

THYRISTOR MODULE

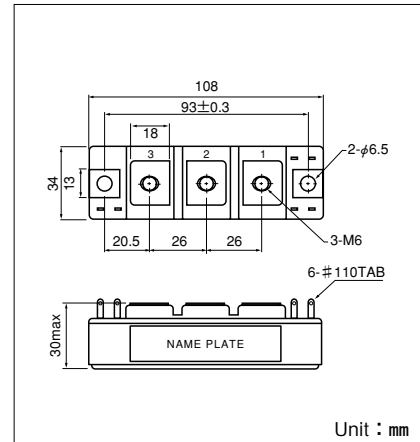
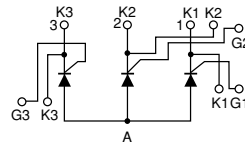
PWB200AA

PWB200AA is a Thyristor module suitable for low voltage, 3 phase rectifier applications.

- $I_{T(AV)}$ 200A (each device)
- high Surge Current 6000 A (60Hz)
- Easy Construction
- Non-isolated. Mounting base as common Anode terminal

(Applications)

Welding power Supply
Various DC power Supply



Maximum Ratings

| Symbol | Item | Ratings | | Unit |
|-----------|-------------------------------------|------------|------------|------|
| | | PWB200AA30 | PWB200AA40 | |
| V_{RRM} | Repetitive Peak Reverse Voltage | 300 | 400 | V |
| V_{RSM} | Non-Repetitive Peak Reverse Voltage | 360 | 480 | V |
| V_{DRM} | Repetitive Peak Off-State Voltage | 300 | 400 | V |

| Symbol | Item | Conditions | Ratings | Unit | |
|--------------|---|---|-----------------------------------|------------------------|-----------------|
| $I_{T(AV)}$ | Average On-State Current | Single phase, half wave, 180° conduction, $T_c : 121^\circ\text{C}$ | 200 | A | |
| $I_{T(RMS)}$ | R.M.S. On-State Current | Single phase, half wave, 180° conduction, $T_c : 121^\circ\text{C}$ | 314 | A | |
| I_{TSM} | Surge On-State Current | $\frac{1}{2}$ cycle, 50Hz/60Hz, peak value, non-repetitive | 5400/6000 | A | |
| I^2t | I^2t | | 1499400 | A^2S | |
| P_{GM} | Peak Gate Power Dissipation | | 10 | W | |
| $P_{G(AV)}$ | Average Gate Power Dissipation | | 1 | W | |
| I_{FGM} | Peak Gate Current | | 3 | A | |
| V_{FGM} | Peak Gate Voltage (Forward) | | 10 | V | |
| V_{RGM} | Peak Gate Voltage (Reverse) | | 5 | V | |
| di/dt | Critical Rate of Rise of On-State Current | $I_G=200\text{mA}, T_j=25^\circ\text{C}, V_D=\frac{1}{2}V_{DRM}, di_G/dt=1\text{A}/\mu\text{s}$ | 50 | $\text{A}/\mu\text{s}$ | |
| T_j | Operating Junction Temperature | | -40 to +150 | $^\circ\text{C}$ | |
| T_{stg} | Storage Temperature | | -40 to +125 | $^\circ\text{C}$ | |
| | Mounting torque | Mounting (M6) | Recommended Value 2.5-3.9 (25-40) | 4.7 (48) | N·m (kgf·cm) |
| | | Terminal (M6) | Recommended Value 2.5-3.9 (25-40) | 4.7 (48) | |
| | Mass | | | 280 | g |

Electrical Characteristics

| Symbol | Item | Conditions | Ratings | Unit |
|---------------|--|--|---------|---------------------------|
| I_{DRM} | Repetitive Peak Off-State Current, max. | at V_{DRM} , Single phase, half wave, $T_j=150^\circ\text{C}$ | 60 | mA |
| I_{RRM} | Repetitive Peak Reverse Current, max. | at V_{DRM} , Single phase, half wave, $T_j=150^\circ\text{C}$ | 60 | mA |
| V_{TM} | Peak On-State Voltage, max. | On-State Current 630A, $T_j=25^\circ\text{C}$ Inst. measurement | 1.20 | V |
| I_{GT} | Gate Trigger Current, max. | $T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$ | 150 | mA |
| V_{GT} | Gate Trigger Voltage, max. | $T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$ | 2 | V |
| V_{GD} | Non-Trigger Gate, Voltage, min. | $T_j=150^\circ\text{C}, V_D=\frac{1}{2}V_{DRM}$ | 0.25 | V |
| t_{gt} | Turn On Time, max. | $I_T=200\text{A}, I_G=200\text{mA}, T_j=25^\circ\text{C}, V_D=\frac{1}{2}V_{DRM}, di_G/dt=1\text{A}/\mu\text{s}$ | 10 | μs |
| dv/dt | Critical Rate of Rise of Off-State Voltage, min. | $T_j=150^\circ\text{C}, V_D=\frac{2}{3}V_{DRM}$, Exponential wave. | 200 | $\text{V}/\mu\text{s}$ |
| I_H | Holding Current, typ. | $T_j=25^\circ\text{C}$ | 70 | mA |
| $R_{th(j-c)}$ | Thermal Impedance, max. | Junction to case ($\frac{1}{3}$ Module) | 0.12 | $^\circ\text{C}/\text{W}$ |

