



SS32F THRU SS320F

VOLTAGE RANGE 20 to 200 Volts

CURRENT 3.0 Ampere

Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed: 260 C/10 seconds at terminals

SMAFL



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 32F | SS 34F | SS 35F | SS 36F | SS 38F | SS 310F | SS 315F | SS 320F | 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 $T_L = 100^\circ\text{C}$ | $I_{(AV)}$ | 3.0 | | | | | | | | Amps |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | I_{FSM} | 80 | | | | | | | | Amps |
| Maximum Instantaneous Forward Voltage @ 3.0A(Note1) | V_F | 0.55 | 0.70 | | 0.85 | | 0.90 | | Volts | |
| Maximum DC Reverse Current at rated DC Blocking Voltage per element | $T_A = 25^\circ\text{C}$ | 0.1 | | | | | | | 0.01 | mA |
| | $T_A = 100^\circ\text{C}$ | 20.0 | | | | 10.0 | | 2.0 | | |
| Typical Thermal Resistance (Note 2) | $R_{\theta JA}$ | 55 | | | | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 25 | | | | | | | | |
| Diode junction capacitance (Note 3) | C_J | 300 | | | 200 | | | | | pF |
| Operating Junction Temperature | T_J | (-55 to +150) | | | | | | (-65 to +175) | | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | (-55 to +150) | | | | | | | | $^\circ\text{C}$ |

Notes:

1. Pulse test: 300 μs 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

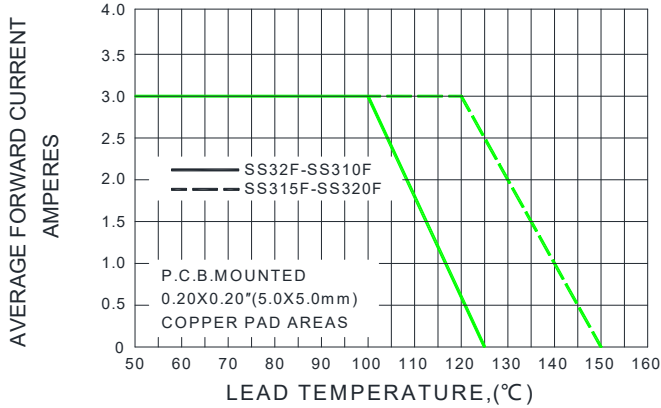


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

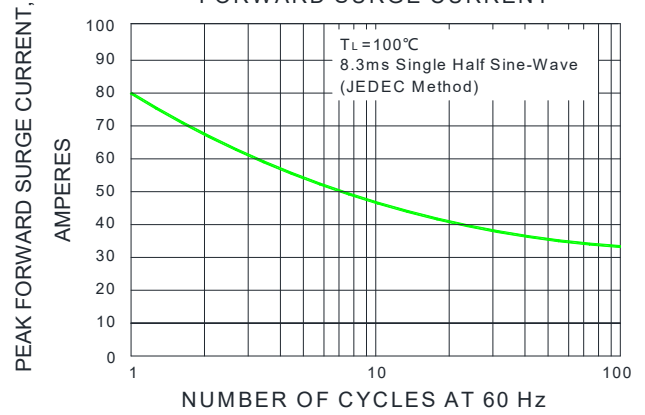


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

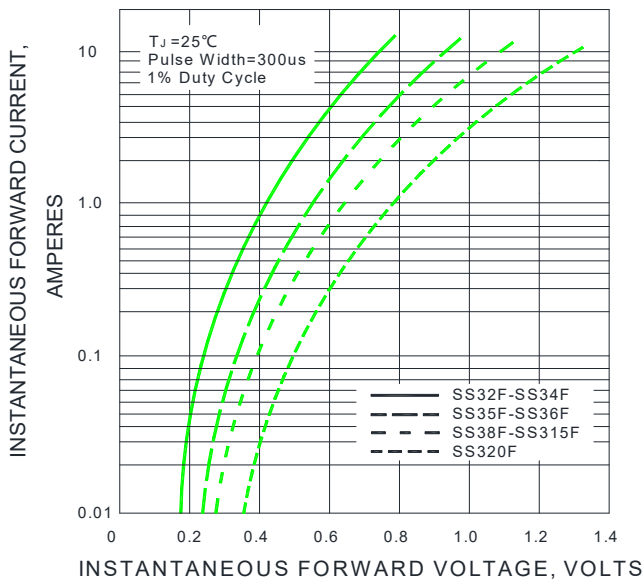


FIG.4-TYPICAL REVERSE CHARACTERISTICS

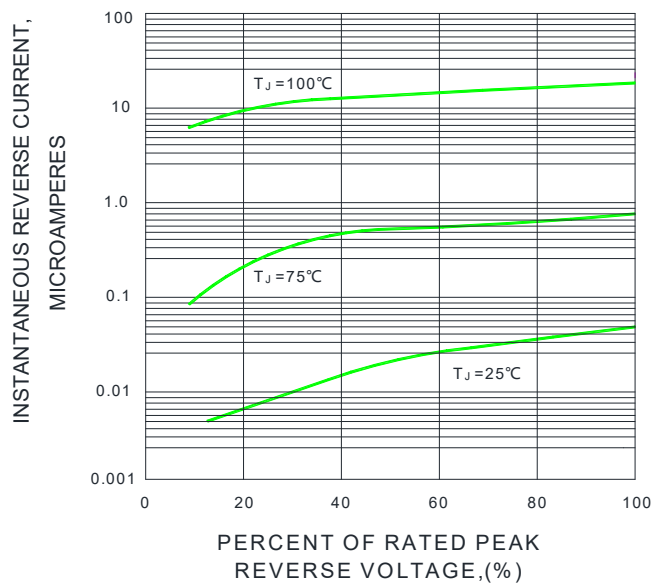
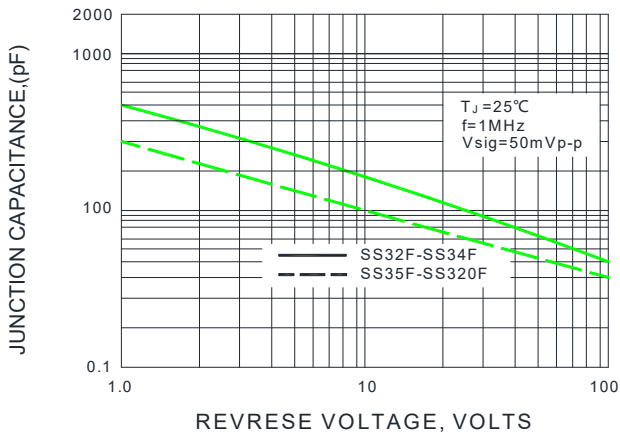


FIG.5-TYPICAL JUNCTION CAPACITANCE

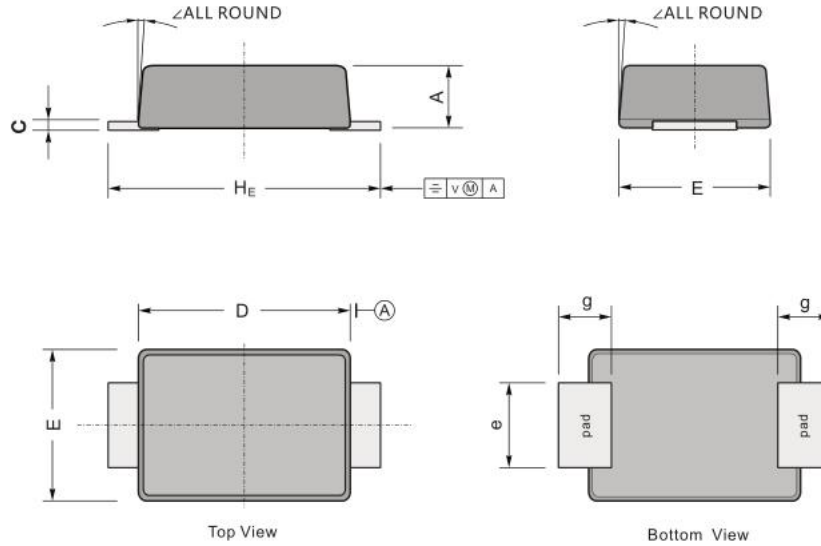




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Package Outline Dimensions in inches (millimeters)



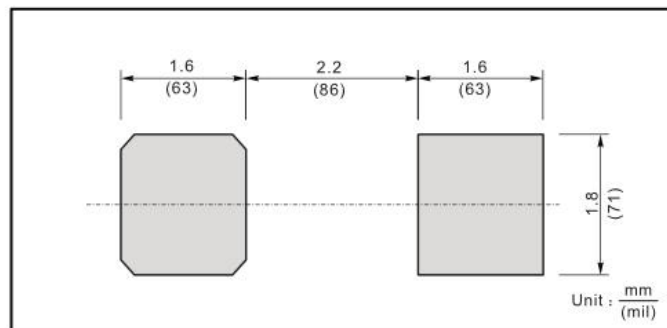
| UNIT | | A | C | D | E | e | g | H _E | ∠ |
|------|-----|------|------|------|------|------|------|----------------|------|
| mm | max | 1.10 | 0.20 | 3.70 | 2.70 | 1.60 | 1.20 | 4.90 | 5-7° |
| | min | 0.90 | 0.12 | 3.30 | 2.40 | 1.30 | 0.80 | 4.40 | |
| mil | max | 43 | 7.90 | 146 | 106 | 63 | 47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

The Recommended Mounting Pad Size

Marking

| Type number | Marking code |
|-------------|--------------|
| SS32F | SS32 |
| SS34F | SS34 |
| SS35F | SS35 |
| SS36F | SS36 |
| SS38F | SS38 |
| SS310F | SS310 |
| SS315F | SS315 |
| SS320F | SS320 |

The recommended mounting pad size



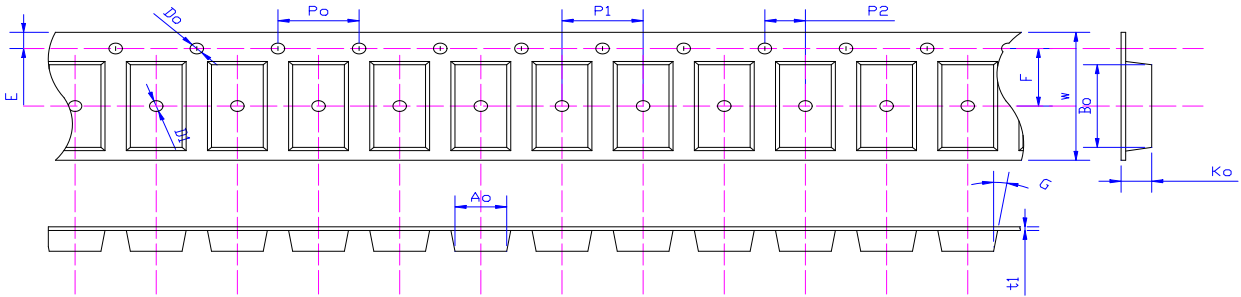


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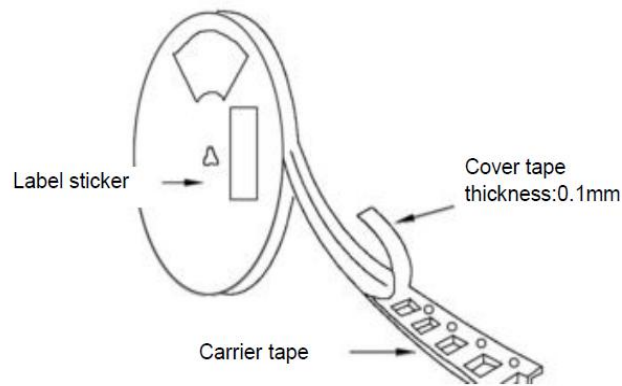
Packing Requirments

- PS black anti-static carrier tape packing



| Specifications | A_o | B_o | K_o | P_o | W | t_1 |
|----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|
| SMAFL | 2.83 ± 0.10 | 4.90 ± 0.10 | 1.45 ± 0.10 | 4.00 ± 0.1 | 12.0 ± 0.05 | 0.23 ± 0.02 |

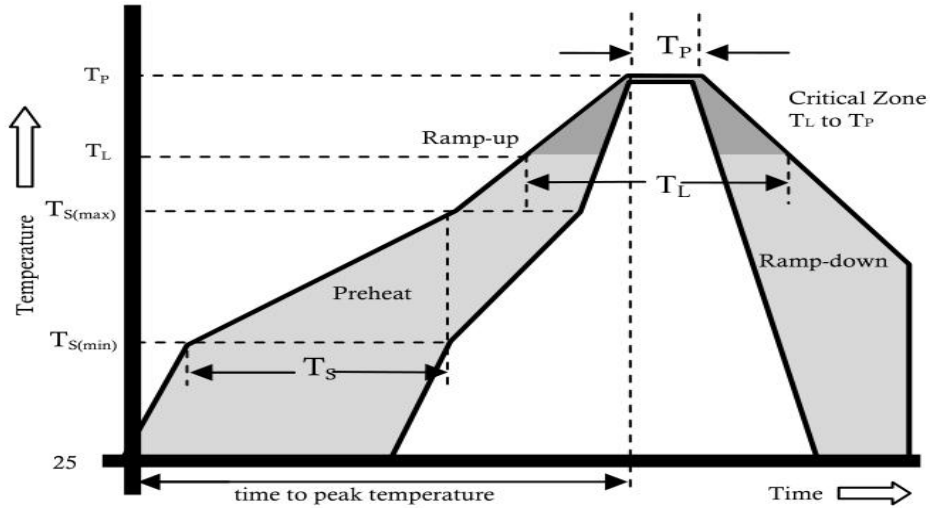
- 13 "antistatic plastic reel



| 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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