SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

# SS32F THRU SS320F

**VOLTAGE RANGE** 20 to 200 Volts
**CURRENT** 3.0 Ampere

## Features

SMAFL

RoHS COMPLIANT

- 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

## 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℃ ambient temperature unless otherwise specified
- Single phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

| TYPE NUMBER | | SYMBOLS | 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℃ | | $I_{(AV)}$ | 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℃ | $I_R$ | 0.1 | | | | | | 0.01 | | mA |
| | $T_A$ = 100℃ | | 20.0 | | | | 10.0 | | 2.0 | | |
| Typical Thermal Resistance (Note 2) | | $R_{\theta JA}$ | 55 | | | | | | | | ℃/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) | | ℃ |
| Storage Temperature Range | | $T_{STG}$ | (-55 to +150) | | | | | | | | ℃ |

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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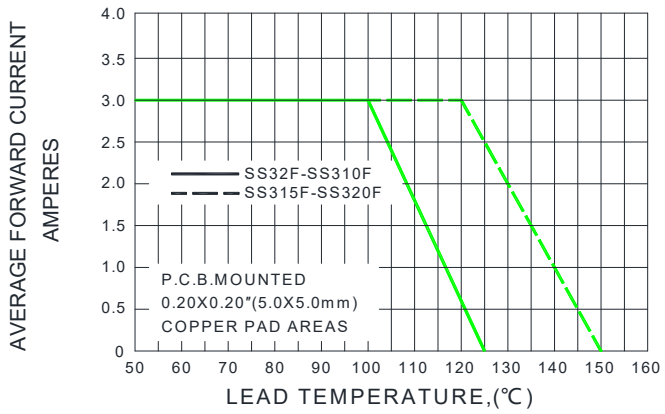
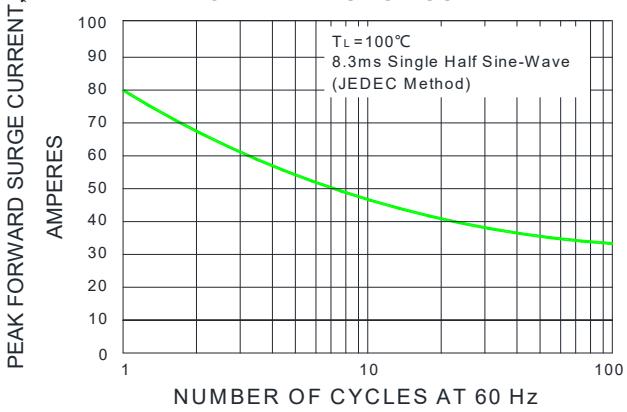
## Ratings and Characteristic Curves (TA=25℃ unless otherwise noted)

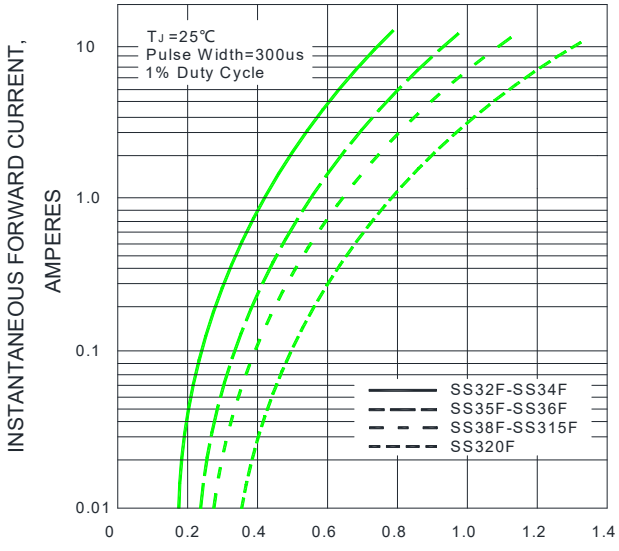
F1G.1-FORWARD CURRENT DERATING CURVE



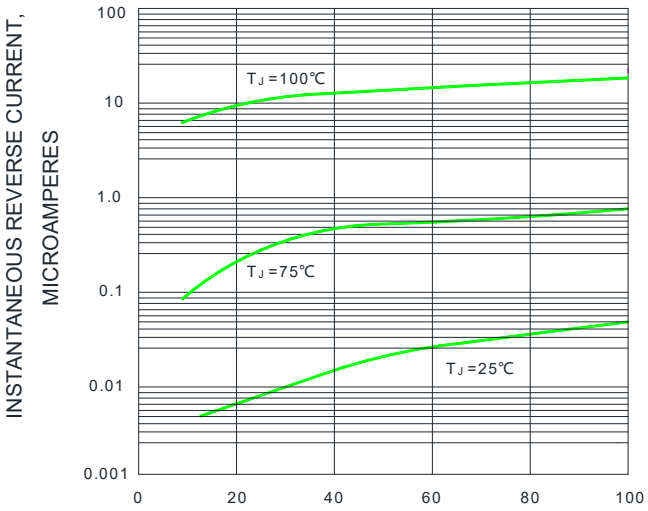

F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



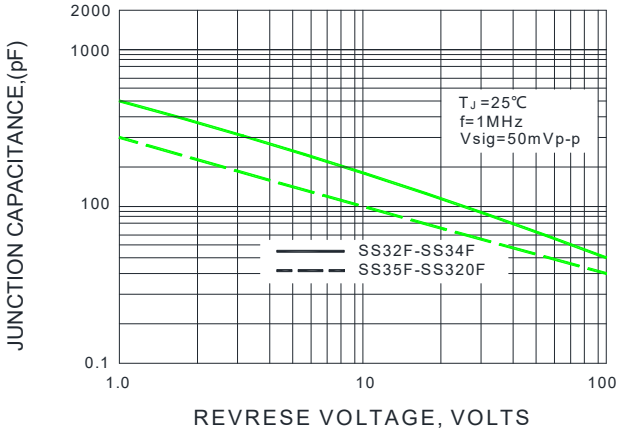

F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS




F1G.4-TYPICAL REVERSE CHARACTERISTICS




F1G.5-TYPICAL JUNCTION CAPACITANCE



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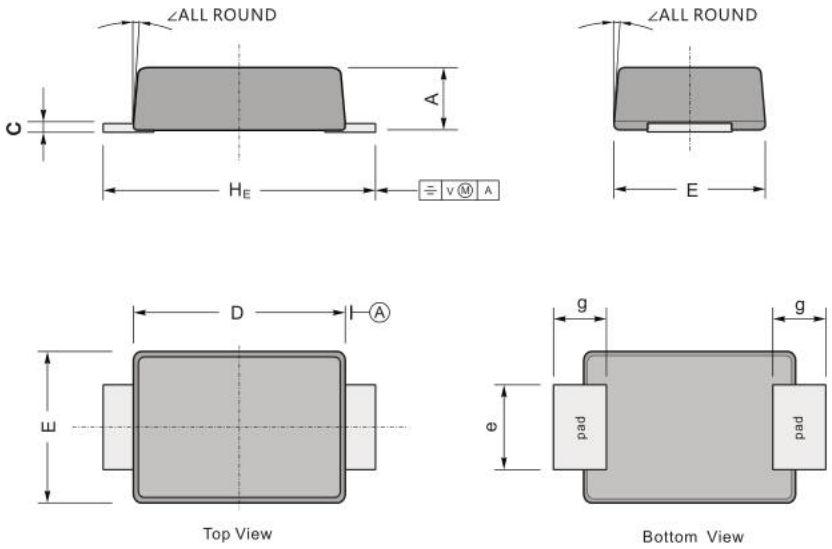
## Package Outline Dimensions in inches (millimeters)



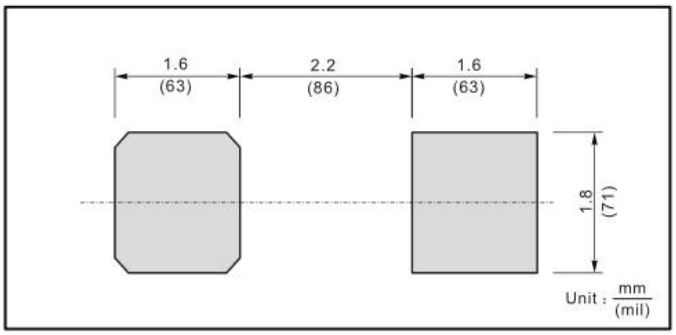

| UNIT | | A | C | D | E | e | g | $H_E$ | ∠ |
|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.10 | 0.20 | 3.70 | 2.70 | 1.60 | 1.20 | 4.90 | 5-7° |
| | min | 0.90 | 0.12 | 3.30 | 2.40 | 1.30 | 0.80 | 4.40 | |
| mil | max | 43 | 7.90 | 146 | 106 | 63 | 47 | 193 | |
| | min | 35 | 4.70 | 130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

## The Recommended Mounting Pad Size

Marking

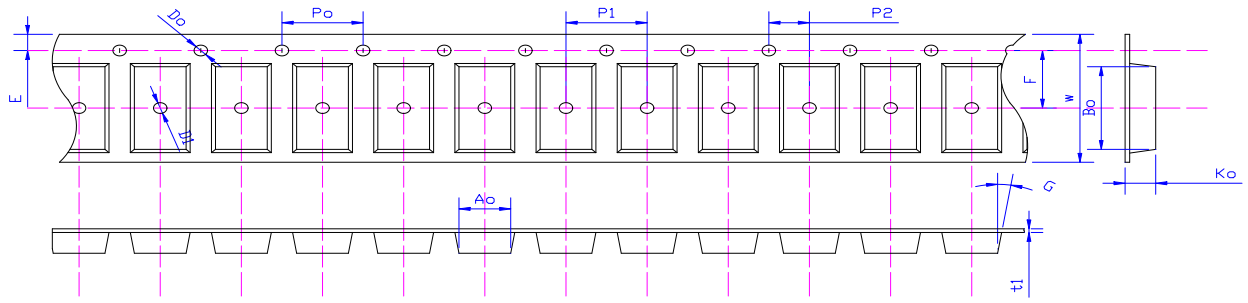
| Type number | Marking code |
|---|---|
| SS32F | SS32 |
| SS34F | SS34 |
| SS35F | SS35 |
| SS36F | SS36 |
| SS38F | SS38 |
| SS310F | SS310 |
| SS315F | SS315 |
| SS320F | SS320 |

The recommended mounting pad size



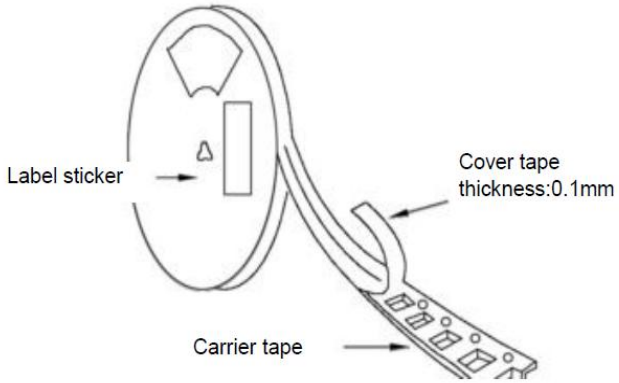
# Packing Requirments

- PS black anti-static carrier tape packing




| Specifications | Ao | Bo | Ko | Po | W | t1 |
|---|---|---|---|---|---|---|
| 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 |

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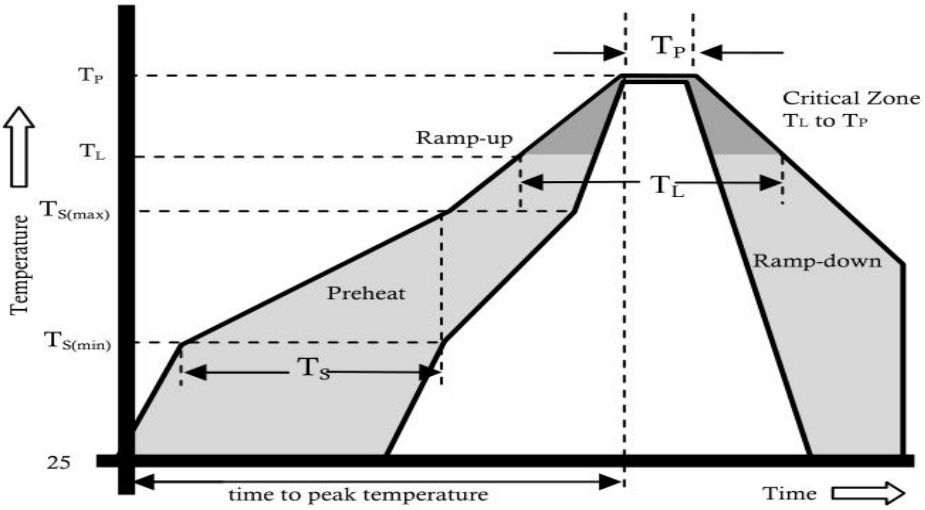
## Reflow Profile




| 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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