

## FEATURES

- | Low Power Loss High Efficiency
- | Ideal For Automated Placement
- | Guard Ring For Over-voltage Protection
- | High Surge Current Capability



SMAF



Schematic Symbol

## MECHANICAL DATA

- | Polarity: Color Band Denotes Cathode End
- | Mounting Position: Any

## APPROVALS

- |             |                                    |
|-------------|------------------------------------|
| <b>RoHS</b> | Compliance with 2011/65/EU         |
| <b>HF</b>   | Compliance with IEC61249-2-21:2003 |

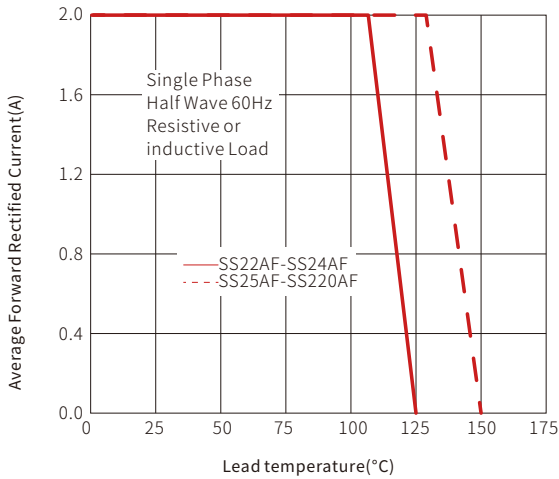
## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	SS 22AF	SS 23AF	SS 24AF	SS 25AF	SS 26AF	SS 28AF	SS 210AF	SS 215AF	SS 220AF	Unit	
Marking		SS22	SS23	SS24	SS25	SS26	SS28	SS210	SS215	SS220		
Repetitive Peak Reverse Voltage	$V_{RRM}$	20	30	40	50	60	80	100	150	200	V	
Reverse Voltage, total RMS Value	$V_{RMS}$	14	21	28	35	42	56	70	105	140	V	
Maximum DC Blocking Voltage	$V_{DC}$	20	30	40	50	60	80	100	150	200	V	
Maximum Average Forward Rectified Current	$I_{F(AV)}^{(1)}$	2.0									A	
Surge Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed On Rated Load Per Diode	$I_{FSM}$	50									A	
Maximum Instantaneous Forward Voltage $I_F=2A, T_A=25^{\circ}\text{C}$	$V_F$	0.55			0.70		0.85		0.95		V	
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A=25^{\circ}\text{C}$	0.5					0.1					mA
	$T_A=100^{\circ}\text{C}$	10					5					mA
Typical Thermal Resistance Note 1	$R_{\theta JA}$	80									$^{\circ}\text{C}/\text{W}$	
Operating Junction Temperature Range	$T_J$	-55 to +125						-55 to +150				$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150									$^{\circ}\text{C}$	

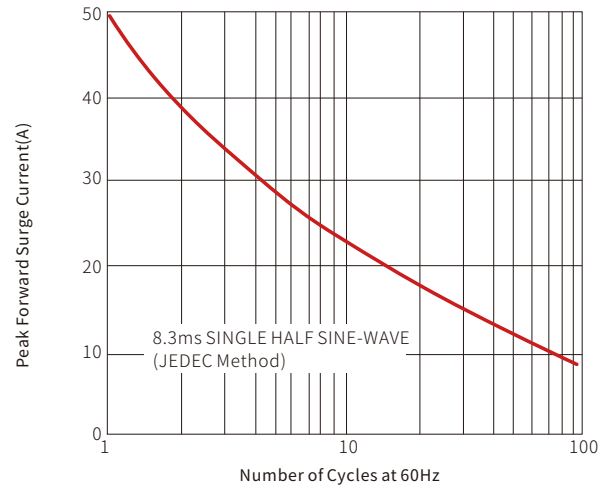
Note1): Mounted on PCB with 5.0x5.0mm copper pads.

# CHARACTERISTIC CURVES

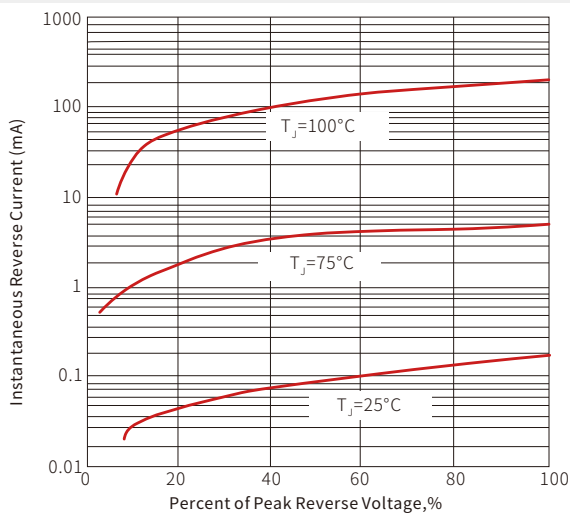
**Fig. 1- Forward Current Derating Curve**



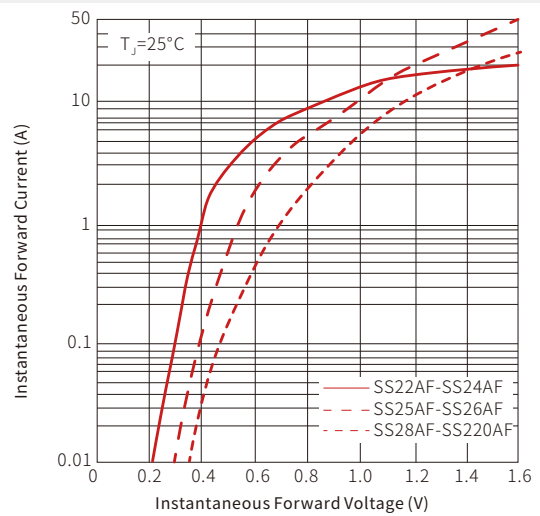
**Fig. 2- Maximum Non-Repetitive Peak Forward Surge Current**

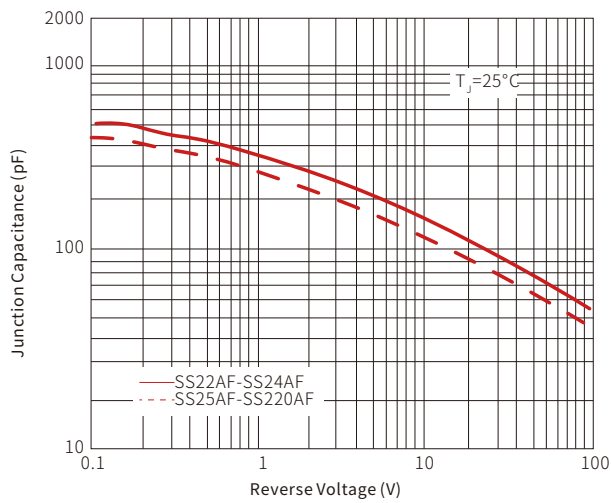
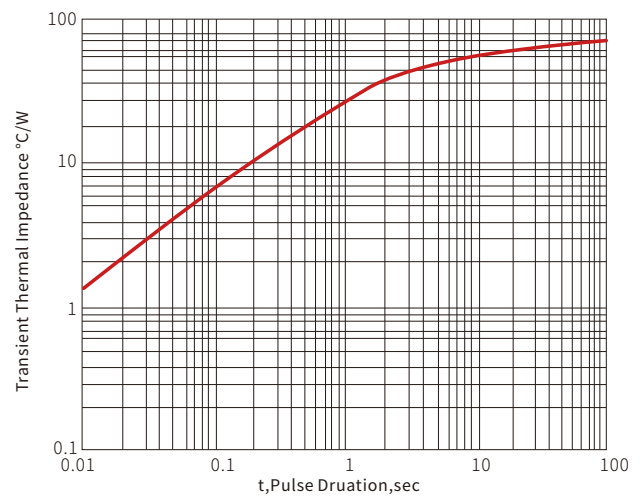


**Fig. 3- Typical Reverse Characteristics**



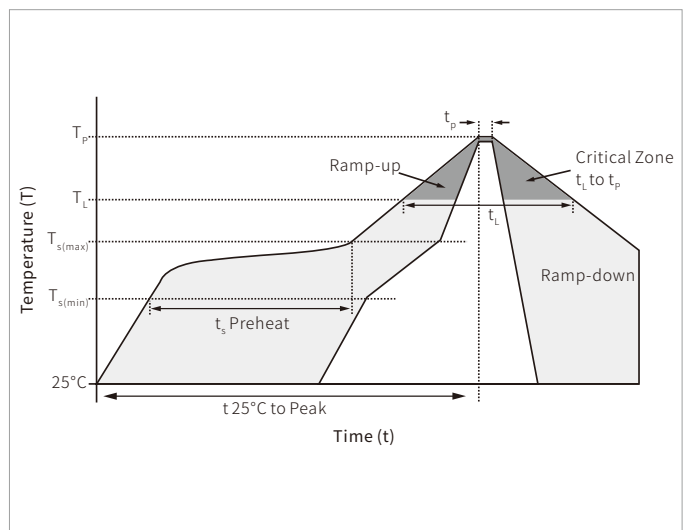
**Fig. 4- Typical Instantaneous Forward Characteristics**



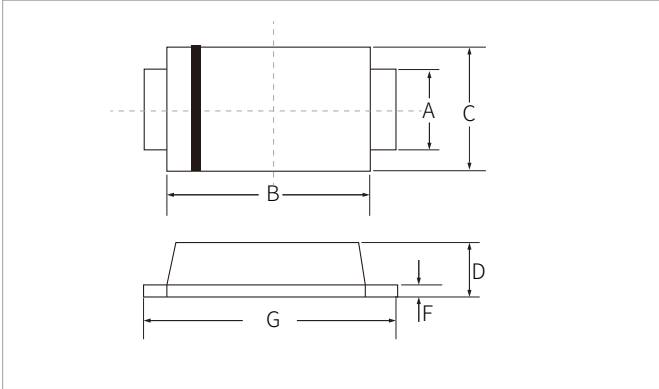
**Fig. 5-Typical Junction Capacitance**

**Fig. 6-Typical Transient Thermal Impedance**


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_i$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260°C

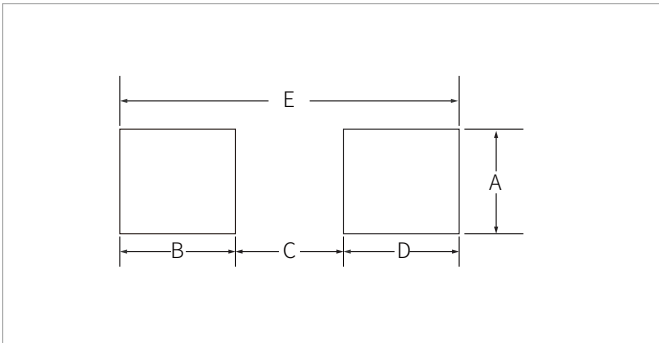


## SMAF PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.35	1.45	0.053	0.057
B	3.40	3.80	0.134	0.145
C	2.40	2.80	0.094	0.110
D	0.95	1.45	0.037	0.057
F	0.15	0.22	0.006	0.009
G	4.40	4.80	0.173	0.189

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.70	-	0.067	-
B	2.50	-	0.098	-
C	-	1.5	-	0.059
D	2.50	-	0.098	-
E	6.50REF		0.256REF	

## ORDERING INFORMATION

Part Number	Package	QTY/Reel	Reel Size
SS22AF-220AF	SMAF	5000PCS	13"

**Headquarters**

No.3387 Shendu Road  
Pujiang I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

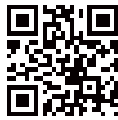
Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

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