




SPECIFICATION SHEET

| | |
|--------------------------------|--|
| SPECIFICATION SHEET NO. | N0310-SMAFSS14F0S104 |
| DATE | Mar. 10, 2021 |
| REVISION | A0 |
| DESCRIPTION | <p>SMD Schottky Barrier Rectifier, 2 Pads, SMAF series, SS14F Type</p> <p>Reverse Voltage 40V Max. Forward Current 1.0A Max.</p> <p>Operating Temp. Range -50°C ~+125°C</p> <p>Package in Tape/Reel, 3000pcs/Reel</p> <p>RoHS/RoHS III compliant</p> |
| CUSTOMER | |
| CUSTOMER PART NUMBER | |
| CROSS REF. PART NUMBER | |
| ORIGINAL PART NUMBER | MDD SS14F |
| PART CODE | SMAFSS14F0S104 |

| | | | |
|-------------------------|---|--|---|
| VENDOR APPROVE | | | |
| Issued/Checked/Approved |  |  |  |
| DATE: March 10, 2021 | | | |

| | |
|-------------------------|--|
| CUSTOMER APPROVE | |
| | |
| DATE: | |

SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES



MAIN FEATURE

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Low power loss and high efficiency
- Built-in strain relief,
- High forward surge current capability
- Metal silicon junction, majority carrier conduction
- High temperature soldering guaranteed: 250°C/ 10 seconds at terminals

APPLICATION

- For surface mounted applications

RFQ

[Request For Quotation](#)

PART CODE GUIDE

| SMAF | SS14F0 | S | 104 |
|------|--------|---|-----|
| 1 | 2 | 3 | 4 |

- 1) **SMAF**: SMD Schottky Barrier Rectifier, 2 Pads, Package SMAF series,
- 2) **SS14F0**: Type code for original part number SS14F
- 3) **S**: Package code, Tape/reel, 3000pcs/reel.
- 4) **104**: Specification code for Reverse Voltage 40V Max. Forward Current 1.0A Max.

MORE ITEMS AVAILABLE

| | | | | |
|----------------|----------------|-----------------------|----------------|----------------|
| SMAFSS12F0S102 | SMAFSS13F0S103 | SMAFSS14F0S104 | SMAFSS15F0S105 | SMAFSS16F0S106 |
| SMAFSS18F0S108 | SMAFSS1100S110 | SMAFSS1150S115 | SMAFSS1200S120 | |
| SMAFSS22F0S202 | SMAFSS23F0S203 | SMAFSS24F0S204 | SMAFSS25F0S205 | SMAFSS26F0S206 |
| SMAFSS28F0S208 | SMAFSS2100S210 | SMAFSS2150S215 | SMAFSS2200S220 | |
| SMAFSS32F0S302 | SMAFSS33F0S303 | SMAFSS34F0S304 | SMAFSS35F0S305 | SMAFSS36F0S306 |
| SMAFSS38F0S308 | SMAFSS3100S310 | SMAFSS3150S315 | SMAFSS3200S320 | |
| SMAFSS52F0S502 | SMAFSS53F0S503 | SMAFSS54F0S504 | SMAFSS55F0S505 | SMAFSS56F0S506 |
| SMAFSS58F0S508 | SMAFSS5100S510 | SMAFSS5150S515 | SMAFSS5200S520 | |

SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES

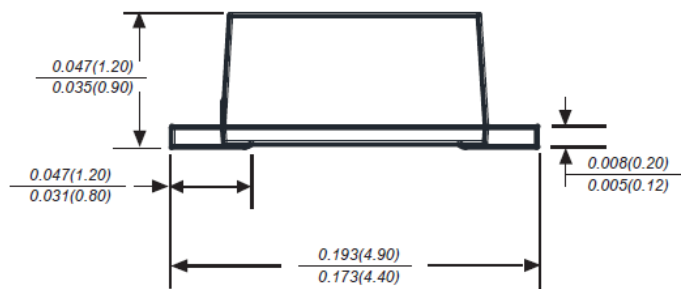
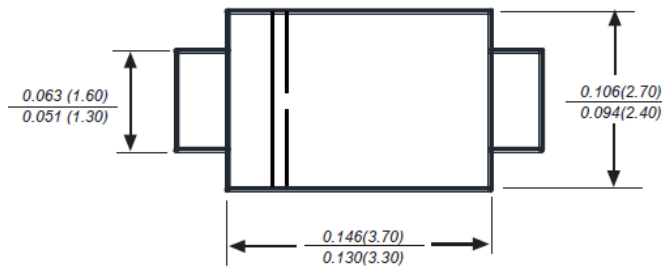
DIMENSION (Unit: Inch/mm)

Image for reference

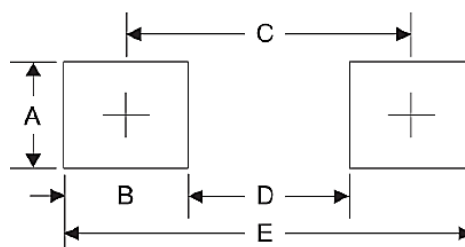


Marking: SS14F

SMAF



Recommend Pad Layout



| Symbol | Unit (Inch) | Unit (mm) |
|--------|-------------|-----------|
| A | 0.071 | 1.80 |
| B | 0.063 | 1.60 |
| C | 0.150 | 3.80 |
| D | 0.087 | 2.21 |
| E | 0.213 | 5.40 |

SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES

MECHANICAL DATA

| Case | Terminals | Polarity | Mounting Position | Weight per piece |
|--------------------------------|--|--------------------------------|-------------------|----------------------------|
| JEDEC SMAF molded plastic body | Solder plated, Solderable per MIL-STD-750, Method 2026 | Color band denotes cathode end | Any | 0.0018 Ounce, 0.0510 grams |

MAX. RATING & CHARACTERISTICS

| Parameter | SYMBOLS | VALUE | | | UNITS |
|--|-----------|-------|---------|------|-------|
| | | Min. | Typical | Max. | |
| Repetitive peak reverse voltage | V_{RRM} | | | 40 | Volts |
| RMS voltage | V_{RMS} | | | 28 | Volts |
| DC blocking voltage | V_{DC} | | | 40 | Volts |
| Average forward output rectified current at TL(see fig.1) | I_{AV} | | | 1.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | | 30 | | A |
| Instantaneous forward voltage at 1.0A | V_F | | | 0.55 | Volts |
| DC reverse current at rated DC blocking voltage | I_R | | | 0.50 | mA |
| | | | | 10.0 | mA |
| Junction capacitance (Note 2) | C_J | | 110 | | pF |
| Thermal resistance (Note 3) | R_{QJA} | | 88 | | °C/W |
| Operating junction temperature range | T_J | -55 | | +125 | °C |
| Storage temperature range | T_{STG} | -55 | | +150 | °C |

Note

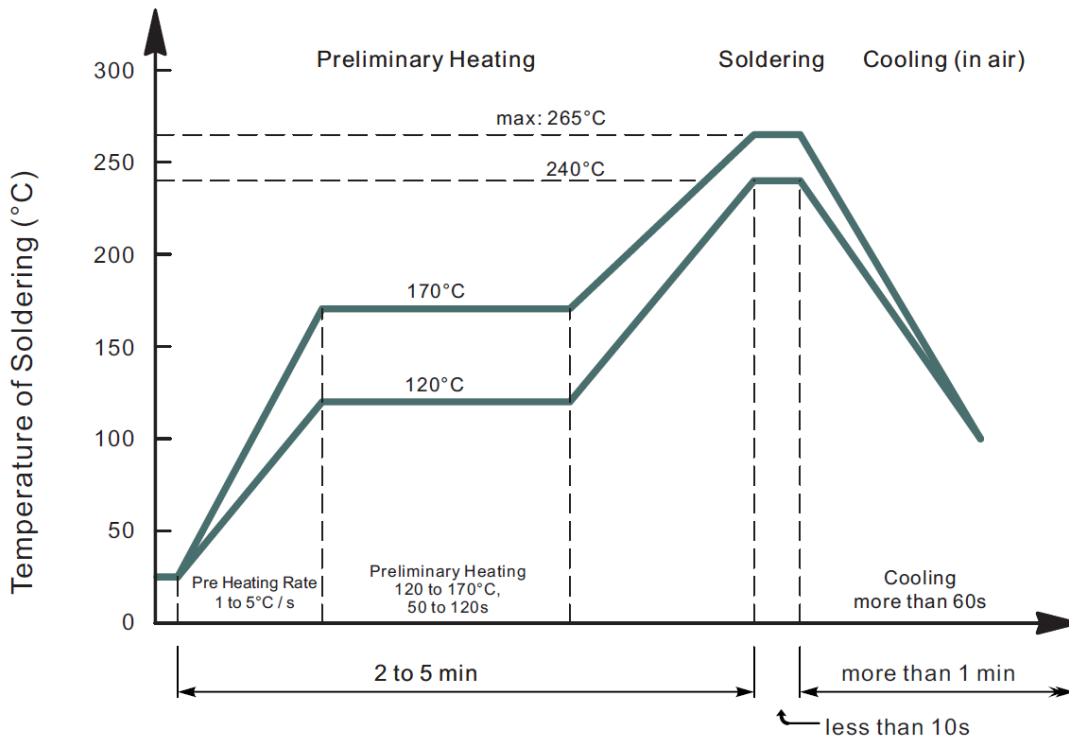
1. Ratings at 25 C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.
2. Measured at 1.0MHz and applied reverse voltage of 4.0Voltage
3. P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas.

SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES
RELIABILITY

| Number | Experiment Items | Experiment Method And Conditions | Reference Documents |
|--------|------------------------------------|--|---------------------------------|
| 1 | Solder Resistance Test | Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32" | MIL-STD-750D METHOD-2031.2 |
| 2 | Solderability Test | 230°C ±5°C for 5 sec. | MIL-STD-750D METHOD-2026.1 0 |
| 3 | Pull Test | 1 kg in axial lead direction for 10 sec. | MIL-STD-750D METHOD-2036.4 |
| 4 | Bend Test | 0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times | MIL-STD-750D METHOD-2036.4 |
| 5 | High Temperature Reverse Bias Test | TA=100°C for 1000 Hours at VR=80% Rated VR | MIL-STD-750D METHOD-1038.4 |
| 6 | Forward Operation Life Test | TA=25°C Rated Average Rectified Current | MIL-STD-750D METHOD-1027.3 |
| 7 | Intermittent Operation Life Test | On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles. | MIL-STD-750D METHOD-1036.3 |
| 8 | Pressure Cooker Test | 15 PSIG, TA=121°C, 4 hours | MIL-S-19500 APPENOIXC |
| 9 | Temperature Cycling Test | -55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles. | MIL-STD-750D METHOD-1051.7 |
| 10 | Thermal Shock Test | 0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles | MIL-STD-750D METHOD-1056.7 |
| 11 | Forward Surge Test | 8.3ms Single Sale Sine-wave One Surge. | MIL-STD-750D METHOD-4066.4 |
| 12 | Humidity Test | TA=65°C, RH=98% for 1000 hours. | MIL-STD-750D METHOD-1021.3 |
| 13 | High Temperature Storage life Test | 150°C for 1000 Hours | MIL-STD-750D METHOD-1031.5 |

SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES

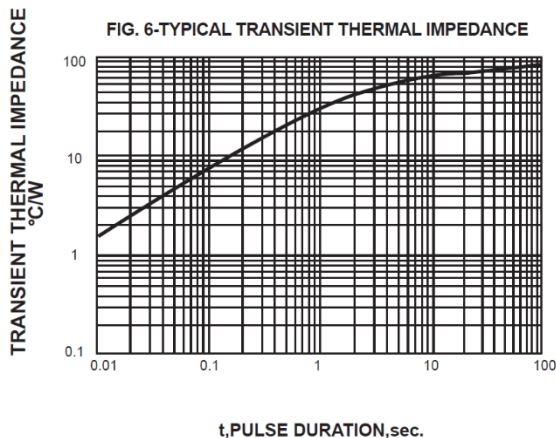
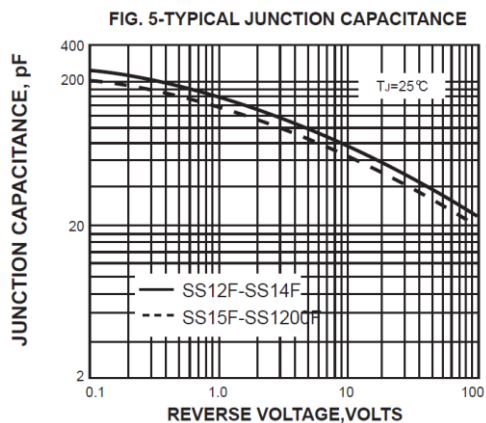
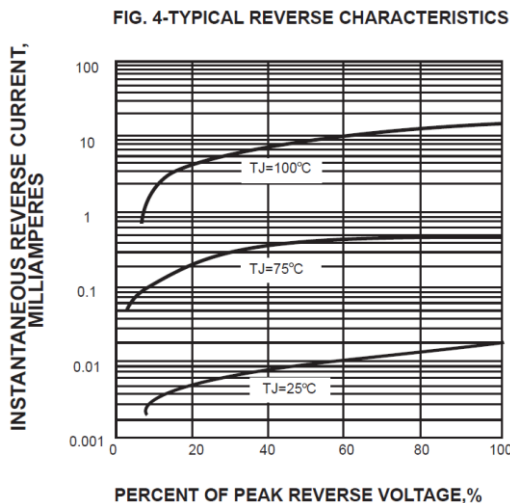
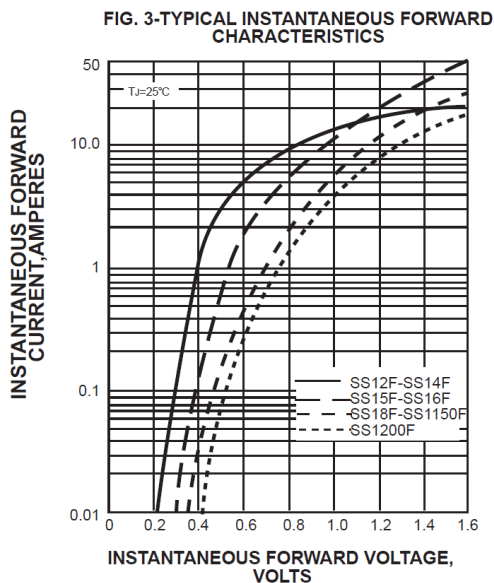
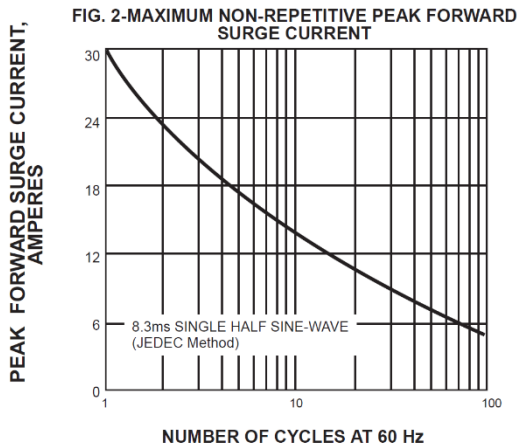
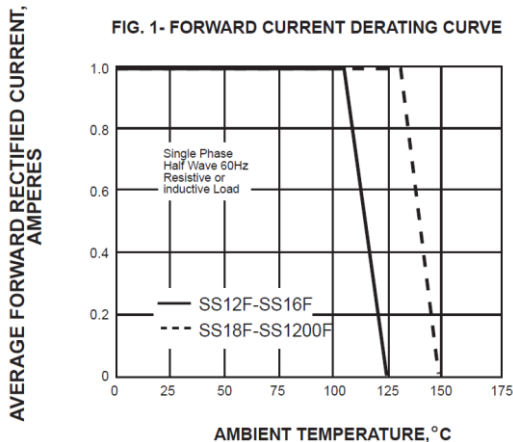
SUGGESTED REFLOW PROFILE (For Reference Only)



- Recommended peak temperature is over 245°C, If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)
- Welding shall not exceed 2 times
- Remark: lead free solder paste (96.5 sn/3.0 Ag/0.5Cu)

SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES

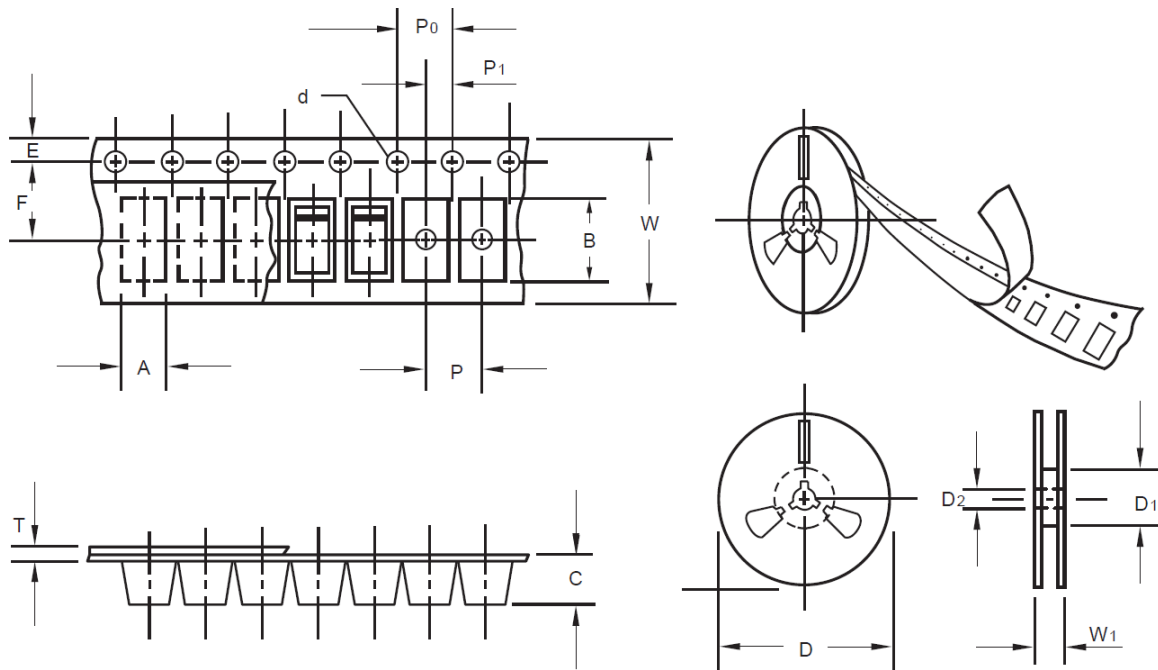
RATINGS AND CHARACTERISTIC CURVES (For Reference Only)



SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES

TAPE/REEL (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-A and specifications.

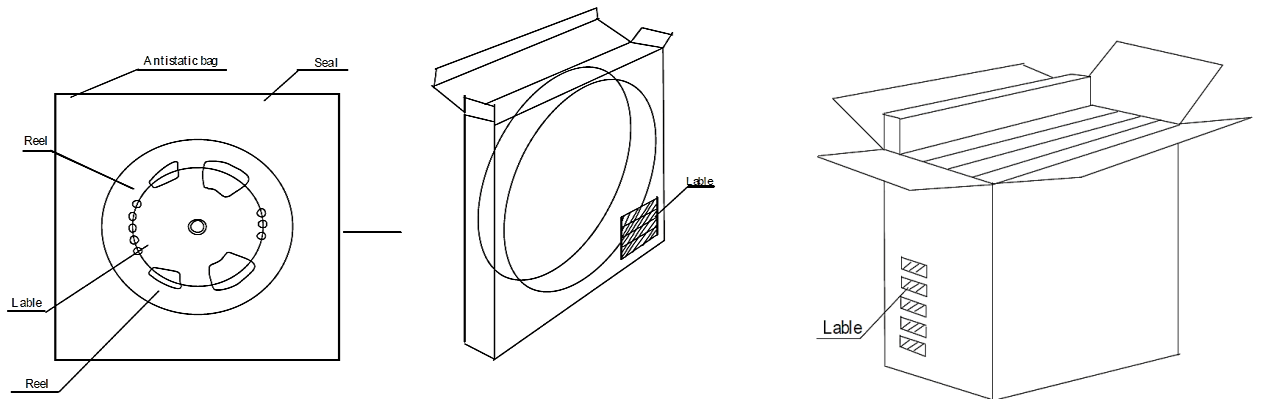


| Item | Symbol | Tolerance | SMAF |
|--------------------------|--------|-----------|--------|
| Carrier width | A | 0.1 | 2.80 |
| Carrier Length | B | 0.1 | 4.75 |
| Carrier Depth | C | 0.1 | 1.42 |
| Sprocket hole | d | 0.05 | 1.50 |
| 7" Reel outside diameter | D | 2.0 | 178.00 |
| 7" Reel inner diameter | D1 | Min. | 54.40 |
| Feed hole diameter | D2 | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 5.05 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | P0 | 0.1 | 4.00 |
| Embossment center | P1 | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.30 |
| Tape width | W | 0.3 | 8.00 |
| Reel width | W1 | 1.0 | 12.30 |

SMD SCHOTTKY BARRIER RECTIFIER SMAF SERIES

PACKAGE

| Case Code | Reel Size | MPQ (pcs) | Component Spacing (mm) | Qty. Per Box (pcs) | Inner Box L*W*H (mm) | Reel Size (mm) | Carton size L*W*H (mm) | Qty. Per Carton (pcs) | G. W (kg) |
|-----------|-----------|-----------|------------------------|--------------------|----------------------|----------------|------------------------|-----------------------|-----------|
| SMAF | 7" | 3,000 | | 6,000 | 210*208*203 | 178 | 400*400*250 | 120,000 | 10.0 |
| | | | | | | | | | |
| | | | | | | | | | |



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