SMBFJ*** CASeries
S-SMBFJ*** CASeries

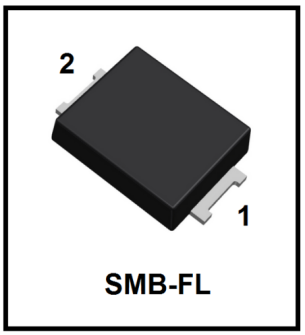
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 5.0 TO 250 Volts

600 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 SMB-FL molded plastic
Terminals: Plated leads, solderable per MIL-STD-202, Method 208
Polarity: Whithout Color band denoted cathode except Bipolar
Mounting Position: Any
Weight: 64mg

1.DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SMBFJ5.0CA thru types SMBFJ250CA

Electrical characteristics apply in both directions.marking code is all type.

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}	Minimum600	Watts
Steady State Power Dissipation at T_L=75°C(Note 2)	$P_{M(AV)}$	3.0	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 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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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)
S-SMBFJ5.0CA/SMBFJ5.0CA	SMBFJ5.0CA	5.00	6.40	7.00	10.00	9.20	65.30	800
S-SMBFJ6.0CA/SMBFJ6.0CA	SMBFJ6.0CA	6.00	6.67	7.37	10.00	10.30	58.30	800
S-SMBFJ6.5CASMBFJ6.5CA	SMBFJ6.5CA	6.50	7.22	7.98	10.00	11.20	53.60	500
S-SMBFJ7.0CA/SMBFJ7.0CA	SMBFJ7.0CA	7.00	7.78	8.60	10.00	12.00	50.00	200
S-SMBFJ7.5CA/SMBFJ7.5CA	SMBFJ7.5CA	7.50	8.33	9.21	1.00	12.90	46.60	100
S-SMBFJ8.0CA/SMBFJ8.0CA	SMBFJ8.0CA	8.00	8.89	9.83	1.00	13.60	44.20	50
S-SMBFJ8.5CA/SMBFJ8.5CA	SMBFJ8.5CA	8.50	9.44	10.40	1.00	14.40	41.70	20
S-SMBFJ9.0CA/SMBFJ9.0CA	SMBFJ9.0CA	9.00	10.00	11.10	1.00	15.40	39.00	10
S-SMBFJ10CA/SMBFJ10CA	SMBFJ10CA	10.00	11.10	12.30	1.00	17.00	35.30	1
S-SMBFJ11CA/SMBFJ11CA	SMBFJ11CA	11.00	12.20	13.50	1.00	18.20	33.00	1
S-SMBFJ12CA/SMBFJ12CA	SMBFJ12CA	12.00	13.30	14.70	1.00	19.90	30.20	1
S-SMBFJ13CA/SMBFJ13CA	SMBFJ13CA	13.00	14.40	15.90	1.00	21.50	28.00	1
S-SMBFJ14CA/SMBFJ14CA	SMBFJ14CA	14.00	15.60	17.20	1.00	23.20	25.90	1
S-SMBFJ15CA/SMBFJ15CA	SMBFJ15CA	15.00	16.70	18.50	1.00	24.40	24.60	1
S-SMBFJ16CA/SMBFJ16CA	SMBFJ16CA	16.00	17.80	19.70	1.00	26.00	23.10	1
S-SMBFJ17CA/SMBFJ17CA	SMBFJ17CA	17.00	18.90	20.90	1.00	27.60	21.80	1
S-SMBFJ18CA/SMBFJ18CA	SMBFJ18CA	18.00	20.00	22.10	1.00	29.20	20.60	1
S-SMBFJ20CA/SMBFJ20CA	SMBFJ20CA	20.00	22.20	24.50	1.00	32.40	18.60	1
S-SMBFJ22CA/SMBFJ22CA	SMBFJ22CA	22.00	24.40	26.90	1.00	35.50	16.90	1
S-SMBFJ24CA/SMBFJ24CA	SMBFJ24CA	24.00	26.70	29.50	1.00	38.90	15.50	1
S-SMBFJ26CA/SMBFJ26CA	SMBFJ26CA	26.00	28.90	31.90	1.00	42.10	14.30	1
S-SMBFJ28CA/SMBFJ28CA	SMBFJ28CA	28.00	31.10	34.40	1.00	45.40	13.30	1
S-SMBFJ30CA/SMBFJ30CA	SMBFJ30CA	30.00	33.30	36.80	1.00	48.40	12.40	1
S-SMBFJ33CA/SMBFJ33CA	SMBFJ33CA	33.00	36.70	40.60	1.00	53.30	11.30	1
S-SMBFJ36CA/SMBFJ36CA	SMBFJ36CA	36.00	40.00	44.20	1.00	58.10	10.40	1
S-SMBFJ40CA/SMBFJ40CA	SMBFJ40CA	40.00	44.40	49.10	1.00	64.50	9.30	1
S-SMBFJ43CA/SMBFJ43CA	SMBFJ43CA	43.00	47.80	52.80	1.00	69.40	8.70	1
S-SMBFJ45CA/SMBFJ45CA	SMBFJ45CA	45.00	50.00	55.30	1.00	72.70	8.30	1
S-SMBFJ48CA/SMBFJ48CA	SMBFJ48CA	48.00	53.30	58.90	1.00	77.40	7.80	1
S-SMBFJ51CA/SMBFJ51CA	SMBFJ51CA	51.00	56.70	62.70	1.00	82.40	7.30	1
S-SMBFJ54CA/SMBFJ54CA	SMBFJ54CA	54.00	60.00	66.30	1.00	87.10	6.90	1
S-SMBFJ58CA/SMBFJ58CA	SMBFJ58CA	58.00	64.40	71.20	1.00	93.60	6.50	1
S-SMBFJ60CA/SMBFJ60CA	SMBFJ60CA	60.00	66.70	73.70	1.00	96.80	6.20	1
S-SMBFJ64CA/SMBFJ64CA	SMBFJ64CA	64.00	71.10	78.60	1.00	103.00	5.90	1
S-SMBFJ70CA/SMBFJ70CA	SMBFJ70CA	70.00	77.80	86.00	1.00	113.00	5.30	1
S-SMBFJ75CA/SMBFJ75CA	SMBFJ75CA	75.00	83.30	92.10	1.00	121.00	5.00	1
S-SMBFJ78CA/SMBFJ78CA	SMBFJ78CA	78.00	86.70	95.80	1.00	126.00	4.80	1
S-SMBFJ85CA/SMBFJ85CA	SMBFJ85CA	85.00	94.40	104.00	1.00	137.00	4.40	1
S-SMBFJ90CA/SMBFJ90CA	SMBFJ90CA	90.00	100.00	111.00	1.00	146.00	4.10	1
S-SMBFJ100CA/SMBFJ100CA	SMBFJ100CA	100.00	111.00	123.00	1.00	162.00	3.70	1
S-SMBFJ110CA/SMBFJ110CA	SMBFJ110CA	110.00	122.00	135.00	1.00	177.00	3.40	1
S-SMBFJ120CA/SMBFJ120CA	SMBFJ120CA	120.00	133.00	147.00	1.00	193.00	3.10	1
S-SMBFJ130CA/SMBFJ130CA	SMBFJ130CA	130.00	144.00	159.00	1.00	209.00	2.90	1
S-SMBFJ150CA/SMBFJ150CA	SMBFJ150CA	150.00	167.00	185.00	1.00	243.00	2.50	1
S-SMBFJ160CA/SMBFJ160CA	SMBFJ160CA	160.00	178.00	197.00	1.00	259.00	2.30	1
S-SMBFJ170CA/SMBFJ170CA	SMBFJ170CA	170.00	189.00	209.00	1.00	275.00	2.20	1
S-SMBFJ180CA/SMBFJ180CA	SMBFJ180CA	180.00	198.00	221.00	1.00	291.00	2.10	1
S-SMBFJ190CA/SMBFJ190CA	SMBFJ190CA	190.00	209.00	233.00	1.00	307.00	2.00	1
S-SMBFJ200CA/SMBFJ200CA	SMBFJ200CA	200.00	220.00	246.00	1.00	324.00	1.90	1
S-SMBFJ220CA/SMBFJ220CA	SMBFJ220CA	220.00	246.00	272.00	1.00	356.00	1.70	1
S-SMBFJ250CA/SMBFJ250CA	SMBFJ250CA	250.00	279.00	309.00	1.00	405.00	1.50	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

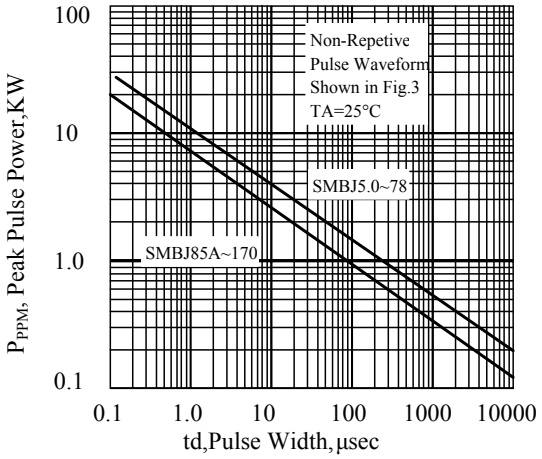


Fig. 2-Pulse Derating Curve

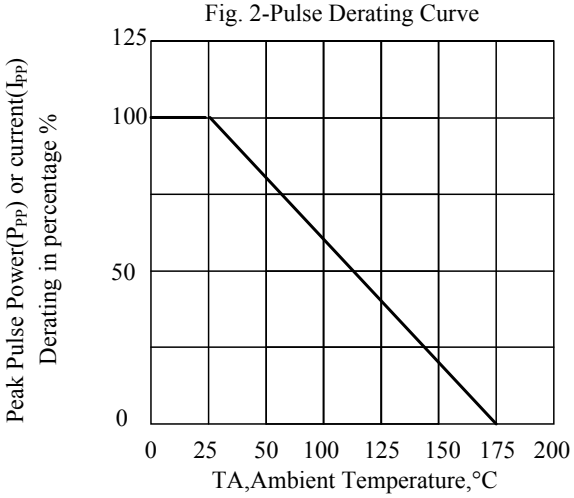


Fig. 3-Pulse Waveform

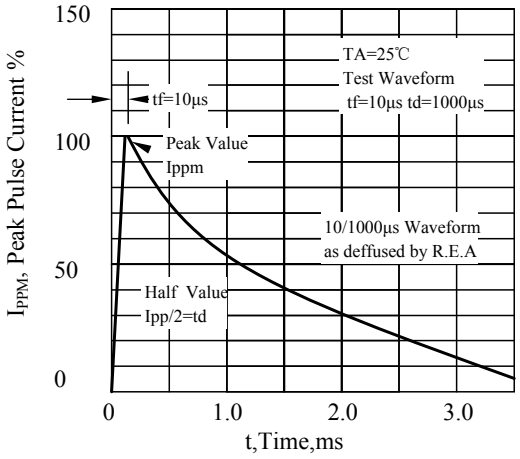


Fig. 4-Typical Junction Capacitance
Unidirectional

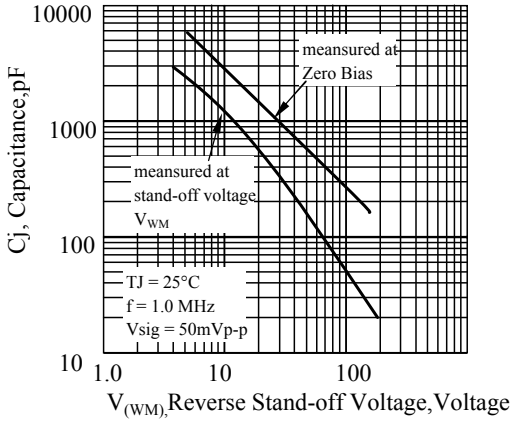
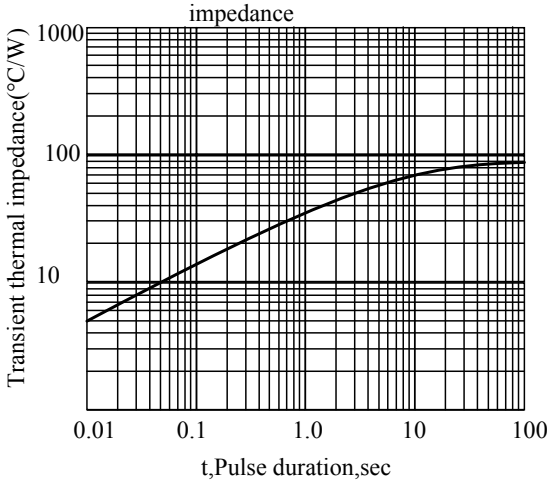


Fig 5. – typical transient thermal impedance



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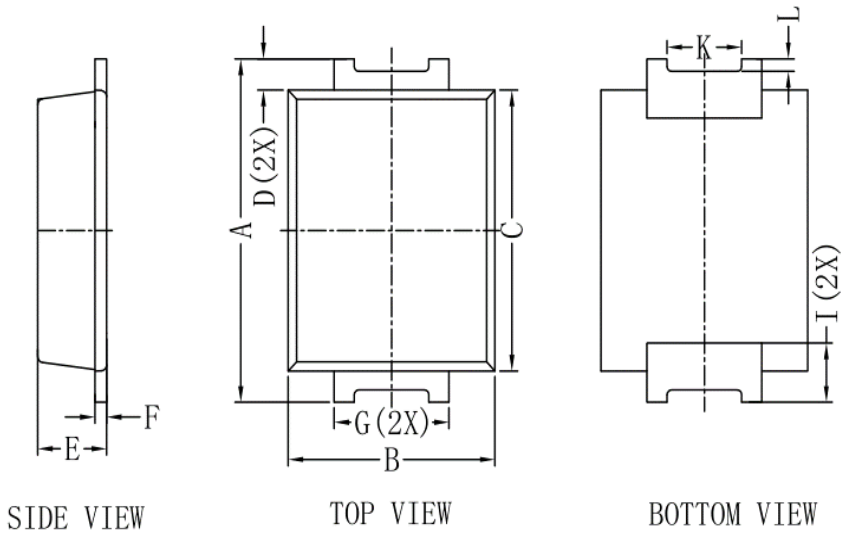
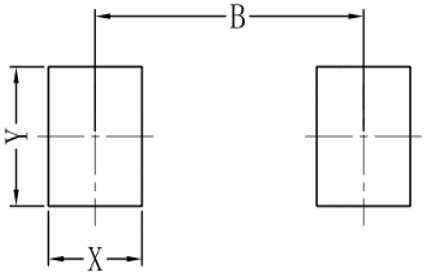
3.OUTLINE AND DIMENSIONS



SIDE VIEW TOP VIEW BOTTOM VIEW

SMB-FL			
DIM	Min	Max	Typ.
A	5.30	5.70	5.50
B	3.40	3.80	3.60
C	4.30	4.70	4.50
D	-	-	0.45
E	1.05	1.40	1.20
F	0.18	0.30	0.22
G	1.90	2.10	2.00
I	-	-	0.95
K	-	-	1.30
L	-	-	0.20
All Dimensions in mm			

4.SOLDERING FOOTPRINT



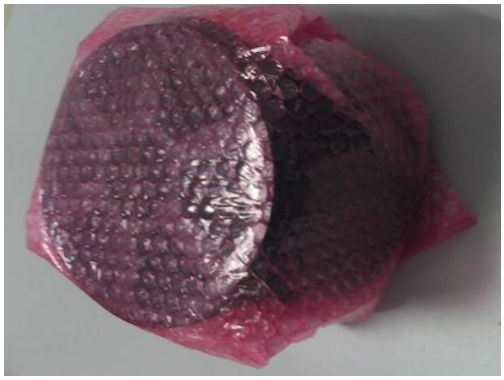
SMB-FL	
DIM	(mm)
X	1.60
Y	2.20
B	4.60

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

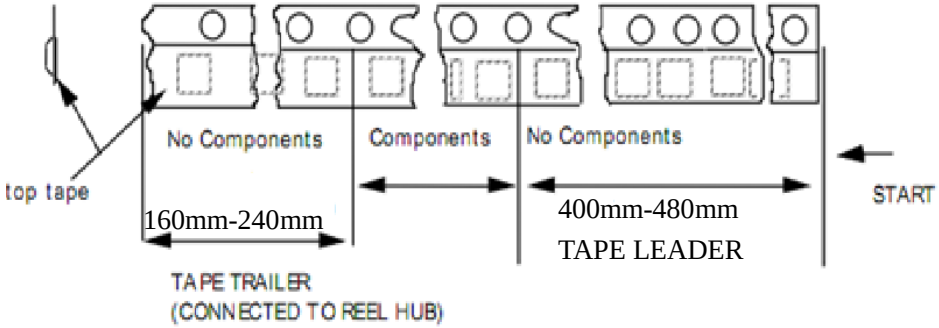
13 英寸卷盘产品装箱

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