

# Thyristor Module (Non-Isolated Type)

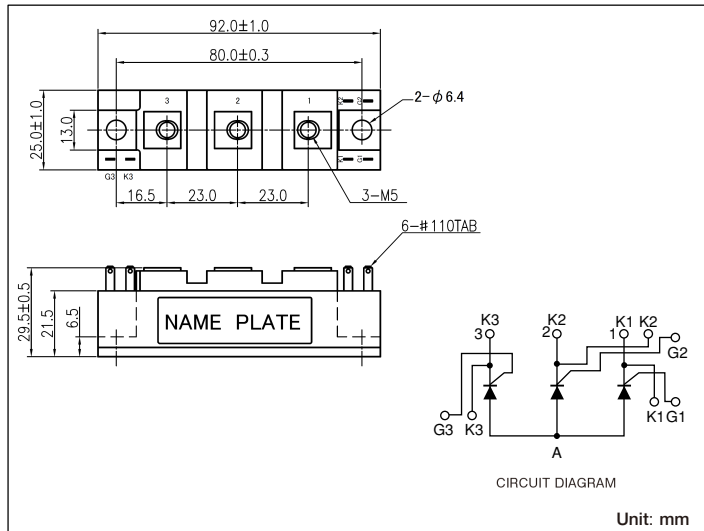
## PWB130A30/40

### 《Features》

- $I_{T(AV)}$ 130A (each device)
- High Surge Current 3500 A (50/60Hz)
- Easy Construction
- Non-isolated. Mounting base as common Anode terminal

### 《Applications》

- Power Supply / Welding equipment



### ■ Maximum Ratings ( $T_j=25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Unit	PWB130A30	PWB130A40
Repetitive Peak Reverse Voltage	$V_{RRM}$	V	300	400
Non-Repetitive Peak Reverse Voltage	$V_{RSM}$	V	360	480
Repetitive Peak off-State Voltage	$V_{DRM}$	V	300	400

Item	Symbol	Unit	Ratings	Conditions
Average On-State Current	$I_{T(AV)}$	A	130	Single phase, half wave, $180^\circ$ conduction angle, $T_c:120^\circ\text{C}$
R.M.S. On-State Current	$I_{T(RMS)}$	A	204	Single phase, half wave, $180^\circ$ conduction angle, $T_c:120^\circ\text{C}$
Surge On-State Current	$I_{TSM}$	A	3200/3500	1/2cycle, 50/60Hz, peak value, non-repetitive
$I^2t$ (for fusing)	$I^2t$	$\text{A}^2\text{s}$	51000	
Peak Gate Power Dissipation	$P_{GM}$	W	10	
Average Gate Power Dissipation	$P_{G(AV)}$	W	1	
Peak Gate Current	$I_{FGM}$	A	3	
Peak Gate Voltage (Forward)	$V_{FGM}$	V	10	
Peak Gate Voltage (Reverse)	$V_{RGM}$	V	5	
Critical Rate of Rise of On-State Current	$di/dt$	$\text{A}/\mu\text{s}$	50	$I_G=200\text{mA}$ $V_D=1/2V_{DRM}$ $dI_G/dt=1\text{A}/\mu\text{s}$
Operating Junction Temperature	$T_j$	$^\circ\text{C}$	-40 to +150	
Storage Temperature	$T_{stg}$	$^\circ\text{C}$	-40 to +125	
Mounting Torque	Mounting M6	N·m ( $\text{kgf}\cdot\text{cm}$ )	4.7 (48)	Recommended Value 2.5 to 3.9 (25 to 40)
	Terminal M5		2.7 (28)	Recommended Value 1.5 to 2.5 (15 to 25)
Mass		g	170	

### ■ Electrical Characteristics ( $T_j=25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Unit	Ratings	Conditions
Repetitive Peak Off-State Current, max	$I_{DRM}$	mA	30	at $V_{DRM}$ , Single phase, half wave
Repetitive Peak Reverse Current, max	$I_{RRM}$	mA	30	at $V_{RRM}$ , Single phase, half wave
Peak On-State Voltage, max	$V_{TM}$	V	1.20	On-State Current 410A $T_j=150^\circ\text{C}$ Inst. measurement
Gate Trigger Current, max	$I_{GT}$	mA	150	$I_T=1\text{A}$ $V_D=6\text{V}$
Gate Trigger Voltage, max	$V_{GT}$	V	2	$I_T=1\text{A}$ $V_D=6\text{V}$
Non-Trigger Gate Voltage, min	$V_{GD}$	V	0.25	$T_j=150^\circ\text{C}$ $V_D=1/2V_{DRM}$
Turn On Time, max.	$t_{gt}$	$\mu\text{s}$	10	$I_T=100\text{A}$ $I_G=200\text{mA}$ $V_D=1/2V_{DRM}$ $dI_G/dt=1\text{A}/\mu\text{s}$
Critical Rate of Rise of Off-State Voltage, min	$dv/dt$	$\text{V}/\mu\text{s}$	50	$T_j=150^\circ\text{C}$ $V_D=2/3V_{DRM}$ Exponential wave.
Holding Current, typ.	$I_H$	mA	70	
Thermal Resistance, max	$R_{th}$	$^\circ\text{C}/\text{W}$	0.2	Junction to case

