

THYRISTOR MODULE (NON-ISOLATED TYPE)

PWB100A

TOP

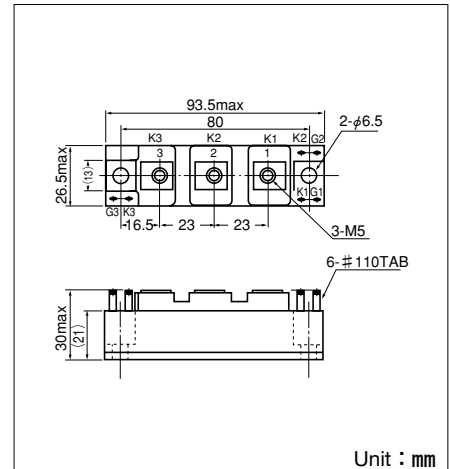
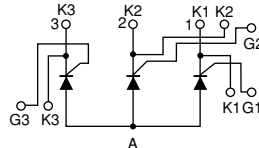


PWB100A is a Thyristor module suitable for low voltage, 3 phase recifier applications.

- $I_{T(AV)}$ 100A (each device)
- High Surge Current 3500 A (60Hz)
- Easy Construction
- Non-isolated. Mounting base as common Anode terminal

(Applications)

Welding power Supply
Various DC power Supply



Unit : mm

Maximum Ratings

| Symbol | Item | Ratings | | Unit |
|--------|-------------------------------------|-----------|-----------|------|
| | | PWB100A30 | PWB100A40 | |
| VRRM | Repetitive Peak Reverse Voltage | 300 | 400 | V |
| VRSM | Non-Repetitive Peak Reverse Voltage | 360 | 480 | V |
| VDRM | 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, $T_c : 114^\circ\text{C}$ | 100 | A | |
| $I_{T(RMS)}$ | R.M.S. On-State Current | Single phase, half wave, 180° conduction, $T_c : 114^\circ\text{C}$ | 157 | A | |
| I_{TSM} | Surge On-State Current | 1/2cycle, 50Hz/60Hz, peak value, non-repetitive | 3200/3500 | A | |
| I^2t | I^2t | | 51000 | A ² S | |
| 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 | $I_g=200\text{mA}$, $T_j=25^\circ\text{C}$, $V_D=1/2V_{DRM}$, $dI_G/dt=1\text{A}/\mu\text{s}$ | 50 | A/ μs | |
| T_j | Operating Junction Temperature | | -30 to +150 | °C | |
| T_{stg} | Storage Temperature | | -30 to +125 | °C | |
| | Mounting Torque | Mounting (M6) | Recommended Value 2.5-3.9 (25-40) | 4.7 (48) | N·m (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_{DRM} | Repetitive Peak Off-State Current, max. | at V_{DRM} , single phase, half wave, $T_j=150^\circ\text{C}$ | 15 | mA |
| I_{RRM} | Repetitive Peak Reverse Current, max. | at V_{DRM} , single phase, half wave, $T_j=150^\circ\text{C}$ | 15 | mA |
| V_{TM} | Peak On-State Voltage, max. | On-State Current 310A, $T_j=25^\circ\text{C}$ Inst. measurement | 1.20 | V |
| I_{GT}/V_{GT} | Gate Trigger Current/Voltage, max. | $T_j=25^\circ\text{C}$, $I_T=1\text{A}$, $V_D=6\text{V}$ | 150/2 | mA/V |
| V_{GD} | Non-Trigger Gate, Voltage. min. | $T_j=150^\circ\text{C}$, $V_D=1/2V_{DRM}$ | 0.25 | V |
| t_{gt} | Turn On Time, max. | $I_T=100\text{A}$, $I_g=200\text{mA}$, $T_j=25^\circ\text{C}$, $V_D=1/2V_{DRM}$, $dI_G/dt=1\text{A}/\mu\text{s}$ | 10 | μs |
| dv/dt | Critical Rate of Rise of Off-State Voltage, min. | $T_j=150^\circ\text{C}$, $V_D=2/3V_{DRM}$, Exponential wave. | 50 | V/ μs |
| I_H | Holding Current, typ. | $T_j=25^\circ\text{C}$ | 70 | mA |
| $R_{th(j-c)}$ | Thermal Impedance, max. | Junction to case (1/3 Module) | 0.3 | °C/W |

