

# DIODE MODULE

## DD160F

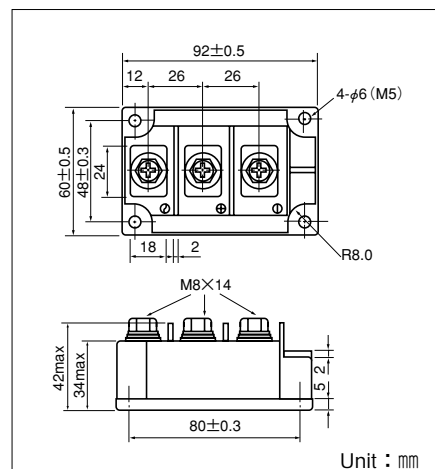
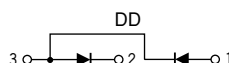
UL:E76102(M)

Power Diode Module **DD160F** series are designed for various rectifier circuits. **DD160F** has two diode chips connected in series in a package and the mounting base is electrically isolated from elements for simple heatsink construction. Wide voltage rating up to, 1,600V 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



### Maximum Ratings

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

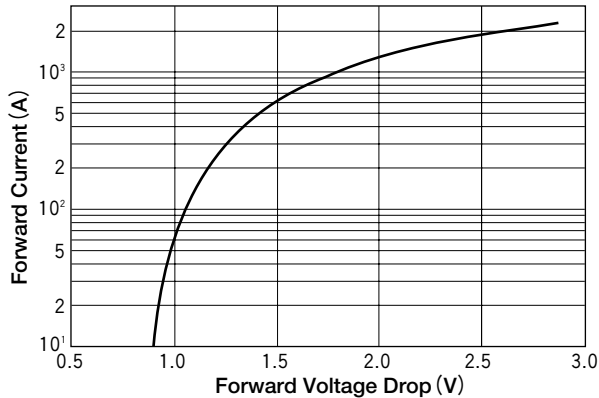
| Symbol           | Item                                | Ratings  |          |           |           | Unit |
|------------------|-------------------------------------|----------|----------|-----------|-----------|------|
|                  |                                     | DD160F40 | DD160F80 | DD160F120 | DD160F160 |      |
| 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> : 87°C | 160         | A               |
| I <sub>F (RMS)</sub> | R.M.S. Forward Current              |               | Single phase, half wave, 180° conduction, T <sub>c</sub> : 87°C | 250         | A               |
| I <sub>FSM</sub>     | Surge Forward Current               |               | ½ cycle, 50/60Hz, peak value, non-repetitive                    | 5000/5500   | A               |
| I <sup>2</sup> t     | I <sup>2</sup> t                    |               | Value for one cycle of surge current                            | 125000      | A²S             |
| 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 (M8) | Recommended Value 8.8-10 (90-105)                               | 11 (115)    |                 |
|                      | Mass                                |               |   | 510         | g               |

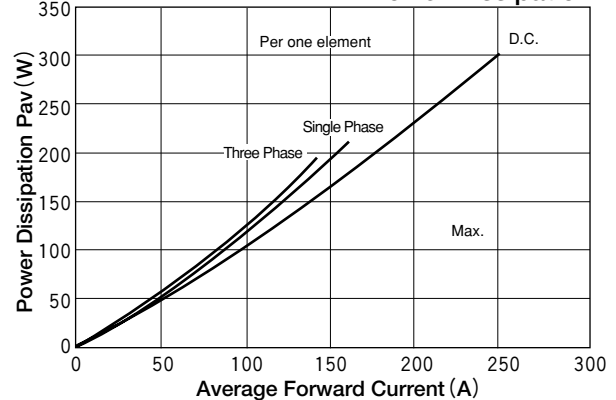
### Electrical Characteristics

| 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 | 50      | mA   |
| V <sub>FM</sub>      | Forward Voltage Drop, max.            | Forward current 500A, T <sub>j</sub> =25°C, Inst. measurement        | 1.42    | V    |
| R <sub>th(j-c)</sub> | Thermal Impedance, max.               | Junction to case   | 0.18    | °C/W |

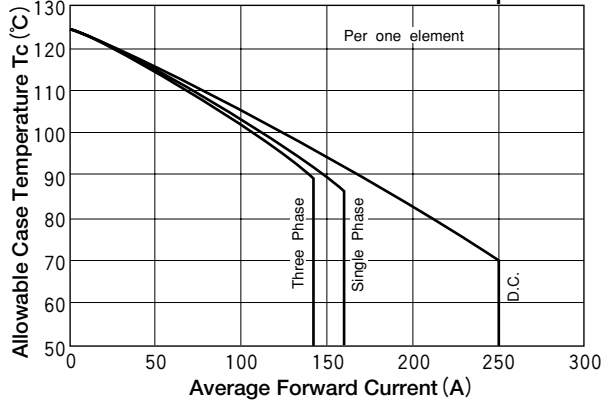
**Maximum Forward Characteristics**



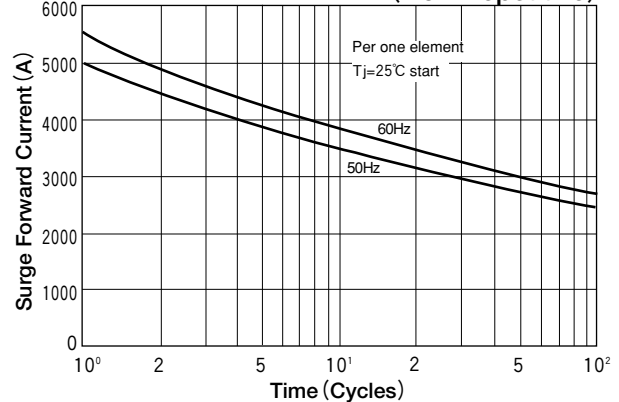
**Average Forward Current vs. Power Dissipation**



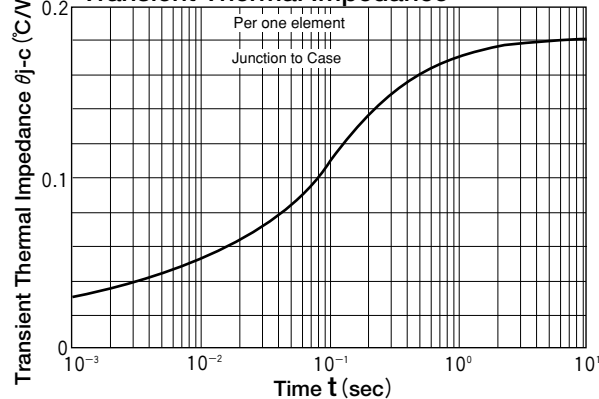
**Average Forward Current vs. Allowable Case Temperature**



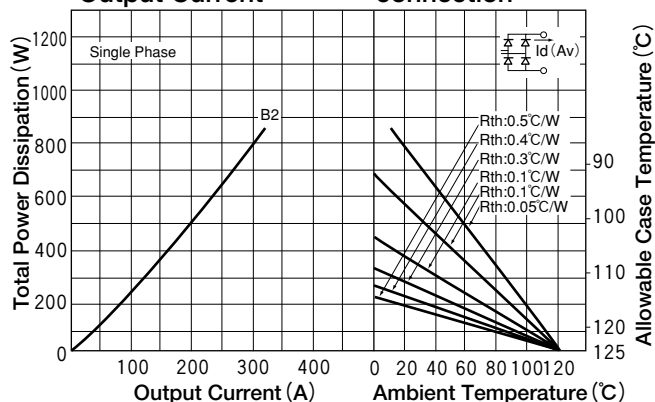
**Cycle Surge Forward Current Rating (Non-Repetitive)**



**Transient Thermal Impedance**



**Output Current**



**Output Current**

