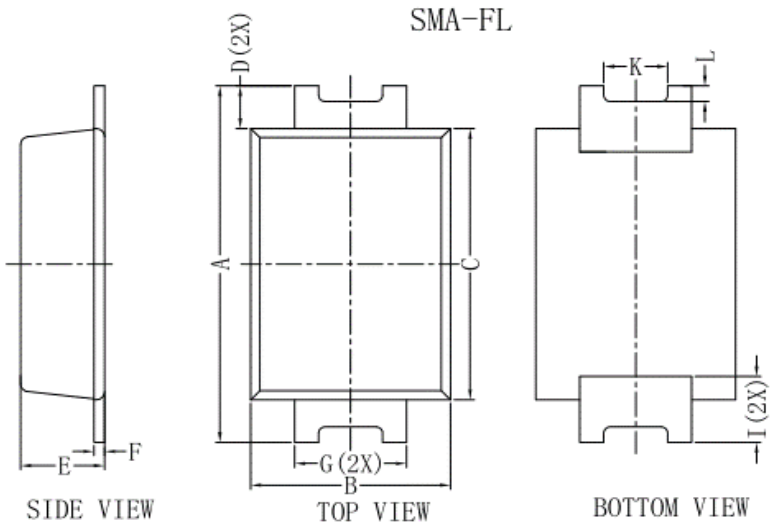


Fig. 6-Maximum Non-Repetitive Peak
Forward Surge Current Uniderictional



3.OUTLINE AND DIMENSIONS



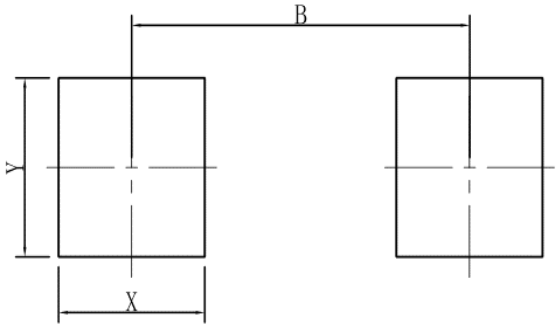
SMA-FL			
DIM	MIN	MAX	Typ.
A	4.40	4.80	4.60
B	2.30	2.70	2.60
C	3.30	3.70	3.50
D	-	-	0.55
E	0.90	1.20	1.05
F	0.11	0.21	0.17
G	1.30	1.50	1.40
I	-	-	0.90
K	-	-	0.80
L	-	-	0.20
All Dimensions in mm			

GENERAL NOTES

1.Top package surface finish Ra0.4±0.2um

2.Bottom package surface finish Ra0.7±0.2um

4.SOLDERING FOOTPRINT



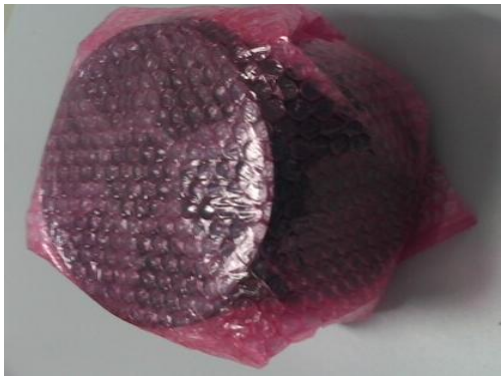
SMA-FL	
DIM	(mm)
X	1.60
Y	1.80
B	3.70

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

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。

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

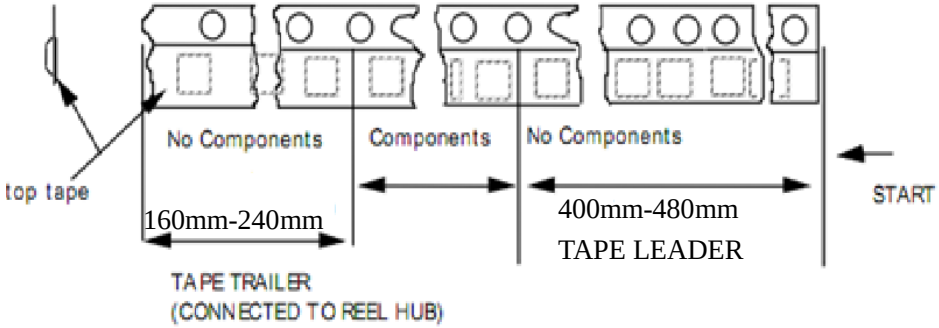
13 英寸卷盘产品装箱

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：440mm±40mm ， Tape trailer 尾部：200mm±40mmt

Figure 4

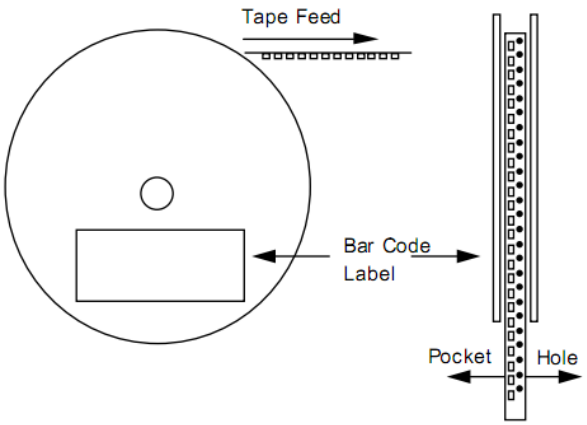
Tape Ends For Finished Goods Reel



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

8.2.3 Tape enwind orientation

编带缠绕方向要求



单击下面可查看定价，库存，交付和生命周期等信息

>>LRC(乐山无线电)