

# THYRISTOR MODULE (NON-ISOLATED TYPE)

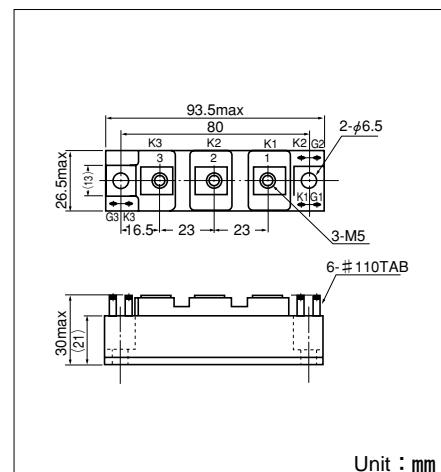
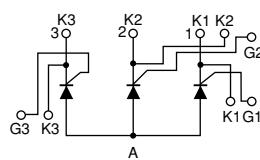
## PWB60A

PWB60A is a Thyristor module suitable for low voltage, 3 phase rectifier applications.

- $I_{T(AV)}$  60A (each device)
- High Surge Current 1800 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
		PWB60A30	PWB60A40	
$V_{RRM}$	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, $T_c : 123^\circ C$	60	A
$I_{T(RMS)}$	R.M.S. On-State Current	Single phase, half wave, 180° conduction, $T_c : 123^\circ C$	94	A
$I_{TSM}$	Surge On-State Current	½cycle, 50Hz/60Hz, peak value, non-repetitive	1640/1800	A
$I^2t$	$I^2t$		13,500	$A^2S$
$P_{GM}$	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 (R.M.S.)		5	V
$di/dt$	Critical Rate of Rise of On-State Current	$I_G = 150mA, T_j = 25^\circ C, V_D = \frac{1}{2}V_{DRM}, di/dt = 1A/\mu s$	50	$A/\mu s$
$T_j$	Operating Junction Temperature		-30 to +150	°C
$T_{stg}$	Storage Temperature		-30 to +125	°C
$I_{H}$	Mounting (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)	$N \cdot m$ (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, $T_j = 150^\circ C$	10	mA
$I_{RRM}$	Repetitive Peak Reverse Current, max.	at $V_{DRM}$ , single phase, half wave, $T_j = 150^\circ C$	10	mA
$V_{TM}$	Peak On-State Voltage, max.	On-State Current 180A, $T_j = 25^\circ C$ Inst. measurement	1.25	V
$I_{GT}/V_{GT}$	Gate Trigger Current/Voltage, max.	$T_j = 25^\circ C, I_t = 1A, V_D = 6V$	150/2	$mA/V$
$V_{GD}$	Non-Trigger Gate, Voltage. min.	$T_j = 150^\circ C, V_D = \frac{1}{2}V_{DRM}$	0.25	V
$t_{gt}$	Turn On Time, max.	$I_t = 60A, I_g = 150mA, T_j = 25^\circ C, V_D = \frac{1}{2}V_{DRM}, di/dt = 1A/\mu s$	10	$\mu s$
$dv/dt$	Critical Rate of Rise of Off-State Voltage, min.	$T_j = 150^\circ C, V_D = \frac{2}{3}V_{DRM}$ , Exponential wave.	50	$V/\mu s$
$I_H$	Holding Current, typ.	$T_j = 25^\circ C$	100	mA
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to case ( $\frac{1}{3}$ Module)	0.35	$^\circ C/W$

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