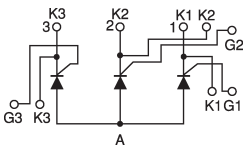
THYRISTOR MODULE（NON-ISOLATED TYPE）

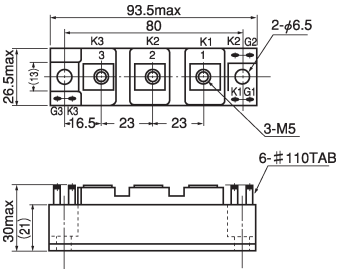
PWB130A

PWB130A is a Thyristor module suitable for low voltage, 3 phase recifier applications.

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

（**Applications**）
Welding power Supply
Various DC power Supply





Unit：mm

■Maximum Ratings

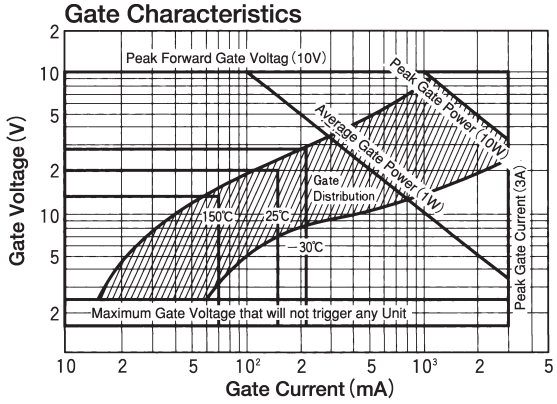
Symbol	Item	Ratings			Unit
		PWB130A20	PWB130A30	PWB130A40	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	240	360	480	V
V_{DRM}	Repetitive Peak Off-State Voltage	200	300	400	V

Symbol	Item		Conditions	Ratings	Unit
$I_{T(AV)}$	Average On-State Current		Single phase, half wave, 180˚conduction, Tc：112℃	130	A
$I_{T(RMS)}$	R.M.S. On-State Current		Single phase, half wave, 180˚conduction, Tc：112℃	204	A
I_{TSM}	Surge On-State Current		½cycle, 50Hz/60Hz, peak value, non-repetitive	3200/3500	A
I^2t	I^2t			51000	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 On-State Current		I_G=200mA, Tj=25℃, V_D=½V_{DRM}, dI_G/dt=1A/μs	50	A/μs
Tj	Operating Junction Temperature			−30～+150	℃
Tstg	Storage Temperature			−30～+125	℃
	Mounting torque	Mounting（M6）	Recommended 2.5～3.9（25～40）	4.7（48）	N・m (kgf・cm)
		Terminal（M5）	Recommended 1.5～2.5（15～25）	2.7（28）	
	Mass			170	g

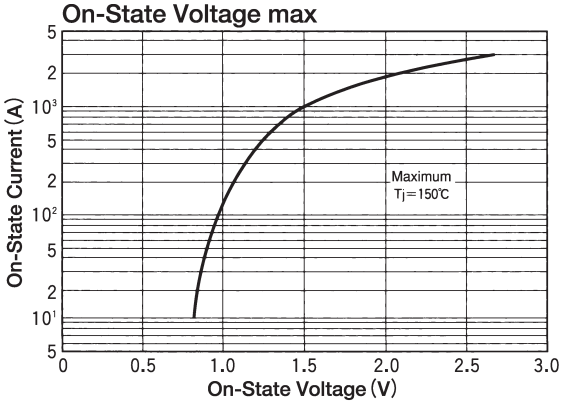
■Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Mix.	Typ.	Min.	
I_{DRM}	Repetitive Peak Off-State Current, max.	at V_{DRM}, single phase, half wave, Tj=150℃			30	mA
I_{RRM}	Repetitive Peak Reverse Current, max.	at V_{DRM}, single phase, half wave, Tj=150℃			30	mA
V_{TM}	Peak On-State Voltage, max.	On-State Current 410A, Tj=150℃ Inst. measurement			1.2	V
I_{GT}	Gate Trigger Current, max.	Tj=25℃, I_T=1A, V_D=6V			150	mA/V
V_{GT}	Gate Trigger Voltage, max.	Tj=25℃, I_T=1A, V_D=6V			2	mA/V
V_{GD}	Non-Trigger Gate, Voltage. min.	Tj=150℃, V_D=½V_{DRM}	0.25			V
tgt	Turn On Time, max.	I_T=100A, I_G=200mA, Tj=25℃, V_D=½V_{DRM}, dI_G/dt=1A/μs			10	μs
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	Tj=150℃, V_D=⅔V_{DRM}, Exponential wave.	50			V/μs
I_H	Holding Current, typ.	Tj=25℃			70	mA
Rth(j-c)	Thermal Impedance, max.	Junction to case（⅓Module）			0.2	℃/W

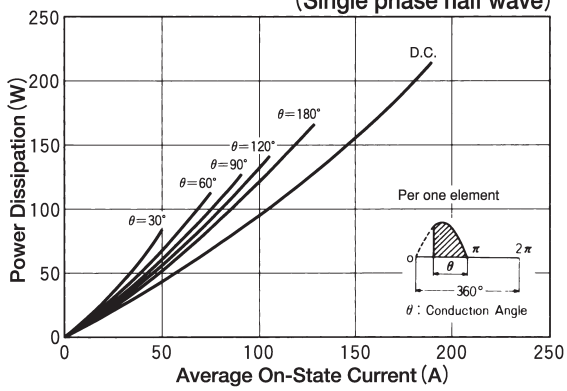
Gate Characteristics



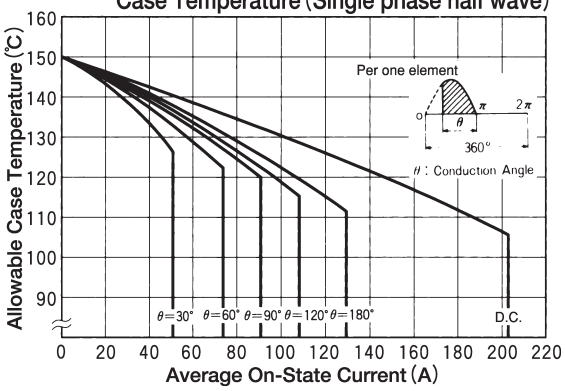
On-State Voltage max



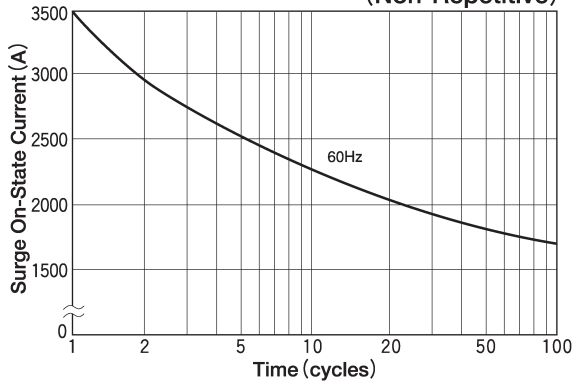
Average On-State Current Vs Power Dissipation (Single phase half wave)



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



Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance