

Three Phase Diode + Thyristor

DFA200AA80/160

UL; E76102

《Features》

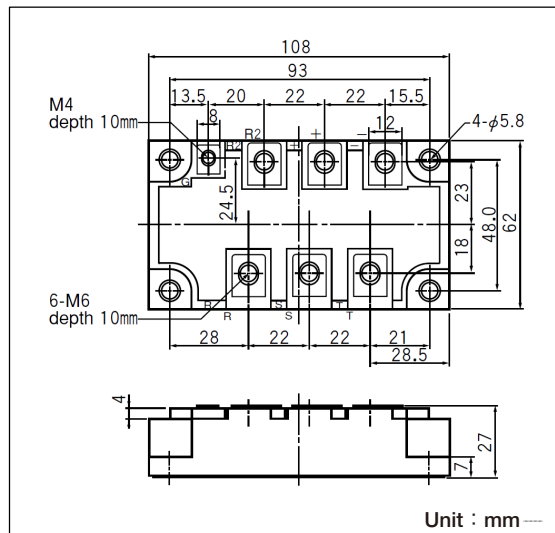
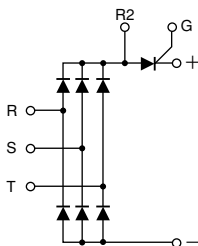
Power Module DFA200AA is complex isolated module which is designed for rash current circuit.

It contains six diodes connected in a three phase bridge configuration, and a thyristor connected to a direct current line.

- This Module is designed very compactly. Because diode module and thyristor put together.
- This Module is also isolated type between electrode terminal and mounting base. So you can put this Module and other one together in a same fin.

《Applications》

- Inverter for AC or DC motor control /
- Current stabilized power supply /
- Switching power supply



● DIODE

(T_j=25°C unless otherwise specified)

| Item | Symbol | Unit | DFA200AA80 | DFA200AA160 |
|-------------------------------------|------------------|------|------------|-------------|
| Repetitive Peak Reverse Voltage | V _{RRM} | V | 800 | 1600 |
| Non-Repetitive Peak Reverse Voltage | V _{RSM} | V | 960 | 1700 |

| Item | Symbol | Unit | Ratings | Conditions |
|-------------------------------------|----------------------|------------------|-------------|---|
| Output Current (D.C.) | I _D | A | 200 | Three phase full wave, T _C =96°C |
| Surge forward current | I _{FSM} | A | 1850/2000 | 1/2cycle, 50/60Hz, peak value, non-repetitive |
| I ² t(for fusing) | I ² t | A ² S | 17000 | Value for one cycle of surge current |
| Repetitive Peak Reverse Current,max | I _{RRM} | mA | 20 | T _j =150°C, V _R =V _{RRM} |
| Forward Voltage Drop,max | V _{FM} | V | 1.35 | I _F =200A, Inst. measurement |
| Operating Junction Temperature | T _j | °C | -30 to +150 | |
| Thermal Resistance,max | R _{th(j-c)} | °C/W | 0.1 | Junction to Case (per Module) |

● THYRISTOR

(T_j=25°C unless otherwise specified)

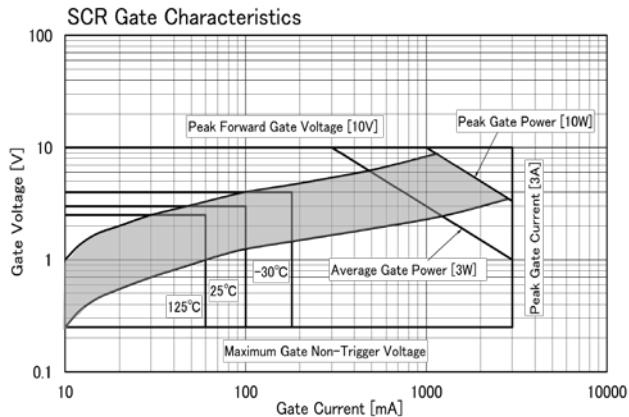
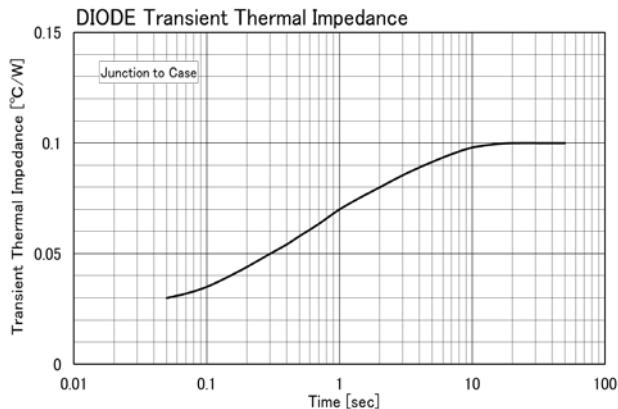
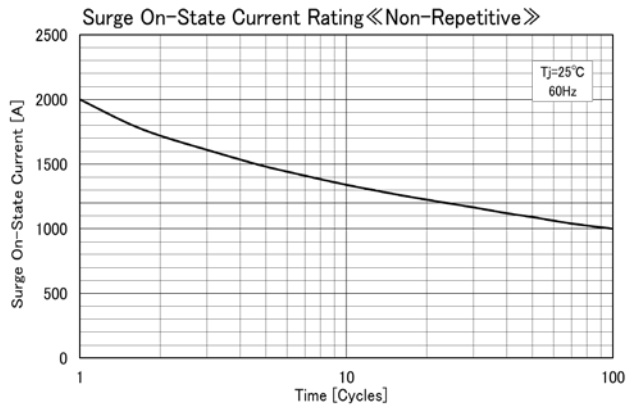
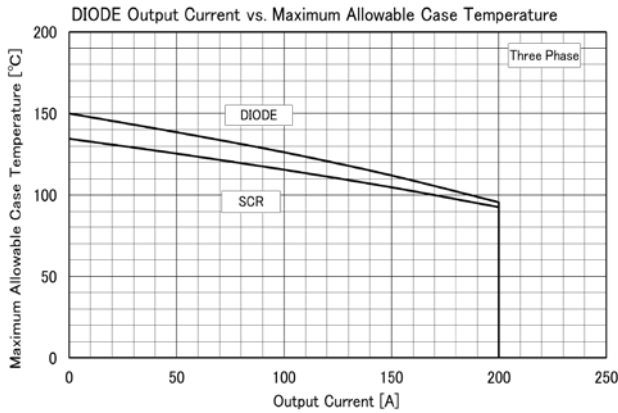
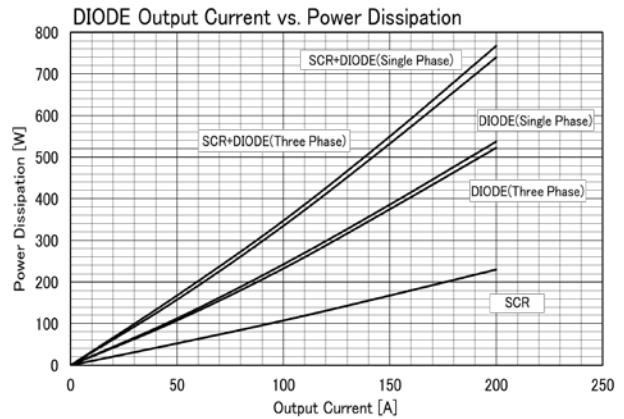
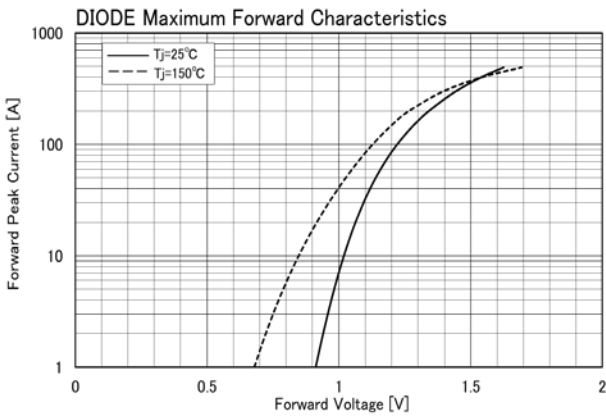
| Item | Symbol | Unit | DFA200AA80 | DFA200AA160 | Conditions |
|-------------------------------------|------------------|------|------------|-------------|------------------------|
| Repetitive Peak Reverse Voltage | V _{RRM} | V | 800 | 1600 | T _j ≤ 125°C |
| Non-Repetitive Peak Reverse Voltage | V _{RSM} | V | 960 | 1700 | T _j ≤ 125°C |
| Repetitive Peak Off-State Voltage | V _{DRM} | V | 800 | 1600 | T _j ≤ 125°C |

| Item | Symbol | Unit | Ratings | Conditions |
|---|----------------------|------------------|-------------|---|
| Average On-State Current | I _{T(AV)} | A | 200 | Single phase, half wave, 180° conduction, T _C =93°C |
| Surge On-State Current | I _{TSM} | A | 1850/2000 | 1/2cycle, 50/60Hz, Peak value, non-repetitive |
| I ² t(for fusing) | I ² t | A ² S | 17000 | Value for one cycle of surge current |
| Critical Rate of Rise of On-State Current | di/dt | A/μs | 200 | I _G =100mA V _D =1/2V _{DRM} di _G /dt=0.1A/μs |
| Operating Junction Temperature | T _j | °C | -30 to +135 | |
| Repetitive Peak Off-State Current,max. | I _{DRM} | mA | 50 | T _j =135 °C, V _D =V _{DRM} |
| Repetitive Peak Reverse Current,max. | I _{RRM} | mA | 50 | T _j =135 °C, V _R =V _{RRM} |
| Peak On-State Voltage,max. | V _{TM} | V | 1.15 | I _T = 200A Inst. measurement |
| Gate Trigger Current,max. | I _{GT} | mA/V | 100 | I _T =1A V _D =6V |
| Gate Trigger Voltage,max. | V _{GT} | mA/V | 3 | I _T =1A V _D =6V |
| Critical Rate of Rise of Off-State Voltage,min. | dv/dt | V/μs | 500 | T _j =125°C V _D =2/3V _{DRM} Exponential wave |
| Thermal Resistance,max | R _{th(j-c)} | °C/W | 0.18 | Junction to Case |

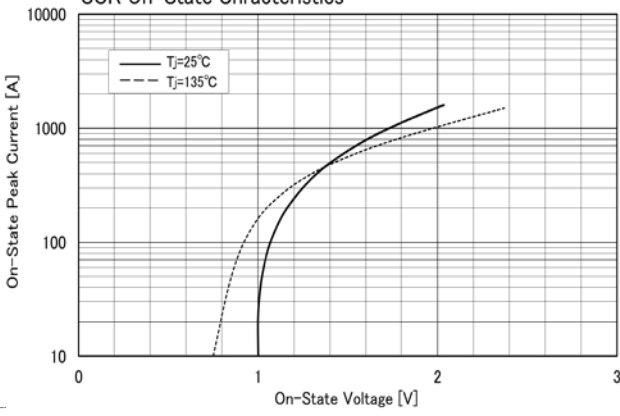
● GENERAL

(T_J=25°C unless otherwise specified)

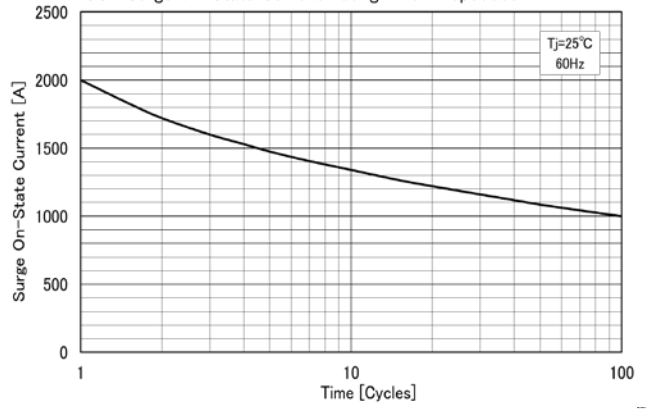
| Item | Symbol | Unit | Ratings | Conditions |
|--------------------------------------|------------------|-----------------|-------------|---|
| Isolation Breakdown Voltage (R.M.S.) | V _{ISO} | V | 2500 | A.C., 1minute |
| Storage Temperature | T _{stg} | °C | -30 to +135 | |
| Mounting Torque | Mounting (M5) | N·m (kgf·cm) | 2.7(28) | Recommended Value 1.5 to 2.5 (15 to 25) |
| | Terminal (M6) | | 4.7(48) | Recommended Value 2.5 to 3.9 (25 to 40) |
| | Terminal (M4) | | 1.5(15) | Recommended Value 1.0 to 1.4 (10 to 14) |
| Mass | | g | 460 | Typical value |



SCR On-State Characteristics



SCR Surge On-State Current Rating «Non-Repetitive»



SCR Transient Thermal Impedance

