

## SS22F THRU SS220F

VOLTAGE RANGE    20 to 200 Volts  
CURRENT                2.0 Ampere

### Features

SMAFL



- Low profile surface mount package
- Built in strain relief
- High switching speed
- Low voltage drop, high efficiency
- For use in low voltage high frequency inverters, Free willing ,and polarity protection applications
- Guardring for over voltage protection



### Mechanical Data

- Case: Transfer molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead :Solder plated, solderable per MIL-STD-750 method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.00095ounce, 0.028grams

### Maximum Ratings and Electrical Characteristics

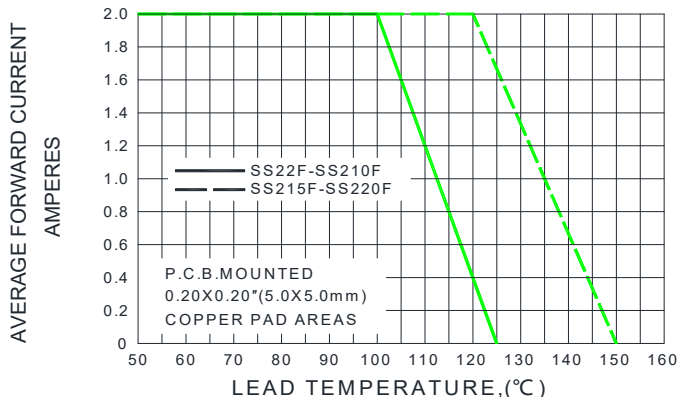
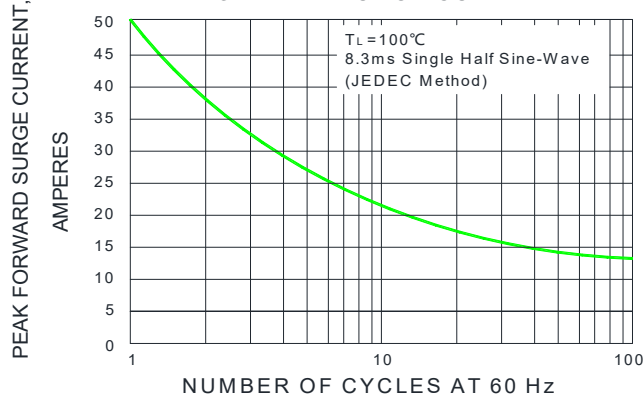
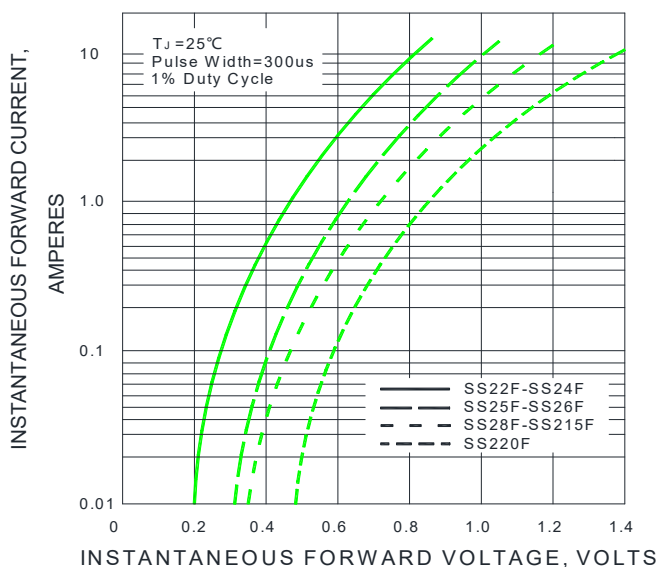
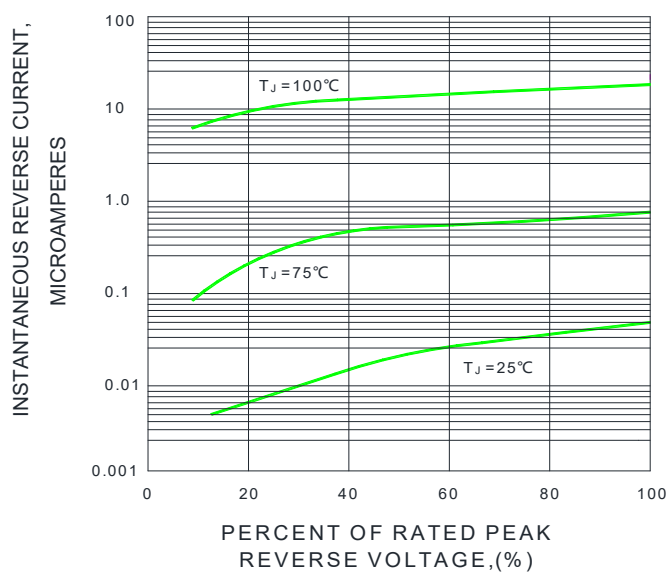
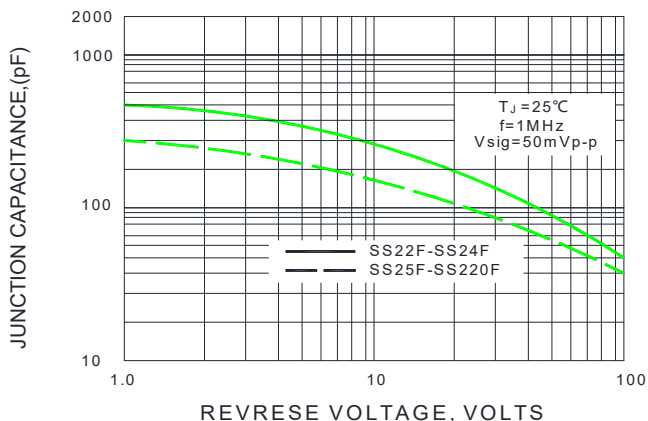
- Ratings at 25°C ambient temperature unless otherwise specified.
- Single phase, half wave, 60Hz, resistive or inductive load.
- For capacitive load derate current by 20%.

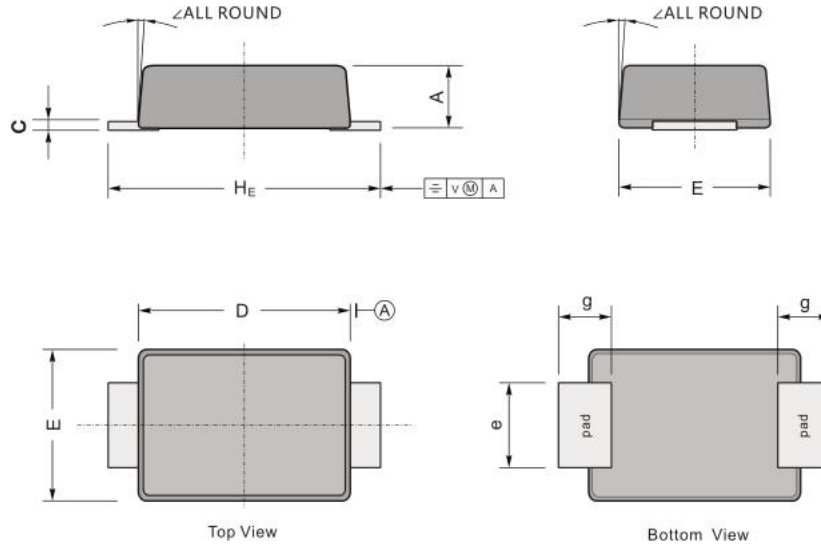
TYPE NUMBER	SYMBOL	SS 22F	SS 24F	SS 25F	SS 26F	SS 28F	SS 210F	SS 215F	SS 220F	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	20	40	50	60	80	100	150	200	Volts
Maximum RMS Voltage	$V_{RMS}$	14	28	35	42	56	70	105	140	Volts
Maximum DC Blocking Voltage	$V_{DC}$	20	40	50	60	80	100	150	200	Volts
Maximum Average Forward Rectified Current at $T_L$ see figure 1 $T_L = 100^\circ C$	$I_{(AV)}$	2.0								Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	50								Amps
Maximum Instantaneous Forward Voltage @ 2.0A(Note1)	$V_F$	0.55	0.70		0.85		0.95		Volts	
Maximum DC Reverse Current at rated DC Blocking Voltage per element	$T_A = 25^\circ C$	0.1							0.01	mA
	$T_A = 100^\circ C$	20.0				10.0		2.0		
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	55								$^\circ C/W$
	$R_{\theta JL}$	25								
Diode junction capacitance (Note 3)	$C_J$	30								pF
Operating Junction Temperature	$T_J$	(-55 to +150)				(-65 to +150)				$^\circ C$
Storage Temperature Range	$T_{STG}$	(-55 to +150)								$^\circ C$

Notes:

1. Pulse test:300μs pulse width,1% duty cycle.
2. Unit mounted on P.C.B. with 0.20"×0.20"(5.00mm×5.00mm) copper pads.
3. f=1MHz and applied 4V DC reverse voltage.

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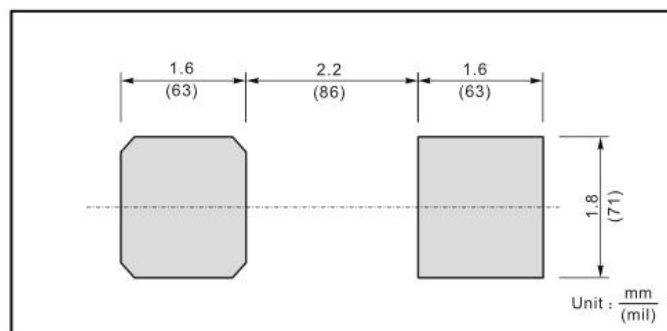
**Ratings and Characteristic Curves (TA=25°C unless otherwise noted)**
**FIG.1-FORWARD CURRENT DERATING CURVE**

**FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

**FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

**FIG.4-TYPICAL REVERSE CHARACTERISTICS**

**FIG.5-TYPICAL JUNCTION CAPACITANCE**


**Package Outline Dimensions in inches (millimeters)**


UNIT		A	C	D	E	e	g	$H_E$	$\angle$
mm	max	1.10	0.20	3.70	2.70	1.60	1.20	4.90	5-7°
	min	0.90	0.12	3.30	2.40	1.30	0.80	4.40	
mil	max	43	7.90	146	106	63	47	193	
	min	35	4.70	130	94	51	31	173	

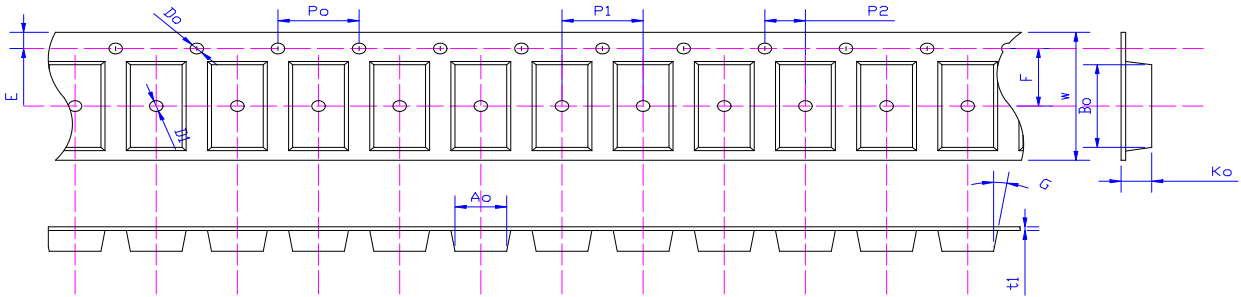
**The Recommended Mounting Pad Size**
**Marking**

Type number	Marking code
SS22F	SS22F
SS24F	SS24F
SS25F	SS25F
SS26F	SS26F
SS28F	SS28F
SS210F	SS210F
SS215F	SS215F
SS220F	SS220F

**The recommended mounting pad size**


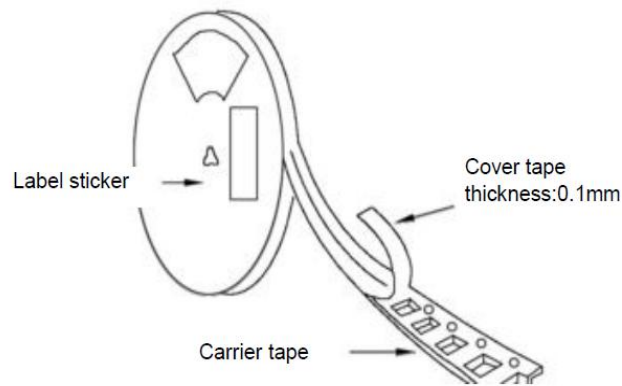
## Packing Requirments

- PS black anti-static carrier tape packing

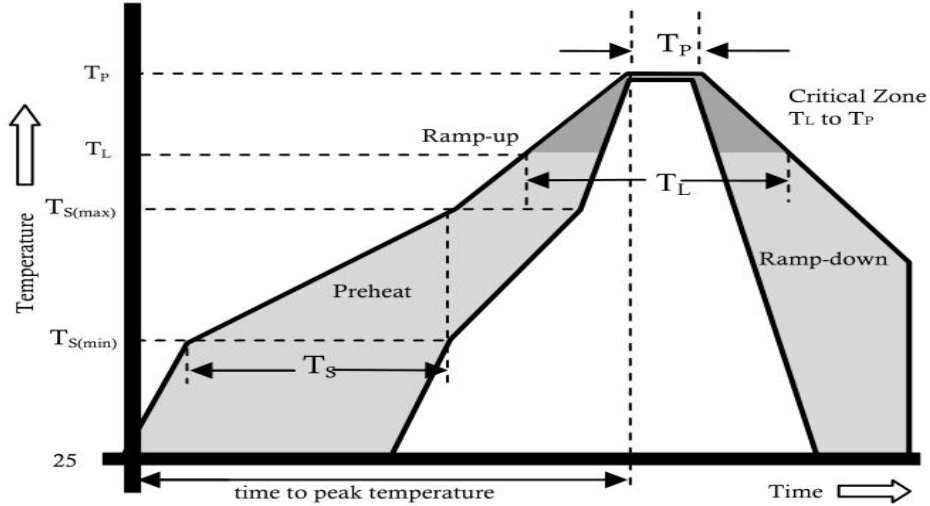


Specifications	$A_o$	$B_o$	$K_o$	$P_o$	$W$	$t_1$
SMAFL	$2.83 \pm 0.10$	$4.90 \pm 0.10$	$1.45 \pm 0.10$	$4.00 \pm 0.1$	$12.0 \pm 0.05$	$0.23 \pm 0.02$

- 13" antistatic plastic reel



DEVICE TYPE	13" Reel			
	Q'TY/REEL(pcs)	REEL/BOX	BOX/CARTOON	Q'TY/CARTON(pcs)
SMAFL	10000	2	8	160000

**Reflow Profile**


Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp( $T_L$ ) to peak)		3°C/sec. Max.
$T_{S(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature ( $T_L$ )(Liquidus)	+217°C
	Temperature ( $T_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+(260+0/-5) °C
Time within 5°C of actual Peak Temp ( $T_P$ )		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C

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