

Thyristor Module (Non-Isolated Type)

PWB100A30/40

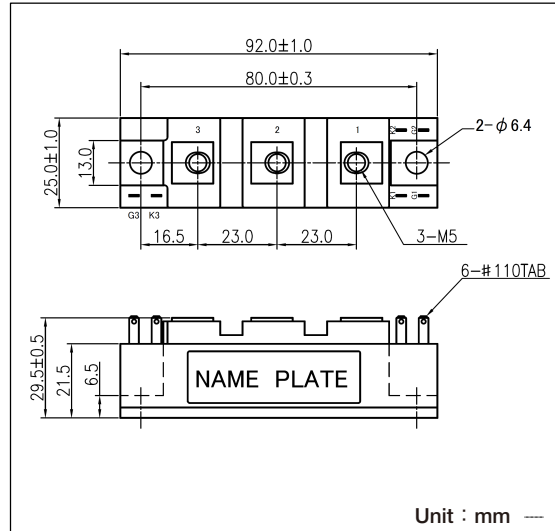
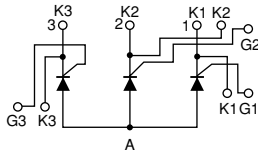
《Features》

PWB100A is a thyristor module suitable for low voltage, 3 phase rectifier 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 ($T_j=25^\circ\text{C}$ unless otherwise specified)

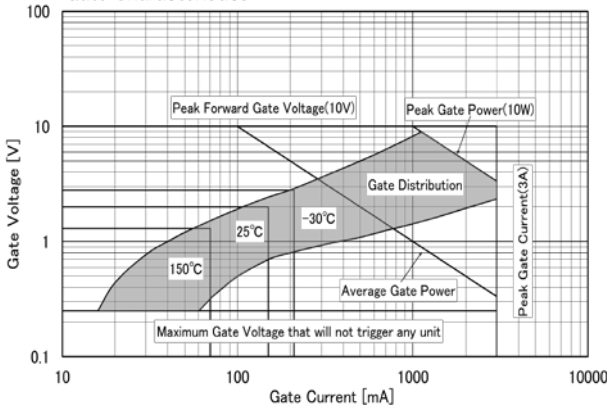
Item	Symbol	Unit	PWB100A30	PWB100A40
Repetitive Peak Reverse Voltage	V_{RRM}	V	300	400
Non-Repetitive Peak Reverse Voltage	V_{RSM}	V	360	480
Repetitive Peak off-State Voltage	V_{DRM}	V	300	400

Item	Symbol	Unit	Ratings	Conditions
Average On-State Current	$I_{T(AV)}$	A	100	Single phase, half wave, 180° conduction, $T_c:114^\circ\text{C}$
R.M.S. On-State Current	$I_{T(RMS)}$	A	157	Single phase, half wave, 180° conduction, $T_c:114^\circ\text{C}$
Surge On-State Current	I_{TSM}	A	3200/3500	1/2cycle, 50/60Hz, peak value, non-repetitive
I^2t (for fusing)	I^2t	A^2s	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	$^\circ\text{C}$	-30 to +150	
Storage Temperature	T_{stg}	$^\circ\text{C}$	-30 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	

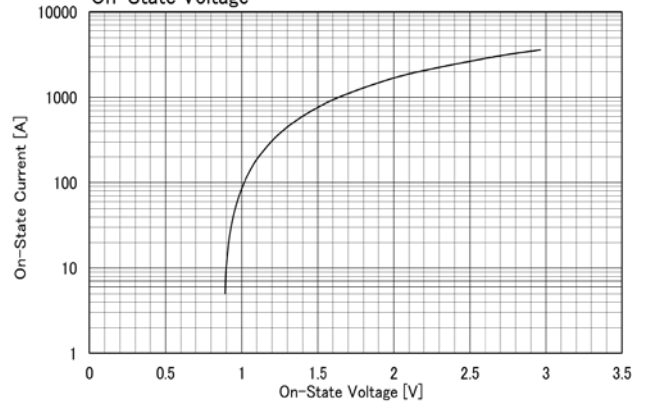
■ Electrical Characteristics ($T_j=25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Unit	Ratings	Conditions
Repetitive Peak Off-State Current, max	I_{DRM}	mA	15	at V_{DRM} , Single phase, half wave
Repetitive Peak Reverse Current, max	I_{RRM}	mA	15	at V_{RRM} , Single phase, half wave
Peak On-State Voltage, max	V_{TM}	V	1.20	On-State Current 310A 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}	μs	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}	$^\circ\text{C}/\text{W}$	0.3	Junction to case

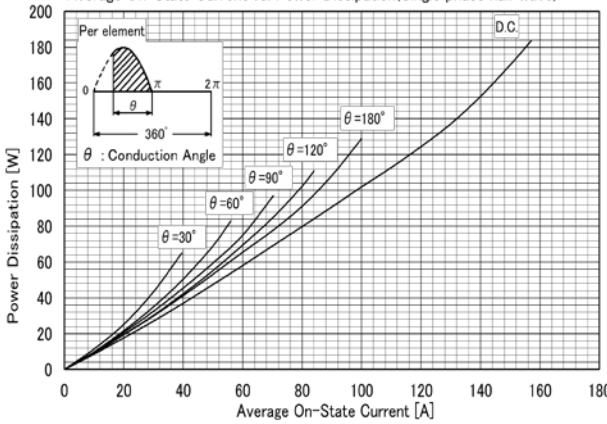
Gate Characteristics



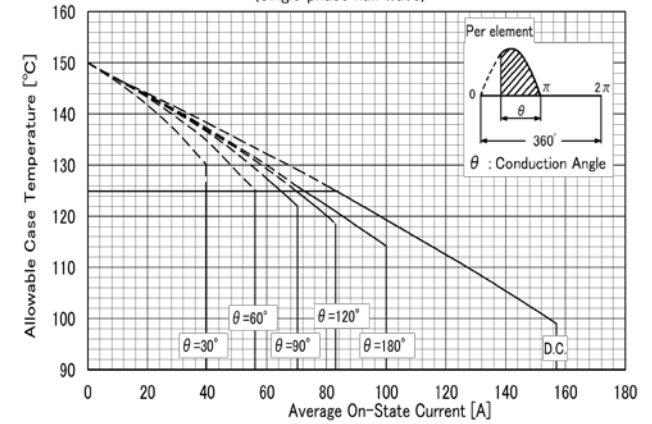
On-State Voltage



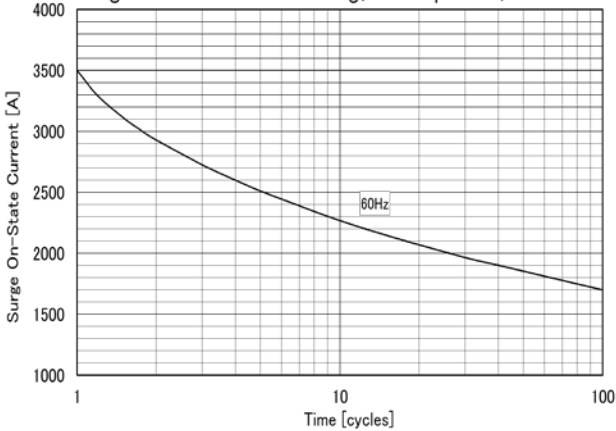
Average On-State Current vs. Power Dissipation (Single phase half wave)



Average On-State Current Vs Maximum Allowable Case Temperature (Single phase half wave)



Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance

