

## DIODE MODULE

# DD90F/KD90F

TOP



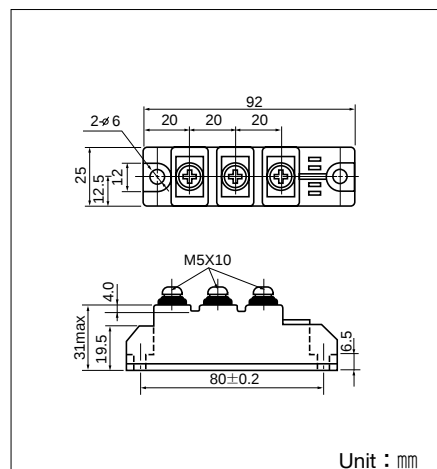
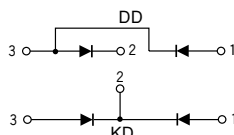
UL;E76102 (M)

Power Diode Module **DD90F** series are designed for various rectifier circuits. **DD90F** has two diode chips connected in series in 25mm (1inch) width package and the mounting base is electrically isolated from elements for simple heatsink construction. Wide voltage rating up to, 1600V is available for various input voltage.

- Isolated mounting base
- Two elements in a package for simple (single and three phase) bridge connections
- Highly reliable glass passivated chips
- High surge current capability

### (Applications)

Various rectifiers, Battery chargers, DC motor drives



Unit : mm

### Maximum Ratings

(T<sub>j</sub>=25°C unless otherwise specified)

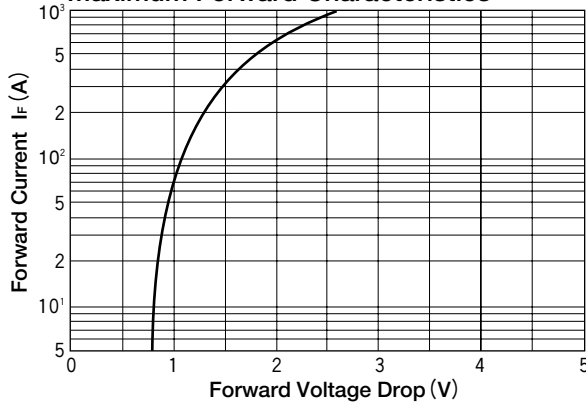
| Symbol           | Item                                | Ratings |         |          |          | Unit |
|------------------|-------------------------------------|---------|---------|----------|----------|------|
|                  |                                     | DD90F40 | DD90F80 | DD90F120 | DD90F160 |      |
| V <sub>RRM</sub> | Repetitive Peak Reverse Voltage     | 400     | 800     | 1200     | 1600     | V    |
| V <sub>RSM</sub> | Non-Repetitive Peak Reverse Voltage | 480     | 960     | 1300     | 1700     | V    |

| Symbol                      | Item                                |               | Conditions                                                      | Ratings     | Unit             |
|-----------------------------|-------------------------------------|---------------|-----------------------------------------------------------------|-------------|------------------|
| I <sub>F(AV)</sub>          | Average Forward Current             |               | Single phase, half wave, 180° conduction, T <sub>c</sub> : 93°C | 90          | A                |
| I <sub>F(RMS)</sub>         | R.M.S. Forward Current              |               | Single phase, half wave, 180° conduction, T <sub>c</sub> : 93°C | 140         | A                |
| I <sub>FSM</sub>            | Surge Forward Current               |               | 1/2 cycle, 50/60Hz, peak value, non-repetitive                  | 2100/2300   | A                |
| I <sup>2</sup> <sub>t</sub> | I <sup>2</sup> <sub>t</sub>         |               | Value for one cycle of surge current                            | 22000       | A <sup>2</sup> S |
| V <sub>ISO</sub>            | Isolation Breakdown Voltage (R.M.S) |               | A.C.1minute                                                     | 2500        | V                |
| T <sub>j</sub>              | Junction Temperature                |               |                                                                 | -40 to +125 | °C               |
| T <sub>stg</sub>            | Storage Temperature                 |               |                                                                 | -40 to +125 | °C               |
|                             | Mounting Torque                     | Mounting (M5) | Recommended Value 1.5-2.5 (15-25)                               | 2.7 (28)    | N·m<br>(kgf·cm)  |
|                             |                                     | Terminal (M5) | Recommended Value 1.5-2.5 (15-25)                               | 2.7 (28)    |                  |
|                             | Mass                                |               |                                                                 | 170         | g                |

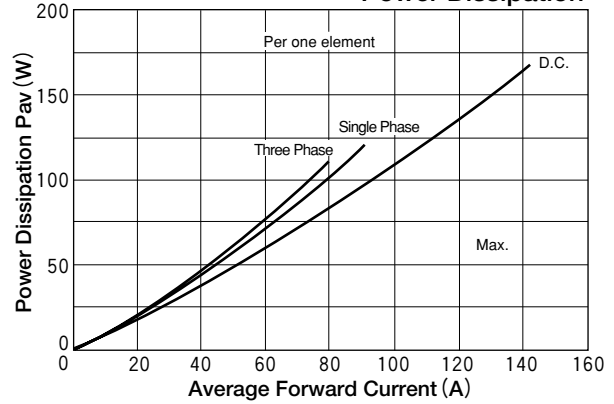
### Electrical Characteristics

| Symbol               | Item                                  | Conditions                                                           | Ratings | Unit |
|----------------------|---------------------------------------|----------------------------------------------------------------------|---------|------|
| I <sub>RRM</sub>     | Repetitive Peak Reverse Current, max. | at V <sub>DRM</sub> , single phase, half wave. T <sub>j</sub> =125°C | 20      | mA   |
| V <sub>FM</sub>      | Forward Voltage Drop, max.            | Forward current 285A, T <sub>j</sub> =25°C, Inst. measurement        | 1.40    | V    |
| R <sub>th(j-c)</sub> | Thermal Impedance, max.               | Junction to case                                                     | 0.27    | °C/W |

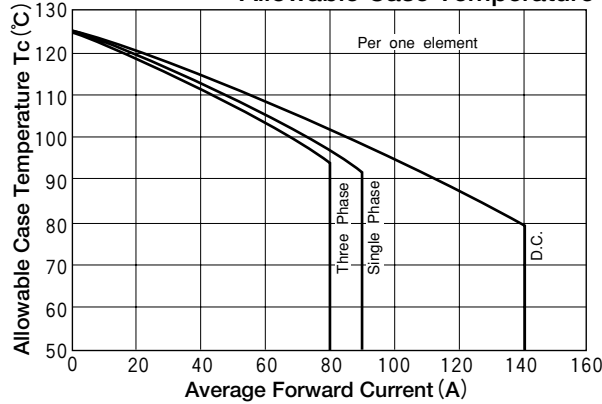
### Maximum Forward Characteristics



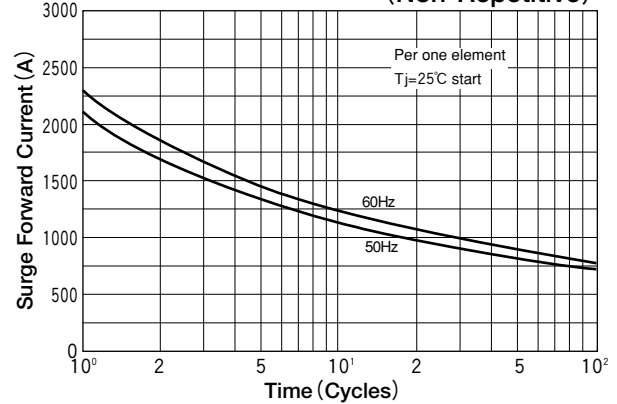
### Average Forward Current vs. Power Dissipation



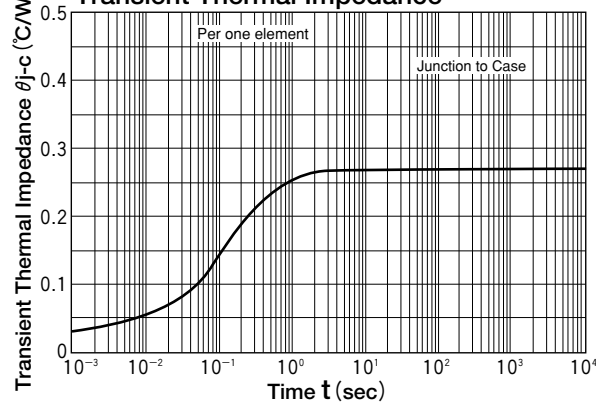
### Average Forward Current vs. Allowable Case Temperature



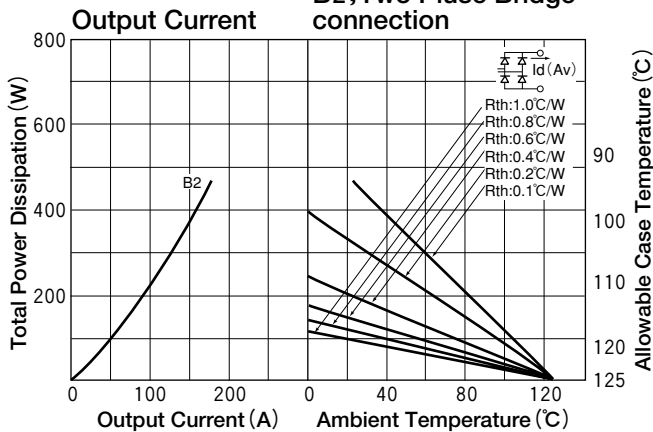
### Cycle Surge Forward Current Rating (Non-Repetitive)



### Transient Thermal Impedance



### B2; Two Pluse Bridge connection



### B6; Six pulse Bridge connection

