






THE DATASHEET OF MSB30M



SPECIFICATION SHEET

| | |
|--------------------------------|---|
| SPECIFICATION SHEET NO. | N0626-UMSB30M000S30A |
| DATE | June 26, 2021 |
| REVISION | A0 |
| DESCRIPTION | SMD Single Phase Glass Passivated Bridge Rectifier, UMSB Series, MSB30M Type 4 Pins, Reverse Voltage 1000V Max. Forward Current 3.0A Max. Operating Temp. Range -55°C ~+150°C, Package in Tape/Reel, 3000pcs/R RoHS/RoHS III compliant |
| CUSTOMER | |
| CUSTOMER PART NUMBER | |
| CROSS REF. PART NUMBER | |
| ORIGINAL PART NUMBER | MDD MSB30M |
| PART CODE | UMSB30M000S30A |

| | | | |
|-------------------------|---|--|---|
| VENDOR APPROVE | | | |
| Issued/Checked/Approved |  |  |  |
| DATE: June 26, 2021 | | | |

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

SMD BRIDGE RECTIFER UMSB SERIES



MAIN FEATURE

- Glass passivated chip junction
- Reverse voltage 1000V
- forward current 3A
- High surge current capability

APPLICATION

- For SMD application

RFQ

[Request For Quotation](#)

PART CODE GUIDE

| UMSB | 30M000 | S | 30A |
|------|--------|---|-----|
| 1 | 2 | 3 | 4 |

1) **UMSB**: SMD Single Phase Glass Passivated Bridge Rectifier, 4 pins, UMSB Series

2) **30M000**: Type code for original part number MSB30M

3) **S**: Package code, Tape/reel, 3000pcs/reel.

4) **30A**: Specification code for Reverse Voltage 1000V Max. Forward Current 3.0A Max.

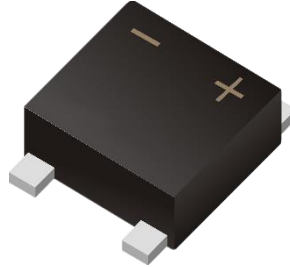
MORE ITEMS AVAILABLE

| | | | | |
|----------------|----------------|----------------|----------------|-----------------------|
| UMSB30D000S320 | UMSB30G000S340 | UMSB30J000S360 | UMSB30K000S380 | UMSB30M000S30A |
| | | | | |

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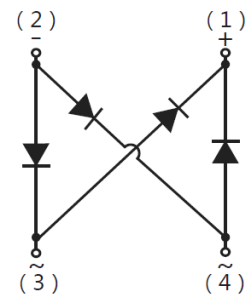
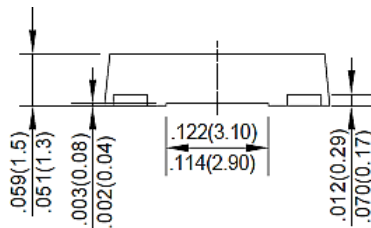
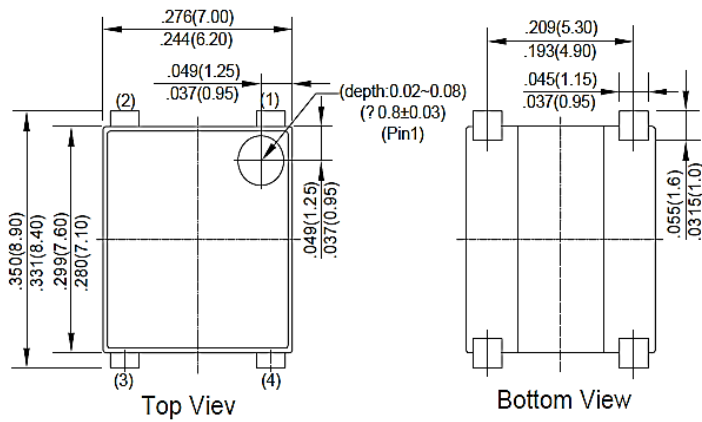
DIMENSION (Unit: Inch/mm)

Image for reference

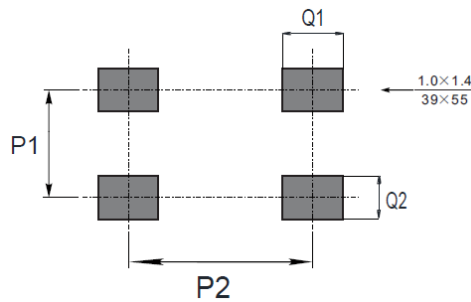


Marking: MSB30M

UMSB



Recommend Pad Layout



| Symbol | Min. (Inch) | Min. (mm) |
|--------|-------------|-----------|
| P1 | 0.201 | 5.1 |
| P2 | 0.278 | 7.1 |
| Q1 | 0.071 | 1.8 |
| Q2 | 0.051 | 1.3 |

SMD BRIDGE RECTIFIER UMSB SERIES
MECHANICAL DATA

| Case | Terminals | Polarity | Mounting Position | Weight per piece |
|--------------------------------|--|---------------------------------|-------------------|----------------------------|
| JEDEC UMSB molded plastic body | Solder plated, Solderable per MIL-STD-750, Method 2026 | Polarity symbol marking on case | Any | 0.00825 Ounce, 0.234 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 T _c = 30°C On glass-epoxy PCB On aluminum substrate | I _{AV} | | | 3.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | | 80 | | A |
| Instantaneous forward voltage at 3.0A | V _F | | | 1.1 | Volts |
| DC reverse current at rated DC blocking voltage | I _R | | | 5 | μA |
| | | | | 100 | μA |
| Junction capacitance (Note 2) | C _J | | 40 | | pF |
| Thermal resistance | R _{QJA} | | - | | °C/W |
| Operating junction temperature range | T _J | -55 | | +150 | |
| 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 4Vdc
- PCB mounted with 4"*1.5"*1.5" copper pad area.

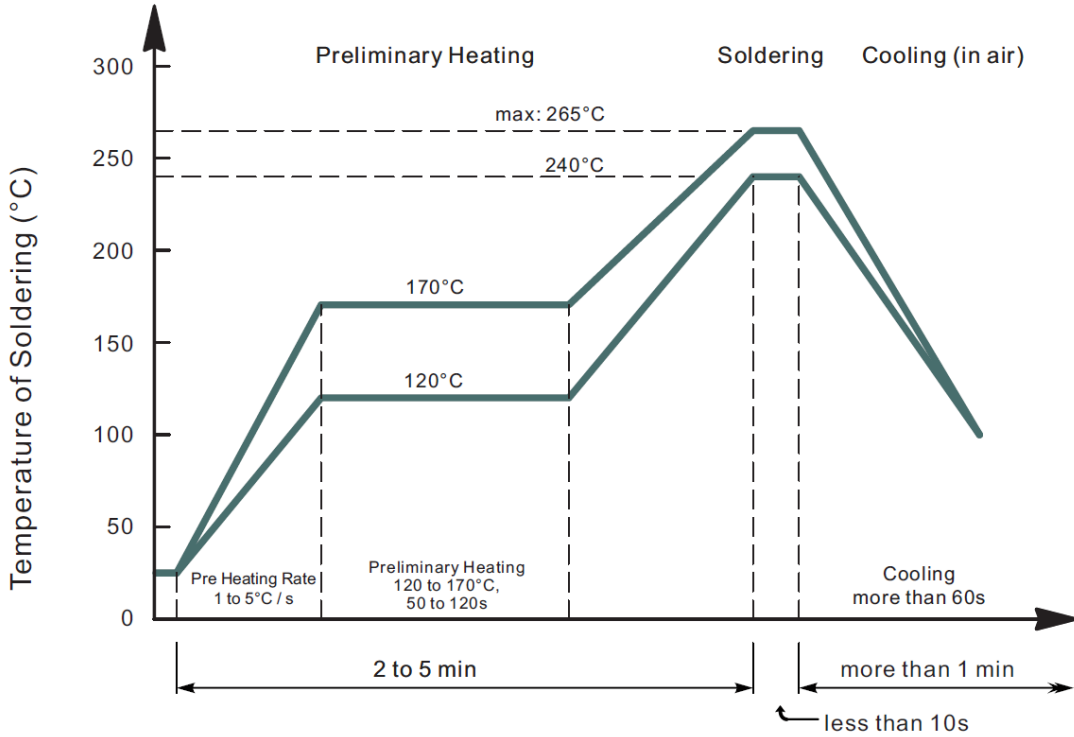
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RELIABILITY

| 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 |

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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)

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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.1 Average Rectified Output Current Derating Curve

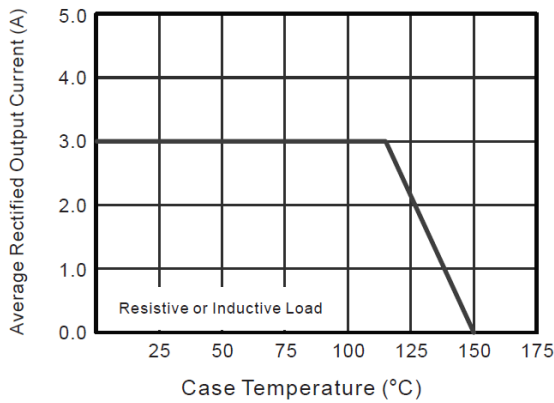


Fig.2 Typical Reverse Characteristics

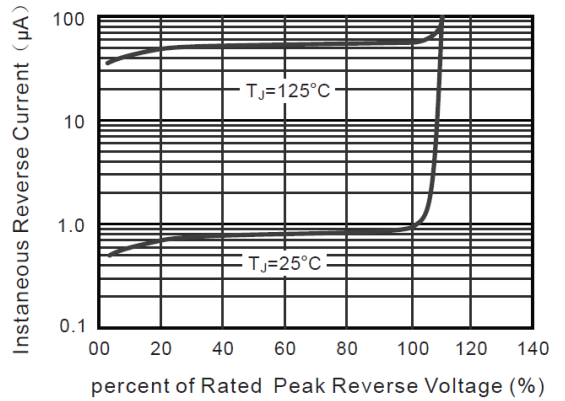


Fig.3 Typical Instantaneous Forward Characteristics

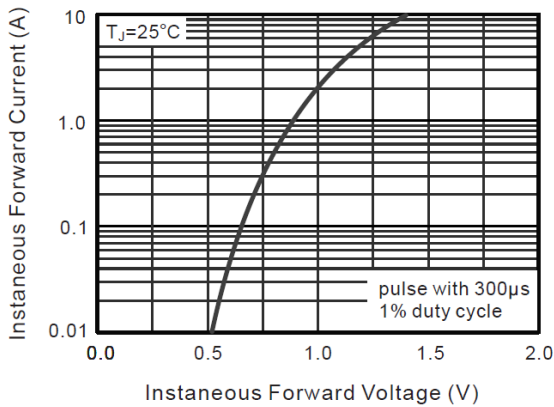


Fig.4 Typical Junction Capacitance

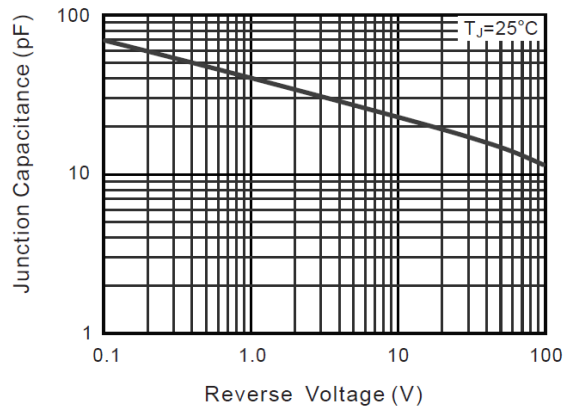
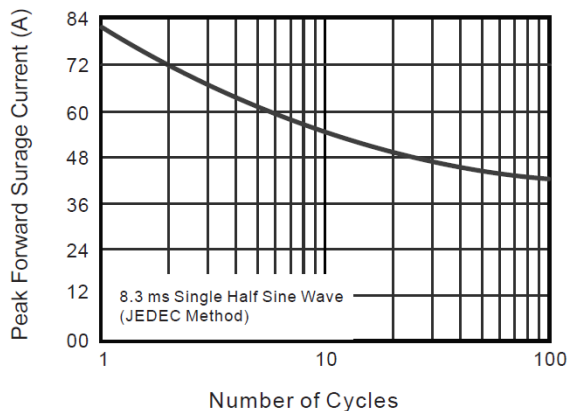


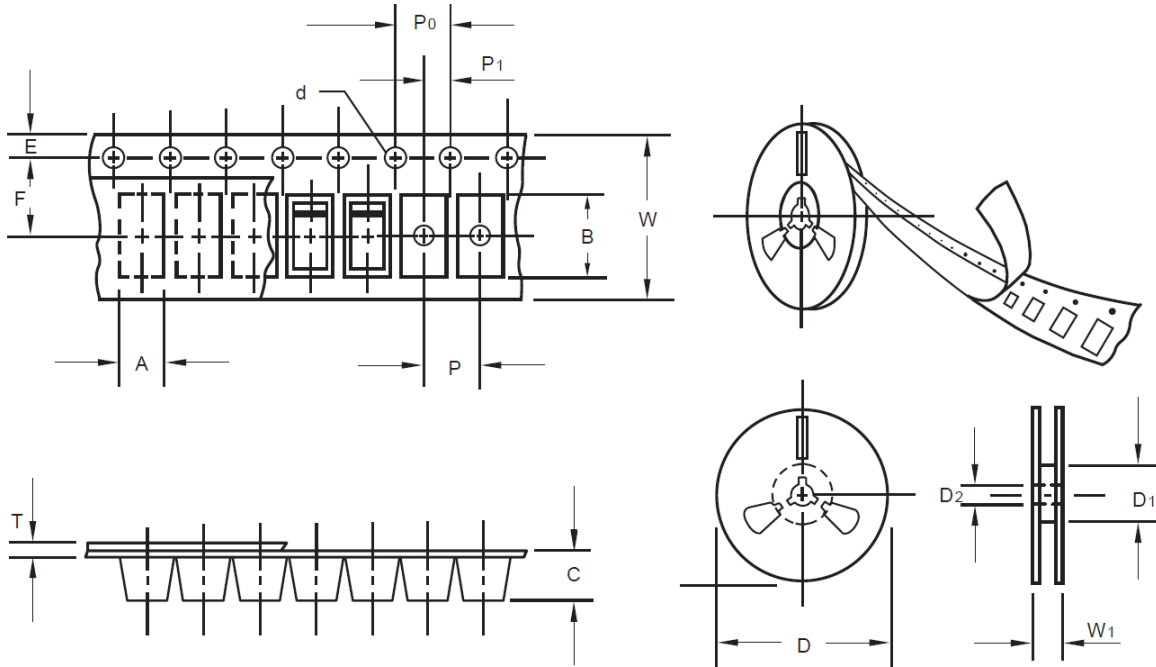
Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



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TAPE/REEL (Unit: mm)

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

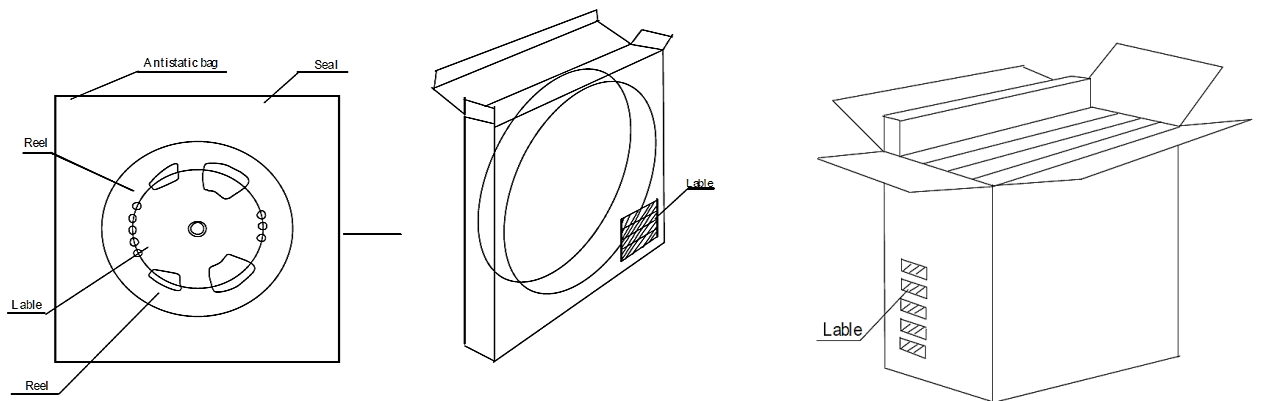


| Item | Symbol | Tolerance | UMSB |
|--------------------------|--------|-----------|--------|
| Carrier width | A | 0.1 | 2.8 |
| Carrier Length | B | 0.1 | 5.33 |
| Carrier Depth | C | 0.1 | 2.36 |
| Sprocket hole | d | 0.05 | 1.50 |
| 13"Reel outside diameter | D | 2.0 | 330.00 |
| 13"Reel inner diameter | D1 | Min. | 50.00 |
| 7"Reel outside diameter | D | - | - |
| 7"Reel inner diameter | D1 | - | - |
| 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 BRIDGE RECTIFIER UMSB 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) |
|-----------|-----------|-----------|------------------------|--------------------|----------------------|----------------|------------------------|-----------------------|-----------|
| UMSB | 13" | 3,000 | - | 6,000 | 340*340*60 | 330 | 380*380*380 | 48,000 | 19.6 |
| | | | | | | | | | |
| | | | | | | | | | |



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