# MD130S-M3

RoHS COMPLIANT

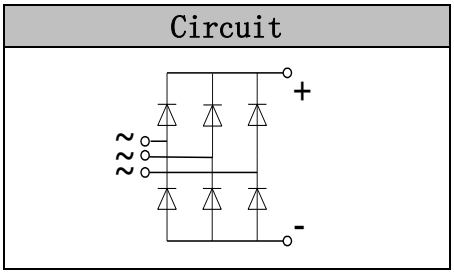
## Glass Passivated Three Phase Rectifier Bridge

**VRRM** 800 to 1800V
**ID** 130 A

### Applications

- Three phase rectifiers for power supplies
- Rectifiers for DC motor field supplies
- Battery charger rectifiers
- Input rectifiers for variable frequency drives

Circuit




### Features

- Three phase bridge rectifier
- Blocking voltage:800 to 1800V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- UL recognized applied for file no. E230084

### Module Type

| TYPE | VRRM | VRSM |
|---|---|---|
| MD130S08M3 | 800V | 900V |
| MD130S12M3 | 1200V | 1300V |
| MD130S16M3 | 1600V | 1700V |
| MD130S18M3 | 1800V | 1900V |

### Maximum Ratings

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $I_D$ | Three phase, full wave Tc=100℃ | 130 | A |
| $I_{FSM}$ | t=10mS Tvj =45℃ | 1200 | A |
| $i^2t$ | t=10mS Tvj =45℃ | 7200 | $A^2s$ |
| $V_{isol}$ | a.c.50HZ;r.m.s.;1min | 3000 | V |
| $T_{vj}$ | | -40 to +150 | ℃ |
| $T_{stg}$ | | -40 to +125 | ℃ |
| Mt | To terminals(M6) | 5±15% | Nm |
| Ms | To heatsink(M6) | 5±15% | Nm |
| Weight | Module | 230 | g |

### Thermal Characteristics

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| Rth(j-c) | Per diode | 0.9 | ℃/W |
| Rth(j-c) | Per Module | 0.15 | ℃/W |
| Rth(c-s) | Module (Approximately) | 0.03 | ℃/W |

## Electrical Characteristics

| Symbol | Conditions | Values | | | Units |
|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | |
| $r_f$ | $T_J$=150℃ | - | 2.75 | - | mΩ |
| $V_{fO}$ | $T_J$=150℃ | - | 0.77 | - | V |
| $V_{FM}$ | T=25℃ $I_F$ =300A | — | 1.45 | 1.65 | V |
| $I_{RD}$ | $T_{vj}$=25℃ $V_{RD}$=$V_{RRM}$<br>$T_{vj}$=150℃ $V_{RD}$=$V_{RRM}$ | — | — | 0.3<br>5 | mA<br>mA |

## Performance Curves

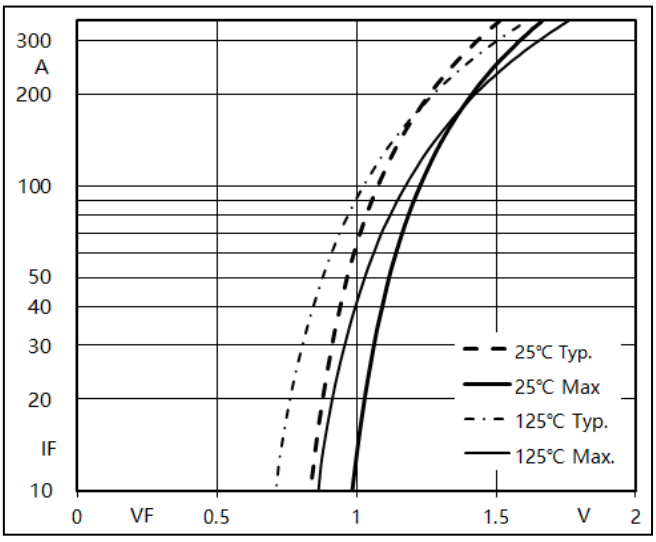



Fig1. Forward Characteristics

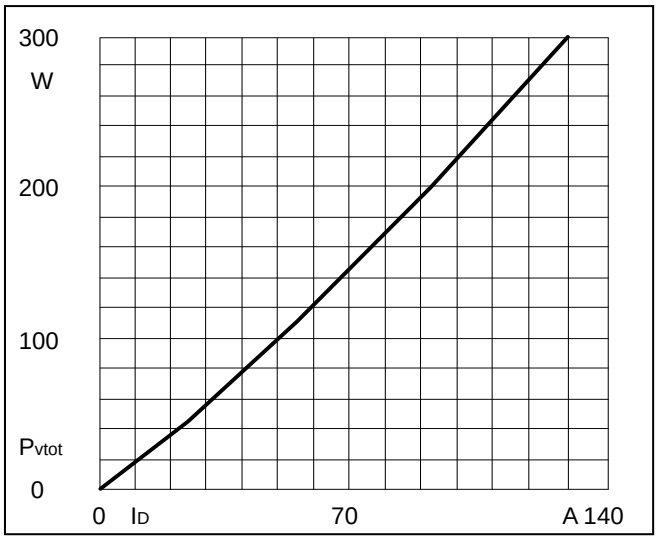



Fig2. Power dissipation

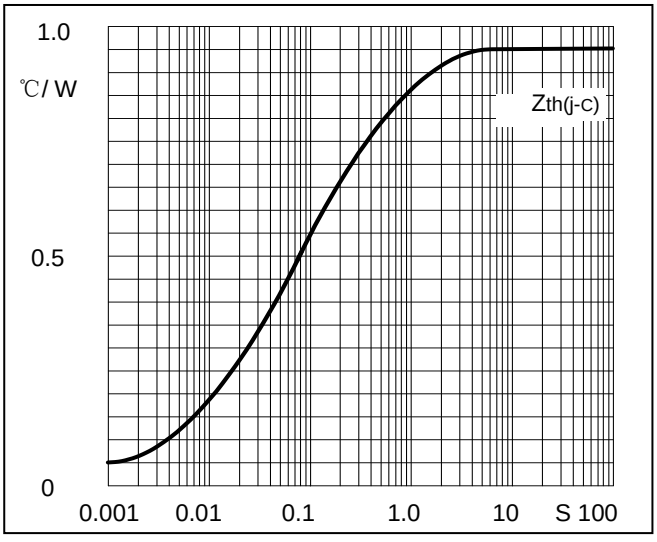



Fig3. Transient thermal impedance

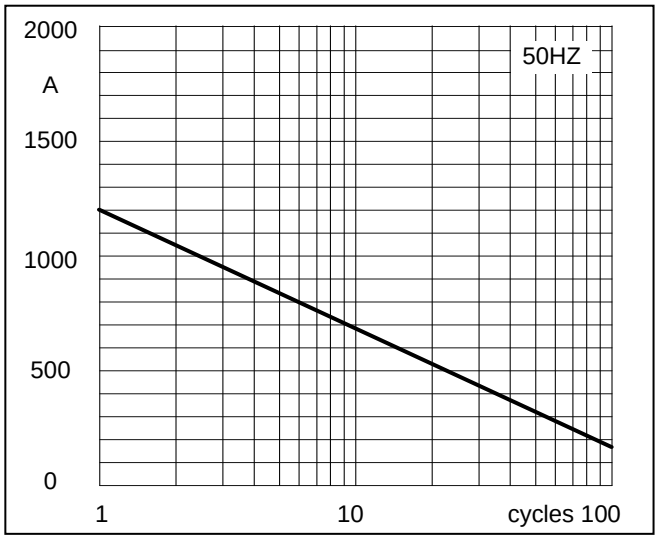



Fig4. Max Non-Repetitive Forward Surge Current

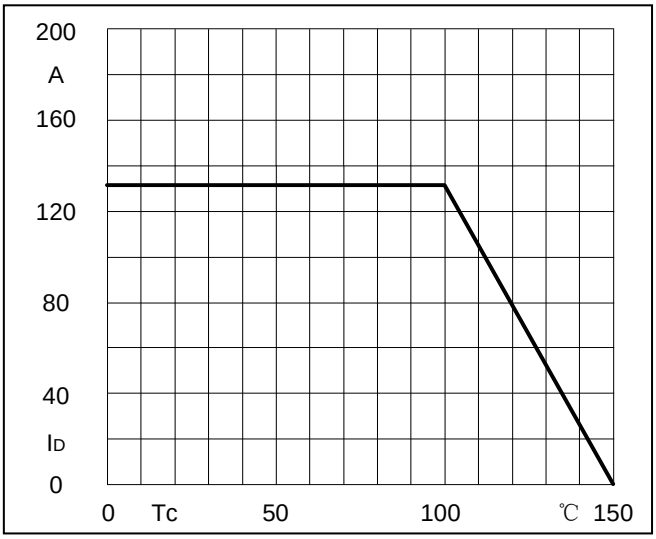
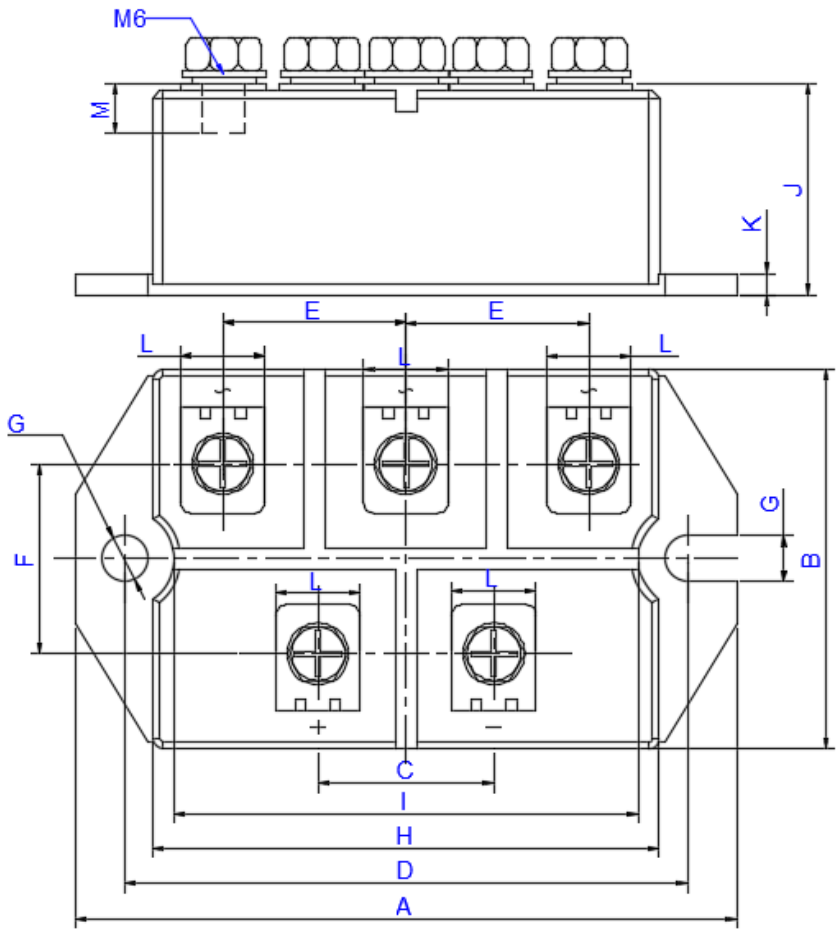



**Fig5.Forward Current Derating Curve**

## Package Outline Information

### CASE：M3




| DIM | Min (mm) | Max (mm) | Note |
|---|---|---|---|
| A | 93.5 | 94.5 | |
| B | 53.5 | 54.5 | |
| C | 24.5 | 25.5 | |
| D | 79.5 | 80.5 | |
| E | 25.5 | 26.5 | |
| F | 26.5 | 27.5 | |
| G | 6.2 | 6.8 | Ø |
| H | 71.5 | 72.5 | |
| I | 65.5 | 66.5 | |
| J | 29.5 | 30.5 | |
| K | 2.9 | 3.1 | |
| L | 11.9 | 12.1 | |
| M | 11.5 | 12.5 | |

## Packing Standard

| Item | Length: A (mm) | Width: B (mm) | Height: C (mm) | Quantity (PCS) |
|---|---|---|---|---|
| Inner Box | 276 | 258 | 48 | 6 |
| Outer Carton | 545 | 295 | 240 | 60 |

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