



Glass Passivated Three Phase Rectifier Bridge

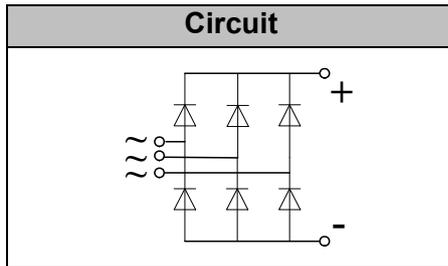
VRRM 2000V
ID 52A

Applications

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

Features

- Three phase bridge rectifier
- Blocking voltage:2000V
- Isolated heatsink using DBC technology
- Glass passivated chip



Module Type

| TYPE | VRRM | VRSM |
|-----------|-------|-------|
| MD52S20N5 | 2000V | 2100V |

Maximum Ratings

| Symbol | Conditions | Values | Units |
|-----------|---|-------------|----------------------|
| I_D | Three phase, full wave $T_c=90^\circ\text{C}$ | 52 | A |
| I_{FSM} | $t=10\text{mS}$ $T_a = 25^\circ\text{C}$ | 370 | A |
| i^2t | $t=10\text{mS}$ $T_a = 25^\circ\text{C}$ | 685 | A^2s |
| Visol | a.c.50HZ;r.m.s.;1min | 3000 | V |
| T_{vj} | | -40 to +150 | $^\circ\text{C}$ |
| T_{stg} | | -40 to +125 | $^\circ\text{C}$ |
| M_t | To terminals(M4) | $2\pm 15\%$ | Nm |
| M_s | To heatsink(M4) | $2\pm 15\%$ | Nm |
| Weight | Module (Approximately) | 30 | g |

Thermal Characteristics

| Symbol | Conditions | Values | Units |
|---------------|------------|--------|---------------------------|
| $R_{th(j-c)}$ | Per Diode | 0.95 | $^\circ\text{C}/\text{W}$ |
| $R_{th(j-c)}$ | Per Module | 0.15 | $^\circ\text{C}/\text{W}$ |

Electrical Characteristics

| Symbol | Conditions | Values | | | Units |
|--------|---|--------|------|----------|----------|
| | | Min. | Typ. | Max. | |
| VFM | $T=25^\circ\text{C}$ $I_F = 52\text{A}$ | — | 1.6 | 2.2 | V |
| IRD | $T_{vj}=25^\circ\text{C}$ $VRD=VRRM$ $T_{vj}=150^\circ\text{C}$ $VRD=VRRM$ | — | — | 0.3 5 | mA mA |



Performance Curves

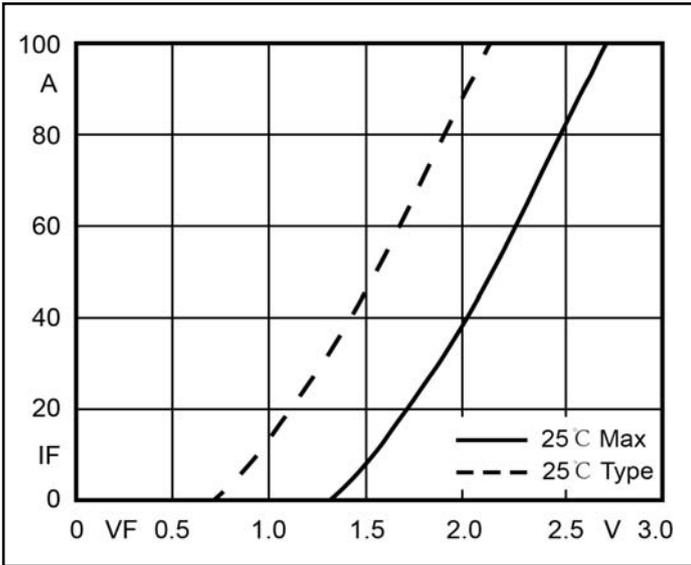


Fig1. Forward Characteristics

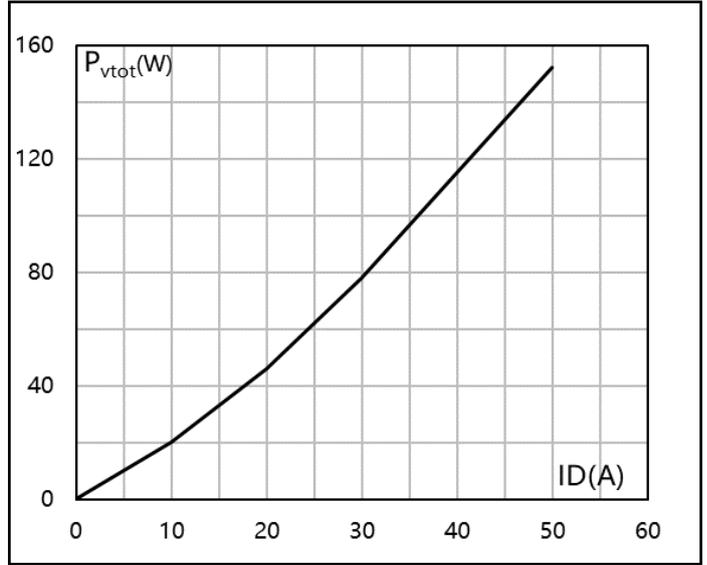


Fig2. Power dissipation

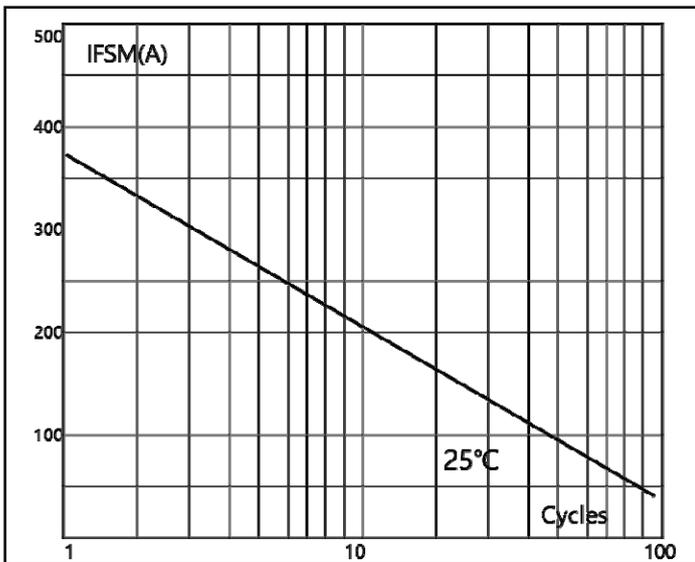


Fig3. Max Non-Repetitive Forward Surge Current

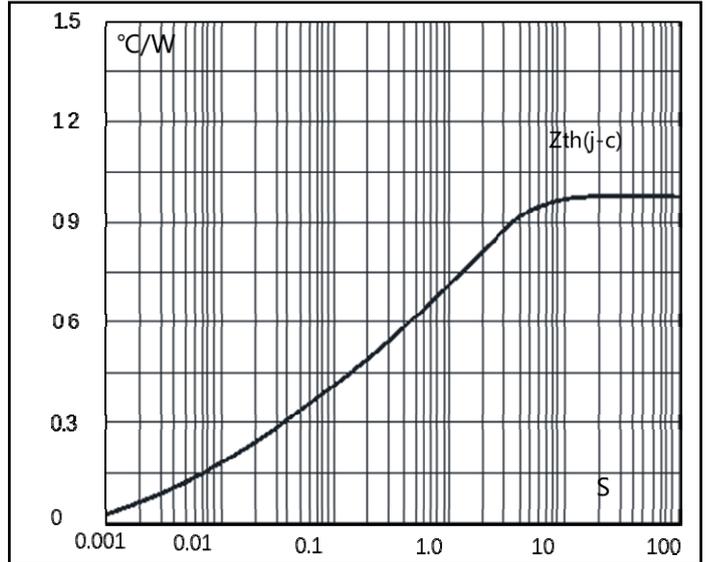


Fig4. Transient thermal impedance

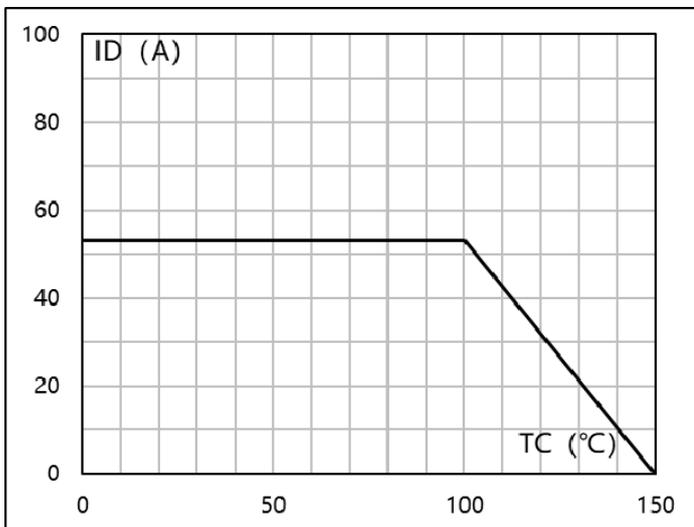
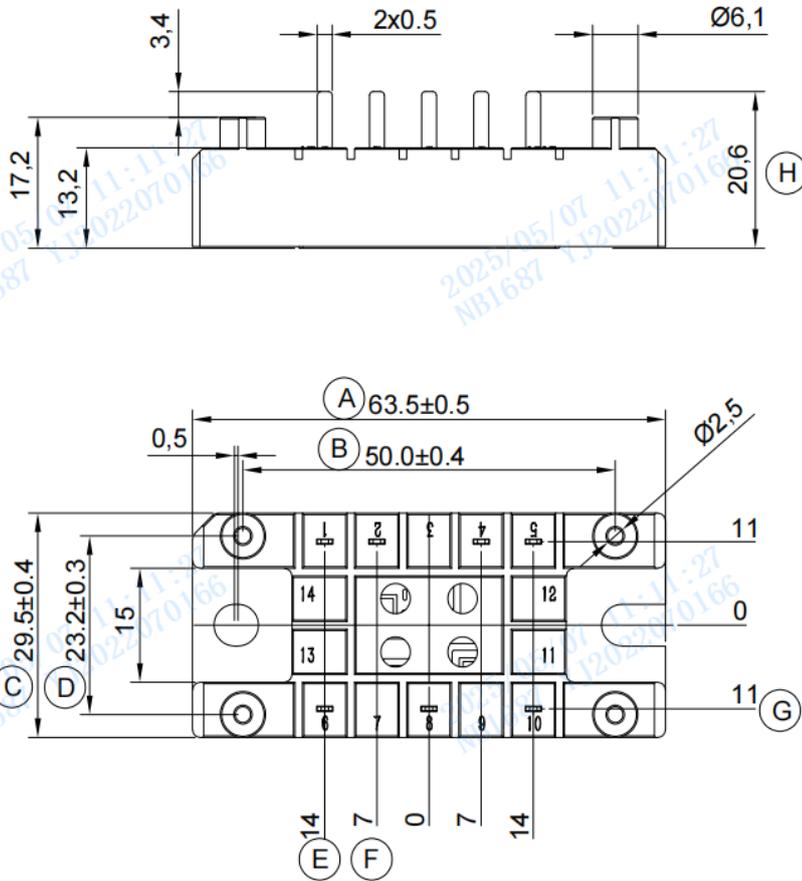


Fig5. Forward Current Derating Curve

Package Outline Information

CASE: N5



| Dim | Min | Max |
|-----|------|------|
| A | 63.0 | 64.0 |
| B | 49.6 | 50.4 |
| C | 29.1 | 29.9 |
| D | 22.9 | 23.5 |
| E | 13.8 | 14.2 |
| F | 6.8 | 7.2 |
| G | 10.8 | 11.2 |
| H | 20.2 | 21.0 |
| | | |

Dimensions in mm

Packing Standard

| Item | Length: A(mm) | Width: B (mm) | Height: C (mm) | Quantity (PCS) |
|--------------|---------------|---------------|----------------|----------------|
| Inner Box | 385 | 276 | 26 | 24 |
| Outer Carton | 395 | 280 | 260 | 192 |



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