

# SM320AF thru SM3100AF

Schottky Barrier Rectifiers  
Reverse Voltage 20 to 100V Forward Current 3.0A

## FEATURES

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* Low power loss, high efficiency
- \* For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- \* Guardring for over voltage protection
- \* High temperature soldering guaranteed: 260°C/10 seconds at terminals

## Mechanical Data

**Case:** JEDEC SMA-FL

molded plastic over glass die

**Terminals:** Plated leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 28mg

**Handling precaution:** None

## 1. Electrical Characteristic

**Maximum & Thermal Characteristics Ratings** at 25°C ambient temperature unless otherwise specified.

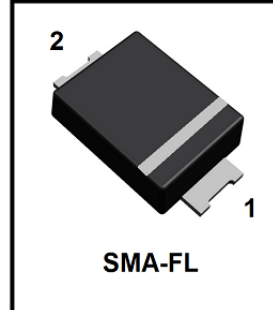
Parameter Symbol	symbol	SM320 AF	SM330 AF	SM340 AF	SM345 AF	SM350 AF	SM360 AF	SM380 AF	SM3100 AF	Unit
device marking code		S32	S33	S34	S345	S35	S36	S38	S310	
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	45	50	60	80	100	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	31.5	35	42	56	70	V
Maximum DC blocking voltage	$V_{DC}$	20	30	40	45	50	60	80	100	V
Maximum average forward rectified current lead length (See fig. 1) at $T_C = 75^\circ C$	$I_{F(AV)}$	3.0								A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	100								A
Typical thermal resistance (Note 1)	$R_{\theta JA}$ $R_{\theta JL}$	150 35								$^\circ C/W$
Operating junction and storage temperature range	$T_J$ , $T_{STG}$	-40 to +150								$^\circ C$

**Electrical Characteristics Ratings** at 25°C ambient temperature unless otherwise specified.

Parameter Symbol	symbol	SM320 AF	SM330 AF	SM340 AF	SM345 AF	SM350 AF	SM360 AF	SM380 AF	SM3100 AF	Unit	
Maximum instantaneous forward voltage at 3.0A	$V_F$	0.50			0.70		0.85			V	
Maximum DC reverse current $T_A = 25^\circ C$ at rated DC blocking voltage $T_J = 100^\circ C$	$I_R$	0.5					30.0				mA
Typical junction capacitance at 4.0V, 1MHz	$C_J$	110								PF	

NOTES:

1. 8.0mm<sup>2</sup> (.013mm thick) land areas



We declare that the material of product is Halogen free (green epoxy compound)

# SM320AF thru SM3100AF

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

Fig. 1 - Forward Current Derating Curve

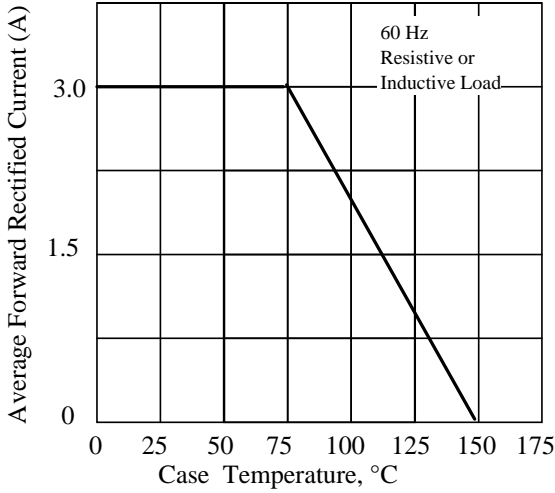


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

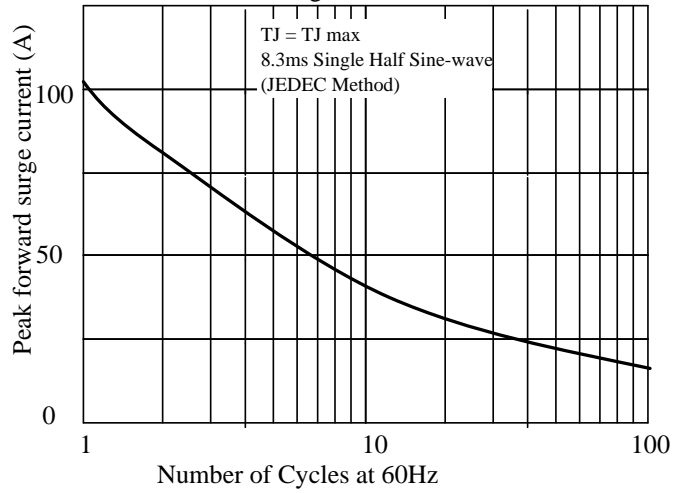


Fig 3. - Typical Instantaneous Forward Characteristics

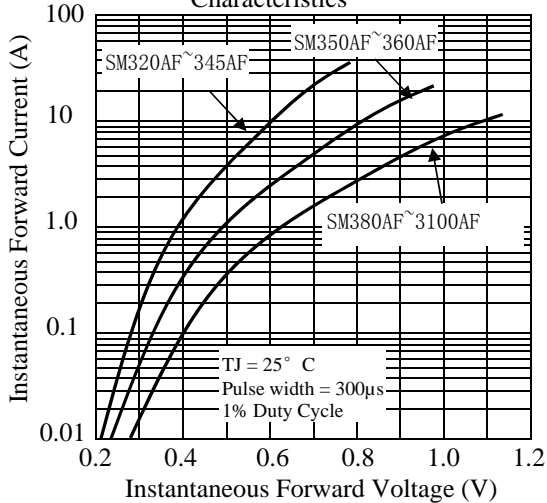


Fig 4. - Typical Reverse Characteristics

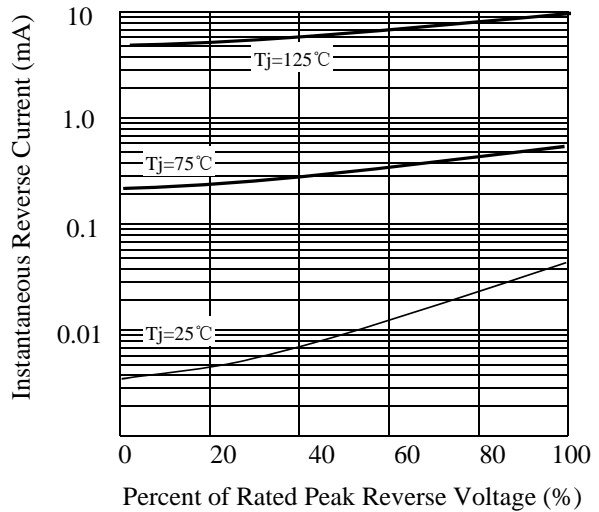


Fig 5. - typical transient thermal impedance

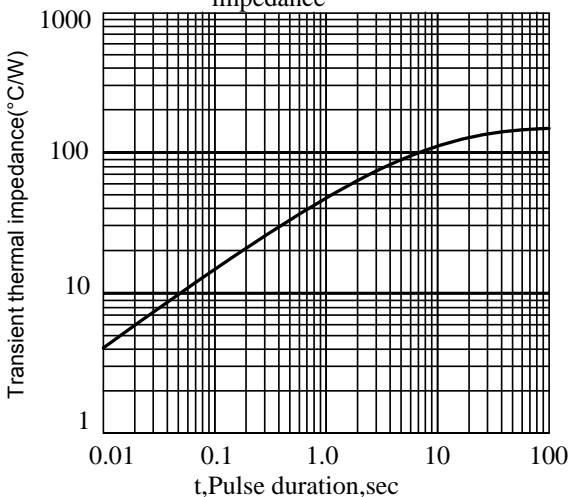
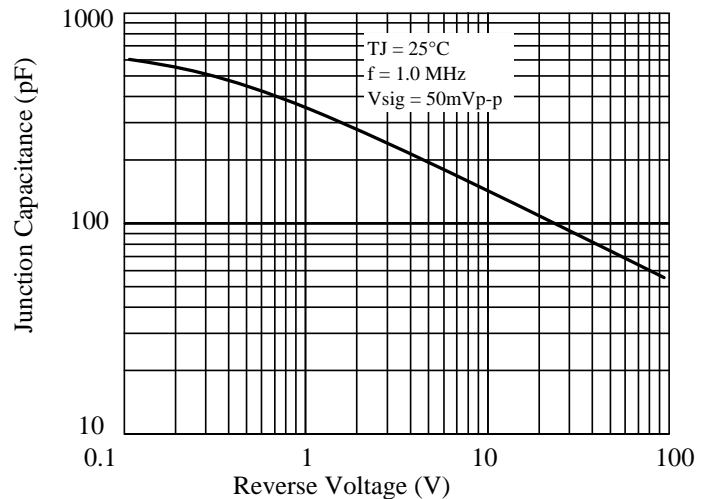
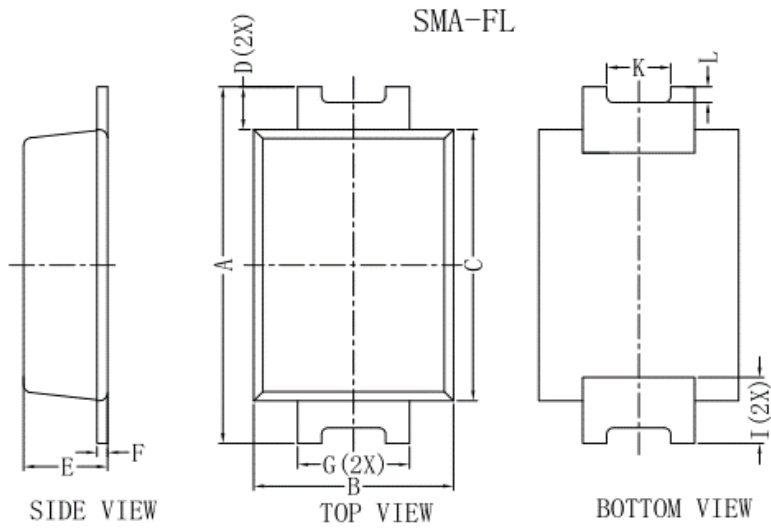


Fig 6. - Typical Junction Capacitance



### 3.OUTLINE AND DIMENSIONS



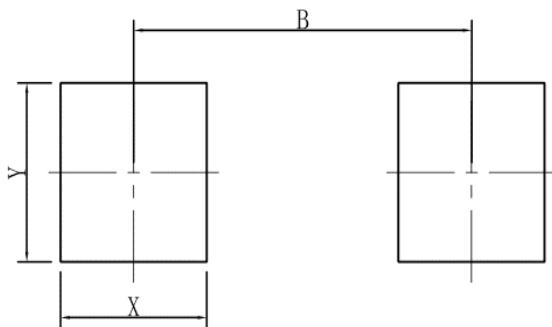
SMA-FL			
DIM	MIN	MAX	Typ.
A	4.40	4.80	4.60
B	2.30	2.70	2.60
C	3.30	3.70	3.50
D			0.55
E	0.90	1.20	1.05
F	0.11	0.21	0.17
G	1.30	1.50	1.40
I	-	-	0.90
K	-	-	0.80
L	-	-	0.20

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



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# Title: Power Packages Product Packing Specification

## 功率产品包装规范

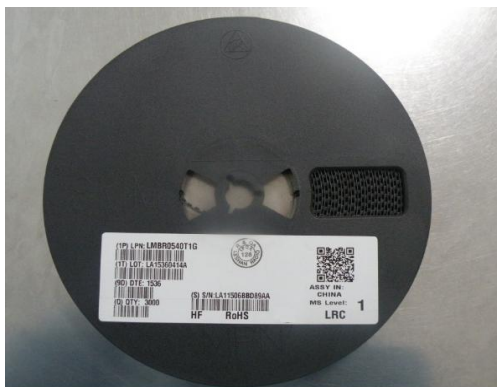
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8.1.2 Label position and QA stamp position.(Empty area) 标签张贴位置及QA印章位置。(印章盖在标签空白区)



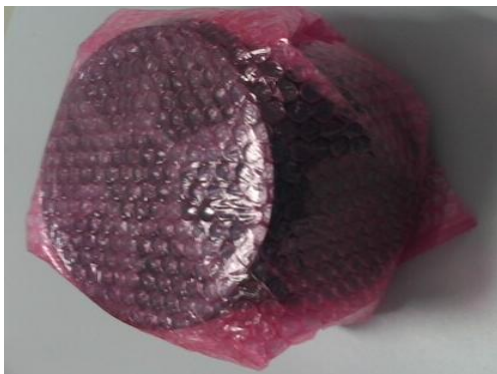
7英寸卷盘标签张贴及QA印章位置



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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# Title: Power Packages Product Packing Specification

## 功率产品包装规范

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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

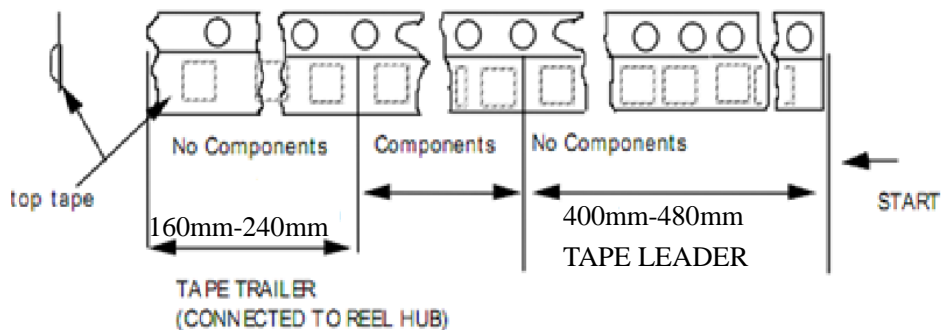
#### 8.2.1 Tape length of no component

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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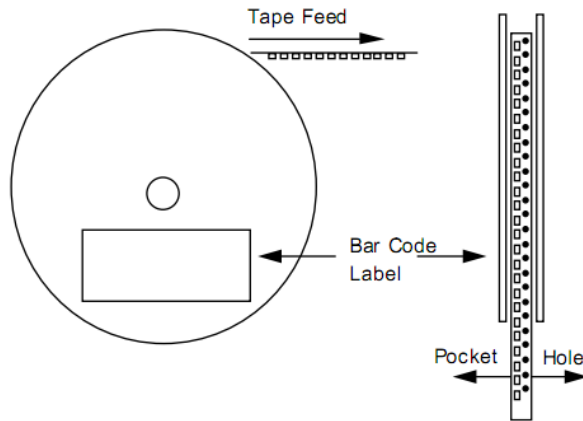
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## 8.2.3 Tape enwind orientation

编带缠绕方向要求



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