

## DIODE(THREE PHASES BRIDGE TYPE)

# DF100AA120/160

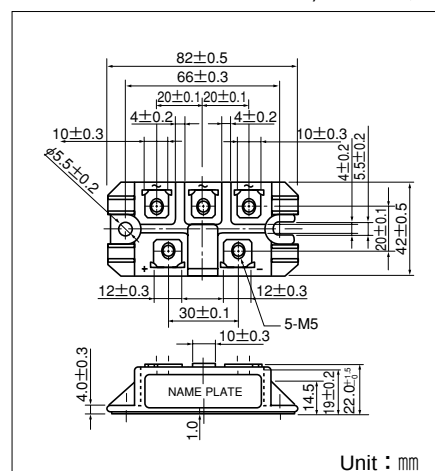
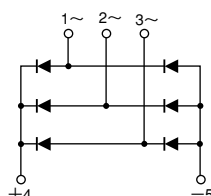
UL:E76102 (M)

Power Diode Module **DF100AA** is designed for three phase full wave rectification, which has six diodes connected in a three phase bridge configuration. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction. Output DC current is 100Amp ( $T_c=102^\circ\text{C}$ ) Repetitive peak reverse voltage is up to 1,600V.

- $T_{j\text{Max}}=150^\circ\text{C}$
- Isolated mounting base
- High reliability by unique glass passivation

### (Applications)

AC, DC Motor Drive/AVR/Switching  
-for three phase rectification



### Maximum Ratings

( $T_j=25^\circ\text{C}$  unless otherwise specified)

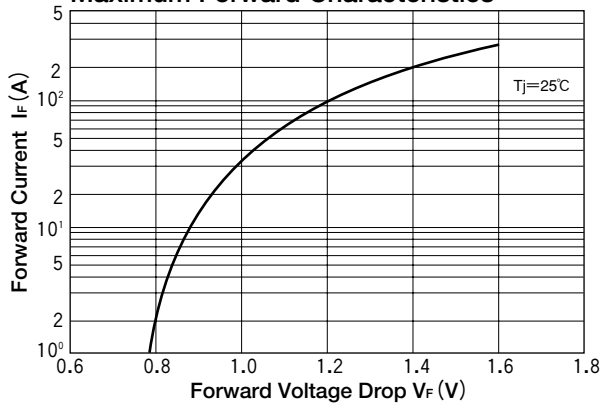
| Symbol    | Item                                | Ratings    |            | Unit |
|-----------|-------------------------------------|------------|------------|------|
|           |                                     | DF100AA120 | DF100AA160 |      |
| $V_{RRM}$ | Repetitive Peak Reverse Voltage     | 1200       | 1600       | V    |
| $V_{RSM}$ | Non-Repetitive Peak Reverse Voltage | 1300       | 1700       | V    |

| Symbol    | Item                                 | Conditions                                       | Ratings                           | Unit                         |
|-----------|--------------------------------------|--------------------------------------------------|-----------------------------------|------------------------------|
| $I_D$     | Output Current (D.C.)                | Three phase full wave. $T_c : 102^\circ\text{C}$ | 100                               | A                            |
| $I_{FSM}$ | Surge Forward Current                | 1cycle, 50/60Hz, peak value, non-repetitive      | 910/1000                          | A                            |
| $I^2t$    | $I^2t$                               | Value for one cycle of surge current             | 4100                              | $\text{A}^2\text{S}$         |
| $T_j$     | Operating Junction Temperature       |                                                  | $-40$ to $+150$                   | $^\circ\text{C}$             |
| $T_{stg}$ | Storage Temperature                  |                                                  | $-40$ to $+125$                   | $^\circ\text{C}$             |
| $V_{iso}$ | Isolation Breakdown Voltage (R.M.S.) | A.C. 1 minute                                    | 2500                              | V                            |
|           | Mounting Torque                      | Mounting (M5)                                    | Recommended Value 1.5-2.5 (15-25) | $\text{N}\cdot\text{m}$      |
|           |                                      | Terminal (M5)                                    | Recommended Value 1.5-2.5 (15-25) | $(\text{kgf}\cdot\text{cm})$ |
|           | Mass                                 | Typical Value                                    | 160                               | g                            |

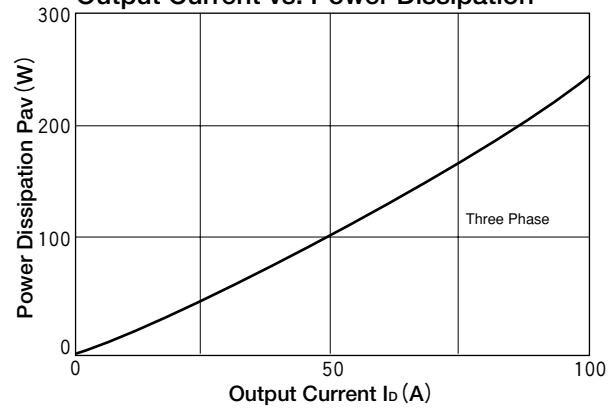
### Electrical Characteristics

| Symbol        | Item                            | Conditions                                                        | Ratings |      |      | Unit                      |
|---------------|---------------------------------|-------------------------------------------------------------------|---------|------|------|---------------------------|
|               |                                 |                                                                   | Min.    | Typ. | Max. |                           |
| $I_{RRM}$     | Repetitive Peak Reverse Current | $T_j=150^\circ\text{C}$ at $V_{RRM}$                              |         |      | 15   | mA                        |
| $V_{FM}$      | Forward Voltage Drop            | $T_j=25^\circ\text{C}$ , $I_{FM}=100\text{A}$ , Inst. measurement |         |      | 1.2  | V                         |
| $R_{th(j-c)}$ | Thermal Impedance               | Junction to case                                                  |         |      | 0.2  | $^\circ\text{C}/\text{W}$ |

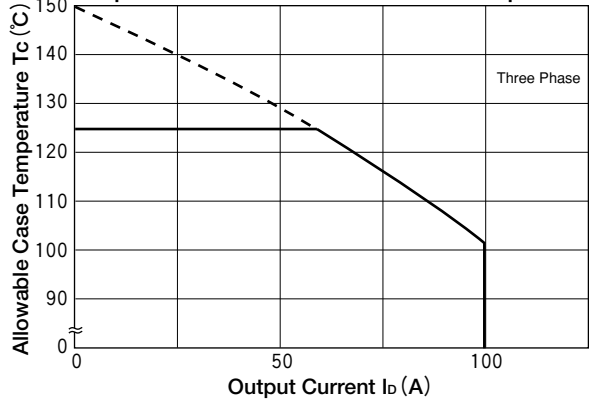
Maximum Forward Characteristics



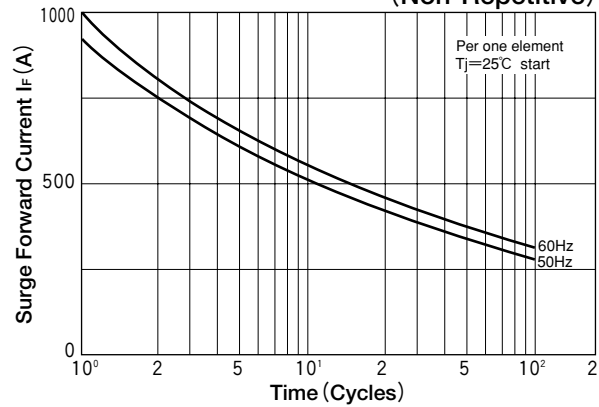
Output Current vs. Power Dissipation



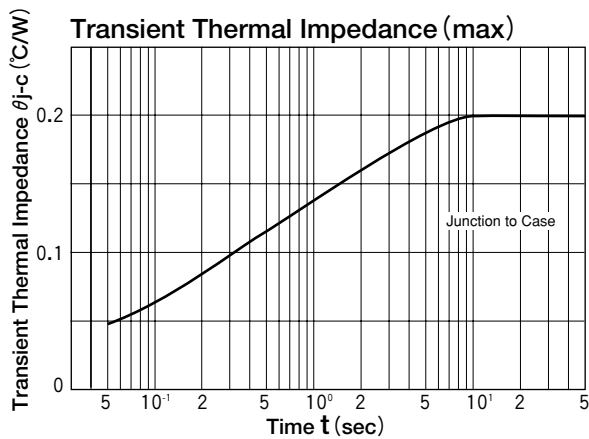
Output Current vs. Allowable case Temperature



Cycle Surge Forward Current Rating (Non-Repetitive)



Transient Thermal Impedance (max)



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