

THYRISTOR MODULE

PWB200AA

TOP

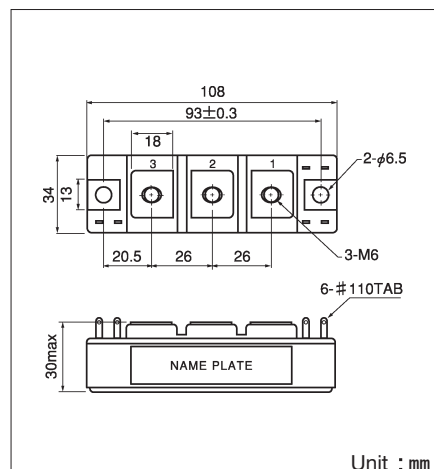
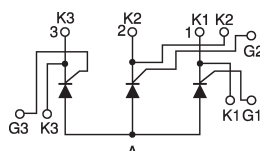


PWB200AA is a Thyristor module suitable for low voltage, 3 phase rectifier applications.

- 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

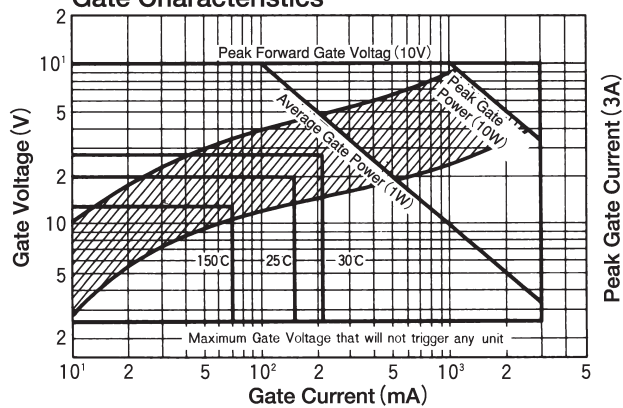
Symbol	Item	Ratings		Unit
		PWB200AA30	PWB200AA40	
V_{RRM}	Repetitive Peak Reverse Voltage	300	400	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	360	480	V
V_{DRM}	Repetitive Peak Off-State Voltage	300	400	V

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 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		$I_G=200\text{mA}$, $T_j=25^\circ\text{C}$, $V_D=\frac{1}{2}V_{DRM}$, $dI_G/dt=1\text{A}/\mu\text{s}$	50	A/ μs
T_j	Operating Junction Temperature			-40~+150	°C
T_{stg}	Storage Temperature			-40~+125	°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

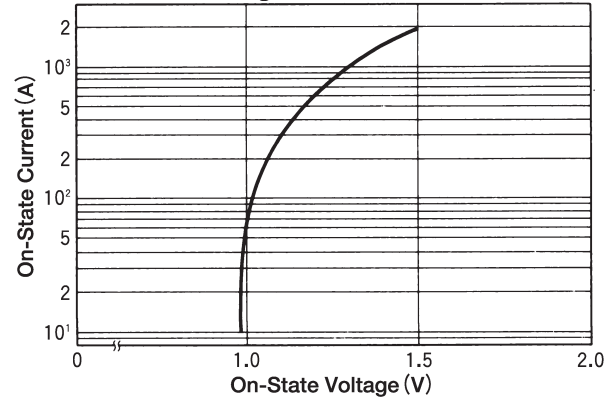
Electrical Characteristics

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	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 ($\frac{1}{3}$ Module)	0.12	°C/W

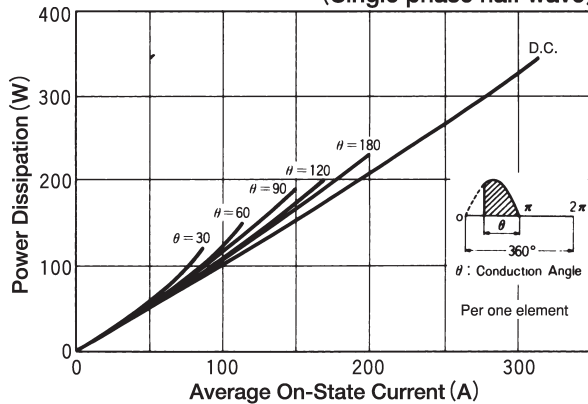
Gate Characteristics



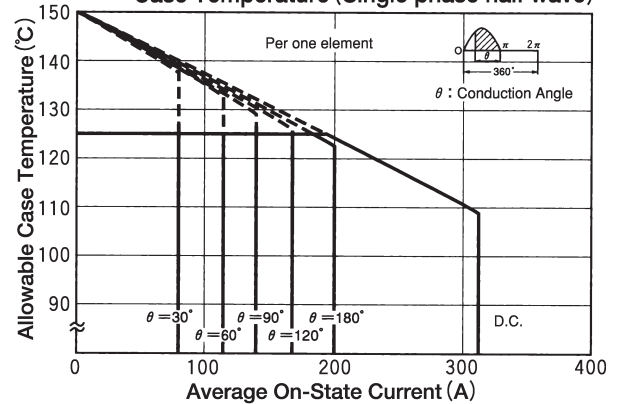
On-State Voltage max



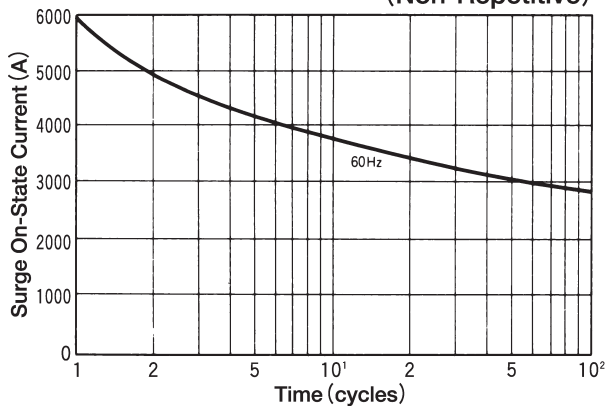
Average On-State Current Vs Power Dissipation (Single phase half wave)



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



Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance

