




SPECIFICATION SHEET

| | |
|--------------------------------|---|
| SPECIFICATION SHEET NO. | N0310-SMAM700000S10A |
| DATE | Mar. 10, 2021 |
| REVISION | A0 |
| DESCRIPTION | <p>SMD General Rectifier, 2 Pads, SMA series, M7 Type</p> <p>Reverse Voltage 1000V Max. Forward Current 1.0A Max.</p> <p>Operating Temp. Range -55°C ~+150°C</p> <p>Package in Tape/Reel, 2000pcs/Reel</p> <p>RoHS/RoHS III compliant</p> |
| CUSTOMER | |
| CUSTOMER PART NUMBER | |
| CROSS REF. PART NUMBER | |
| ORIGINAL PART NUMBER | MDD M7 |
| PART CODE | SMAM700000S10A |

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

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

SMD GENERAL RECTIFIER SMA SERIES



MAIN FEATURE

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed: 250°C/ 10 seconds at terminals
- Glass passivated chip junction

APPLICATION

- For printed circuit board

RFQ

[Request For Quotation](#)

PART CODE GUIDE

| SMA | M700000 | S | 10A |
|-----|---------|---|-----|
| 1 | 2 | 3 | 4 |

- 1) **SMA**: SMD General Rectifier, 2 Pads, SMA series
- 2) **M700000**: Type code for original part number M7
- 3) **S**: Package code, Tape/reel, 2000pcs/reel.
- 4) **10A**: Specification code for Reverse Voltage 1000V Max. Forward Current 1.0A Max.

MORE ITEMS AVAILABLE

| | | | | |
|----------------|-----------------------|----------------|----------------|----------------|
| SMAM100000S105 | SMAM200000S110 | SMAM300000S120 | SMAM400000S140 | SMAM500000S160 |
| SMAM600000S180 | SMAM700000S10A | | | |
| SMAS1A0000S105 | SMAS1B0000S110 | SMAS1D0000S120 | SMAS1G0000S140 | SMAS1J0000S160 |
| SMAS1K0000S180 | SMAS1M0000S10A | | | |
| SMAS2A0000S105 | SMAS2B0000S110 | SMAS2D0000S120 | SMAS2G0000S140 | SMAS2J0000S160 |
| SMAS2K0000S180 | SMAS2M0000S10A | | | |
| | | | | |

SMD GENERAL RECTIFIER SMA SERIES

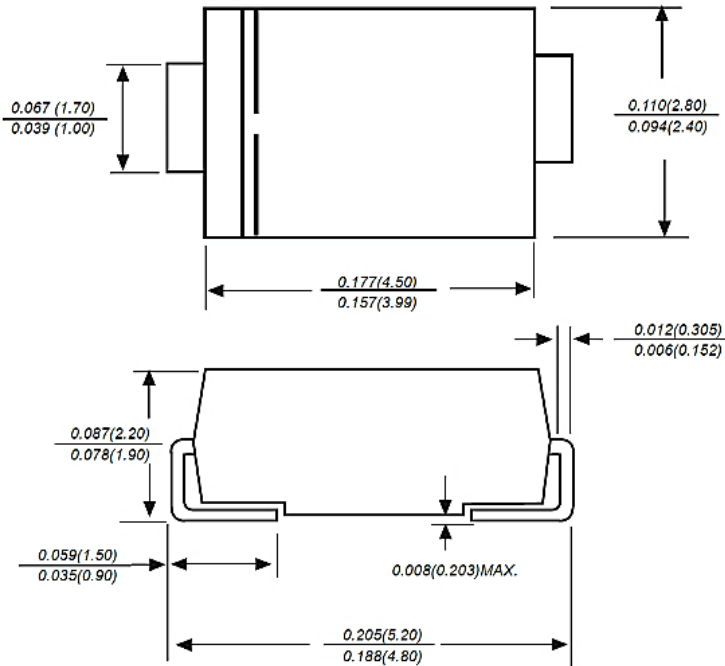
DIMENSION (Unit: Inch/mm)

Image for reference

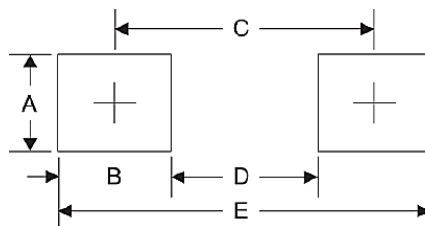


Marking: M7

SMA/DO-214AC



Recommend Pad Layout



| Symbol | Unit (Inch) | Unit (mm) |
|--------|-------------|-----------|
| A | 0.066 | 1.680 |
| B | 0.060 | 1.520 |
| C | 0.154 | 3.900 |
| D | 0.095 | 2.410 |
| E | 0.215 | 5.450 |

SMD GENERAL RECTIFIER SMA SERIES
MECHANICAL DATA

| Case | Terminals | Polarity | Mounting Position | Weight per piece |
|--|--|---------------------------------|-------------------|----------------------------|
| JEDEC SMA/DO-214AC molded plastic body | Solder plated, Solderable per MIL-STD-750, Method 2026 | Polarity symbol marking on case | Any | 0.0023 Ounce, 0.0715 grams |

MAX. RATING & CHARACTERISTICS

| Parameter | SYMBOLS | VALUE | | | UNITS |
|--|------------------|-------|---------|----------|-------|
| | | Min. | Typical | Max. | |
| Repetitive peak reverse voltage | V _{RRM} | | | 1000 | Volts |
| RMS voltage | V _{RMS} | | | 700 | Volts |
| DC blocking voltage | V _{DC} | | | 1000 | Volts |
| Average forward output rectified current at TL= 110°C | 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 | | | 1.10 | Volts |
| DC reverse current at rated DC blocking voltage | I _R | | | 5 | μA |
| | | | | TA=125°C | 50 |
| Junction capacitance (Note 2) | C _J | | 15 | | pF |
| Thermal resistance (Note 3) | R _{QJA} | | 75 | | °C/W |
| Operating junction temperature range | T _J | -55 | | +150 | °C |
| Storage temperature range | T _{STG} | -55 | | +150 | °C |

Note

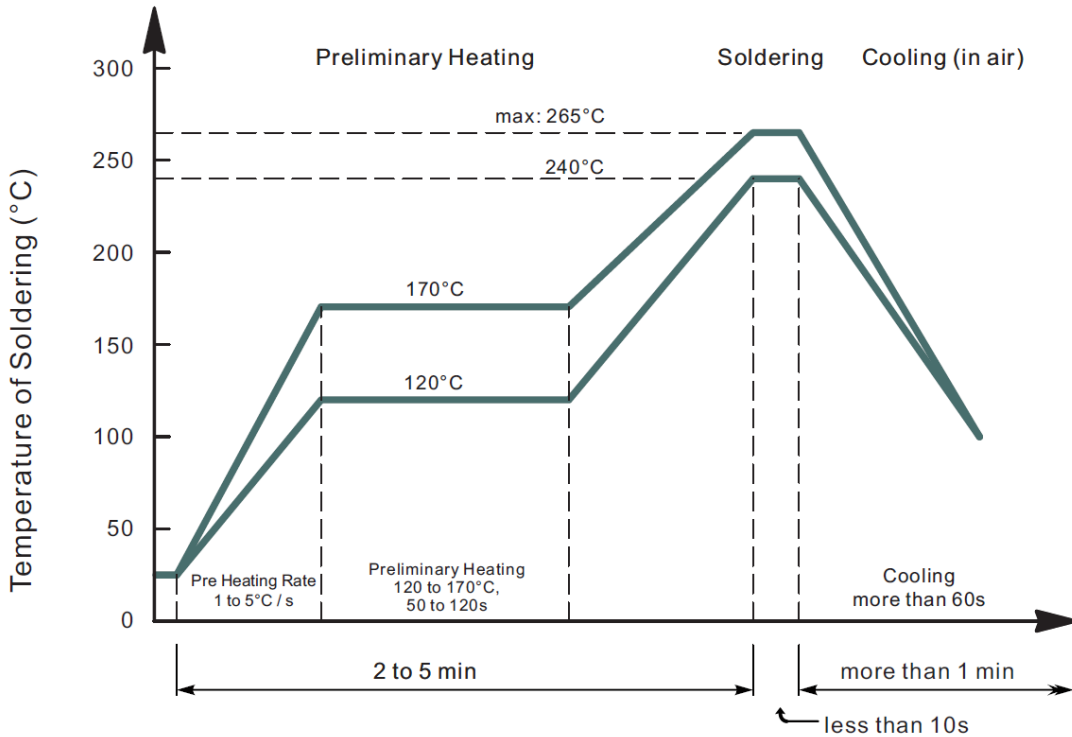
- Ratings at 25 C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.
- Measured at 1.0MHz and applied reverse voltage of 4.0Voltage
- P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas.

SMD GENERAL RECTIFIER SMA 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 GENERAL RECTIFIER SMA SERIES

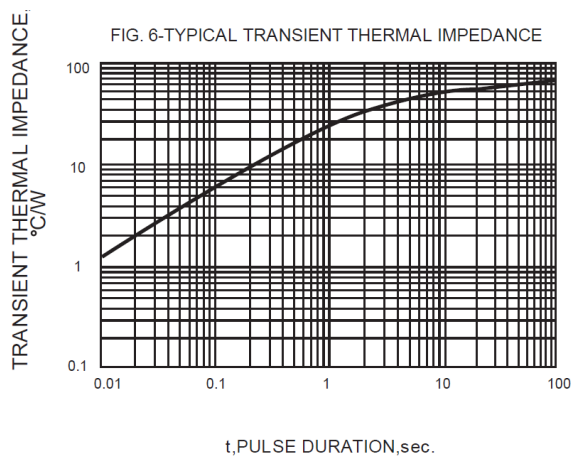
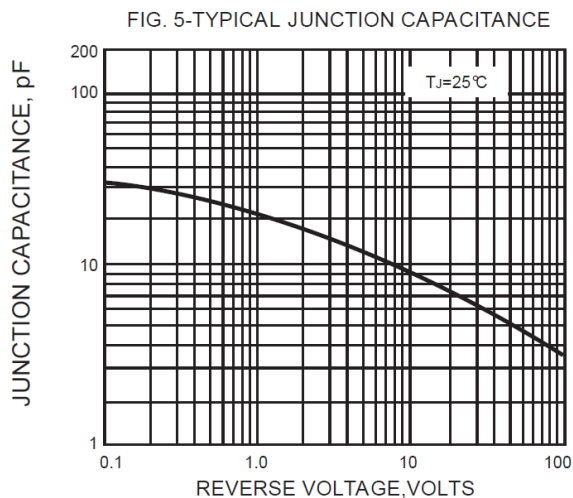
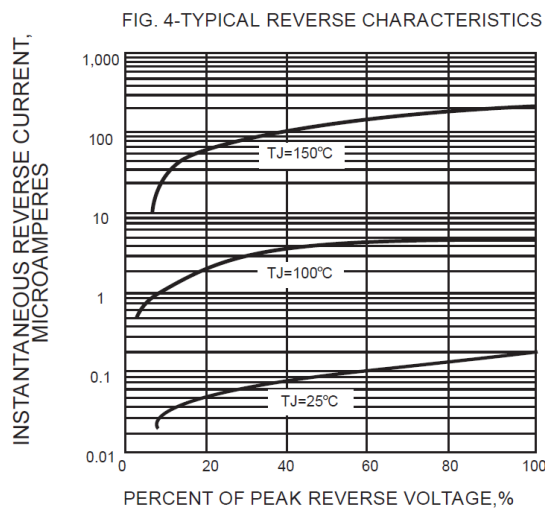
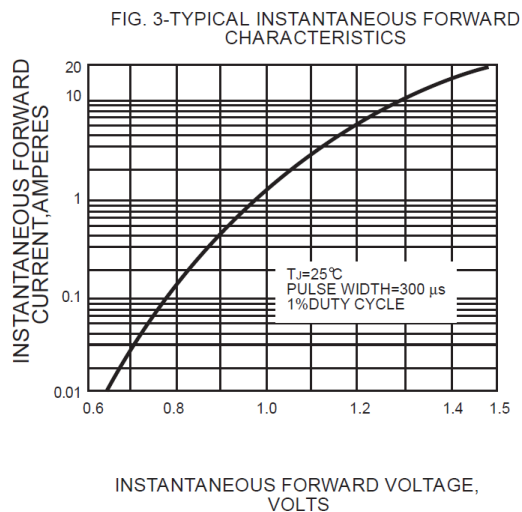
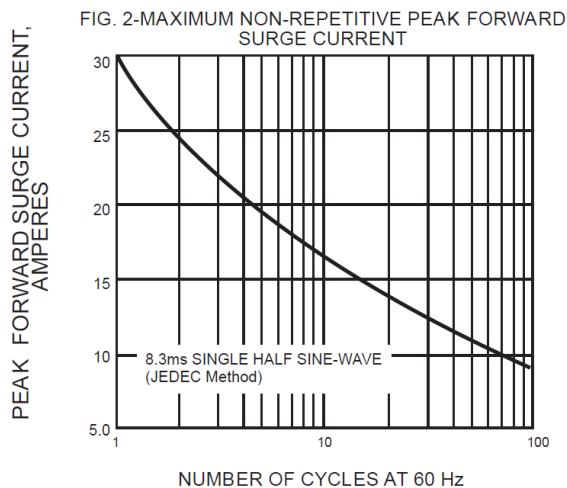
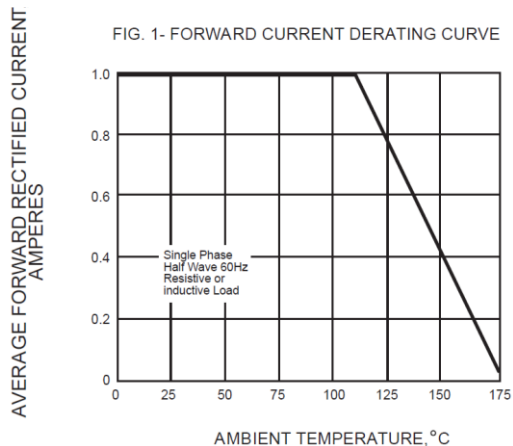
SUGGESTED REFLOW PROFILE (For Reference Only)



- 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 GENERAL RECTIFIER SMA SERIES

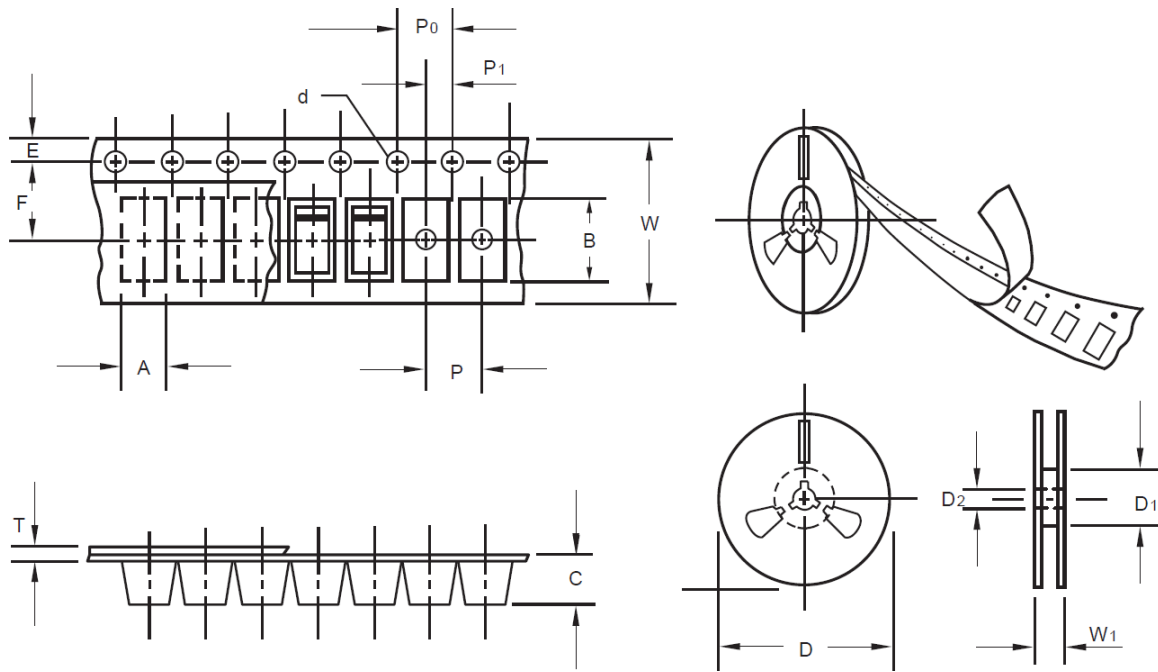
RATINGS AND CHARACTERISTIC CURVES (For Reference Only)



SMD GENERAL RECTIFIER SMA SERIES

TAPE/REEL (Unit: mm)

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

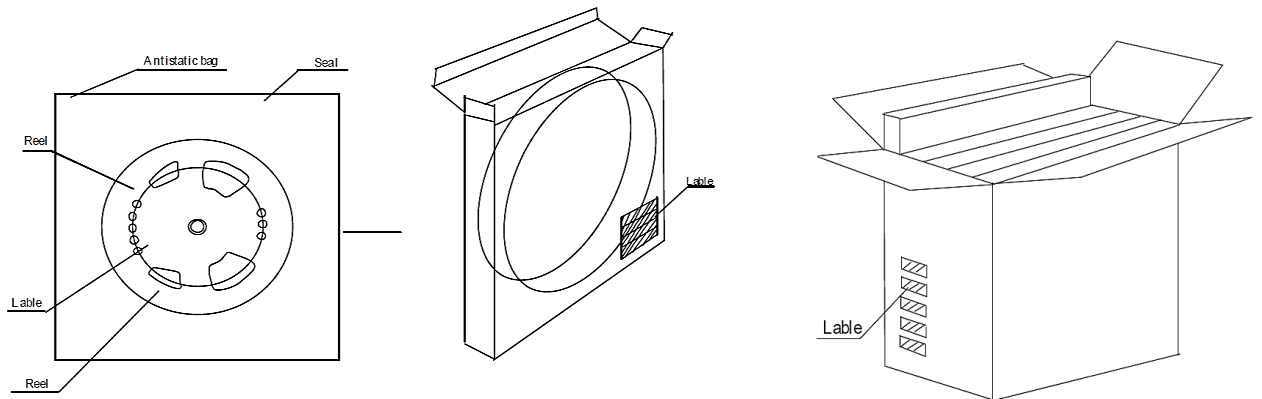


| Item | Symbol | Tolerance | SMA/DO-214AC |
|---------------------------|--------|-----------|--------------|
| Carrier width | A | 0.1 | 2.8 |
| Carrier Length | B | 0.1 | 5.33 |
| Carrier Depth | C | 0.1 | 2.36 |
| Sprocket hole | d | 0.05 | 1.50 |
| 13" Reel outside diameter | D | - | - |
| 13" Reel inner diameter | D1 | - | - |
| 7" Reel outside diameter | D | 2.0 | 178.00 |
| 7" Reel inner diameter | D1 | Min. | 62.00 |
| Feed hole diameter | D2 | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 5.50 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | P0 | 0.1 | 4.00 |
| Embossment center | P1 | 0.1 | 2.0 |
| Overall tape thickness | T | 0.1 | 0.28 |
| Tape width | W | 0.3 | 12.00 |
| Reel width | W1 | 1.0 | 18.0 |

SMD GENERAL RECTIFIER SMA 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) |
|-----------|-----------|-----------|------------------------|--------------------|----------------------|----------------|------------------------|-----------------------|-----------|
| SMA | 7" | 2,000 | | 4,000 | 183*155*183 | 178 | 370*370*380 | 80,000 | 11.0 |
| | | | | | | | | | |
| | | | | | | | | | |



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