

# DIODE MODULE

## DD300KB

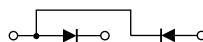
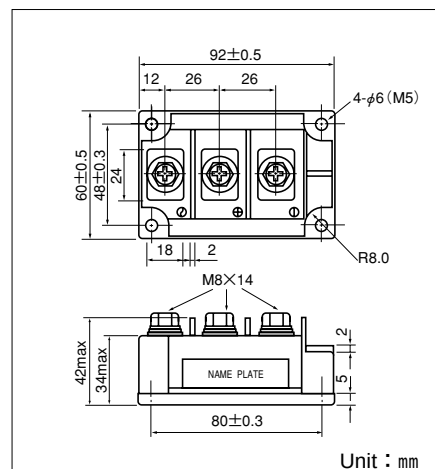
UL:E76102 (M)

Power Diode Module **DD300KB** Series are designed for various rectifier circuits. **DD300KB** has two diode chips connected in series and the mounting base is electrically isolated from elements for simple heatsink construction. Wide voltage rating up to, 1600V is available for various input voltages.

- 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 |
|------------------|-------------------------------------|-----------|-----------|------------|------------|------|
|                  |                                     | DD300KB40 | DD300KB80 | DD300KB120 | DD300KB160 |      |
| 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    |

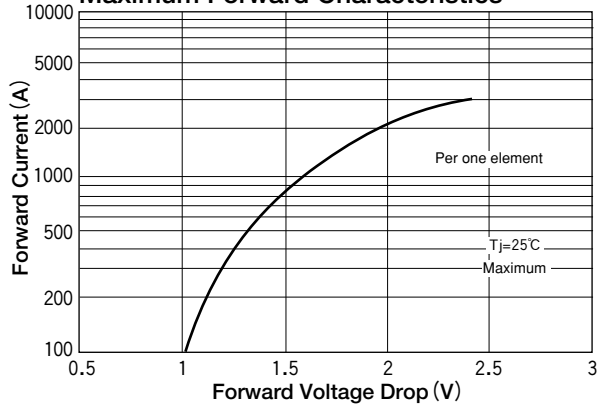
| Symbol              | Item                                 | Conditions                                                      | Ratings                             | Unit             |
|---------------------|--------------------------------------|-----------------------------------------------------------------|-------------------------------------|------------------|
| I <sub>F(AV)</sub>  | Average Forward Current              | Single phase, half wave, 180°C conduction, T <sub>c</sub> =91°C | 300                                 | A                |
| I <sub>F(RMS)</sub> | R.M.S. Forward Current               | Single phase, half wave, 180°C conduction, T <sub>c</sub> =91°C | 465                                 | A                |
| I <sub>FSM</sub>    | Surge Forward Current                | 1/2 cycle, 60Hz, peak value, non-repetitive                     | 6000                                | A                |
| I <sup>2</sup> t    | I <sup>2</sup> t                     | Value for one cycle of surge current                            | 150000                              | A <sup>2</sup> S |
| T <sub>j</sub>      | Operating Junction Temperature       |                                                                 | -40 to +150                         | °C               |
| T <sub>stg</sub>    | Storage Temperature                  |                                                                 | -40 to +125                         | °C               |
| V <sub>iso</sub>    | Isolation Breakdown Voltage (R.M.S.) | A.C. 1minute                                                    | 2500                                | V                |
|                     | Mounting Torque                      | Mounting (M5)                                                   | Recommended Value 1.5-2.5 (15-25)   | 2.7 (28)         |
|                     |                                      | Terminal (M8)                                                   | Recommended Value 8.8-10.0 (90-105) | 11 (115)         |
|                     | Mass                                 | Typical Value                                                   | 510                                 | g                |

### Electrical Characteristics

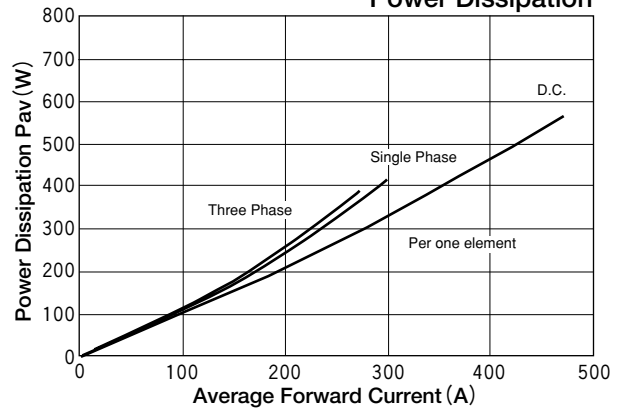
| Symbol               | Item                                  | Conditions                                              | Ratings | Unit |
|----------------------|---------------------------------------|---------------------------------------------------------|---------|------|
| I <sub>RRM</sub>     | Repetitive Peak Reverse Current, max. | T <sub>j</sub> =150°C, V <sub>R</sub> =V <sub>RRM</sub> | 50      | mA   |
| V <sub>FM</sub>      | Forward Voltage Drop, max.            | Forward current 750A, Inst measurement                  | 1.50    | V    |
| R <sub>th(j-c)</sub> | Thermal Impedance, max.               | Junction to case                                        | 0.14    | °C/W |



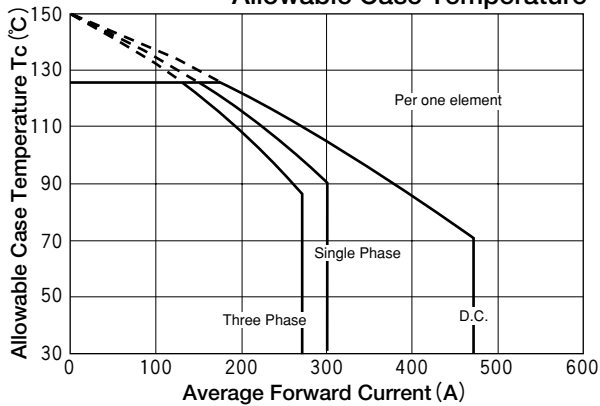
### Maximum Forward Characteristics



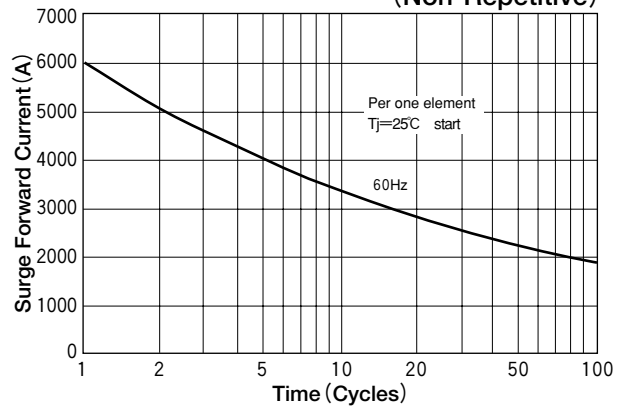
### Average Forward Current vs. Power Dissipation



### Average Forward Current vs. Allowable Case Temperature



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



### Transient Thermal Impedance

