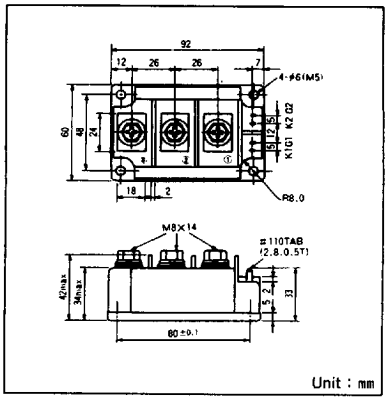
THYRISTOR MODULE
PK(PD)200GB

Power Thyristor/Diode Module **PK200GB** series are designed for various rectifier circuits and power controls. For your circuit application, following internal connections and wide voltage ratings up to 800 V are available.

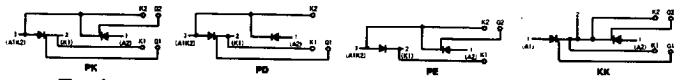
Isolated mounting base
- $I_{T(AV)}$200A, $I_{T(RMS)}$310A, I_{TSM} 5500A
- di/dt 200 A/μs
- dv/dt 500 V/μs

(Applications)
Various rectifiers
AC/DC motor drives
Heater controls
Light dimmers
Static switches



Unit : mm

Internal Configurations



■Maximum Ratings

Symbol	Item	PK200GB-120 PD200GB-120 PE200GB-120 KK200GB-120	PK200GB-160 PD200GB-160 PE200GB-160 KK200GB-160	Unit
V_{RRM}	* Repetitive Peak Reverse Voltage	400	800	V
V_{RSM}	* Non-Repetitive Peak Reverse Voltage	480	960	V
V_{DRM}	Repetitive Peak Off-State Voltage	400	800	V

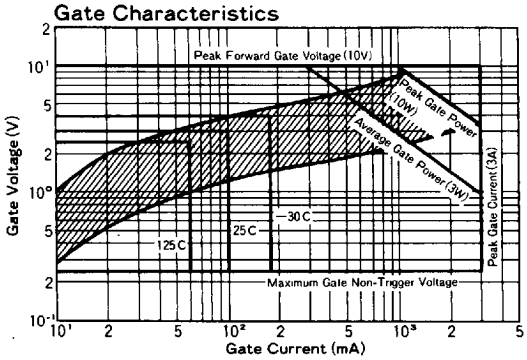
Symbol	Item		Conditions	Ratings	Unit
$I_{T(AV)}$	* Average On-State Current		Single phase, half wave, 180° conduction, Tc:72°C	200	A
$I_{T(RMS)}$	* R.M.S. On-State Current		Single phase, half wave, 180° conduction, Tc:72°C	310	A
I_{TSM}	* Surge On-State Current		½cycle, 50Hz/60Hz, peak value, non-repetitive	5000/5500	A
I^2t	* I^2t		Value for one cycle of surge current	125000	A^2S
P_{GM}	Peak Gate Power Dissipation			10	W
$P_{G(AV)}$	Average Gate Power Dissipation			3	W
I_{FGM}	Peak Gate Current			3	A
V_{FGM}	Peak Gate Voltage(Forwad)			10	V
V_{RGM}	Peak Gate Voltage(Reverse)			5	V
di/dt	Critical Rate of Rise of On-State Current		I_G=100mA, Tj=25°C, V_D=½V_{DRM}, dI_G/dt=0.1A/μs	200	A/μs
V_{ISO}	* Isolation Breakdown Voltage(R.M.S.)		A.C. 1 minute	2500	V
Tj	* Operating Junction Temperature			−40～+125	°C
Tstg	* Storage Temperature			−40～+125	°C
	Mounting Torque	(M5)	Recommended Value 25kgf·cm	22～28	kgf·cm
		Terminal (M8)	Recommended Value 105kgf·cm	95～115	
	Mass		Typical value	510	g

■Electrical Characteristics

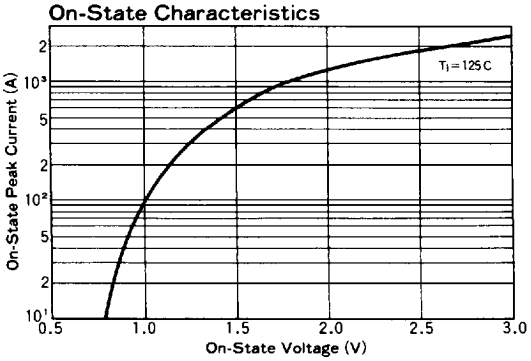
Symbol	Item	Conditions	Ratings	Unit
I_{DRM}	Repetitive Peak Off-State Current, max.	at V_{DRM}, Single phase, half wave, Tj=125°C	50	mA
I_{RRM}	* Repetitive Peak Reverse Current, max.	at V_{RRM}, Single phase, half wave, Tj=125°C	50	mA
V_{TM}	* Peak On-State Voltage, max.	On-State Current 600A, Tj=125°C Inst. measurement	1.50	V
I_{GT}/V_{GT}	Gate Trigger Current/Voltage, max.	Tj=25°C, I_T=1A, V_D=6V	100/3	mA/V
V_{GD}	Non-Trigger Gate, Voltage, min.	Tj=125°C, V_D=1/2V_{DRM}	0.25	V
tgt	Turn On Time, max.	I_T=200A, I_G=100mA, Tj=25°C, V_D=½V_{DRM}, dI_G/dt=0.1A/μs	10	μs
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	Tj=125°C, V_D=⅔V_{DRM}, Exponential wave.	500	V/μs
I_H	Holding Current, typ.	Tj=25°C	50	mA
I_L	Latching Current, typ.	Tj=25°C	100	mA
Rth(j-c)	* Thermal Impedance, max.	Junction to case	0.18	°C/W

* mark : Thyristor and Diode part. No mark : Thyristor part

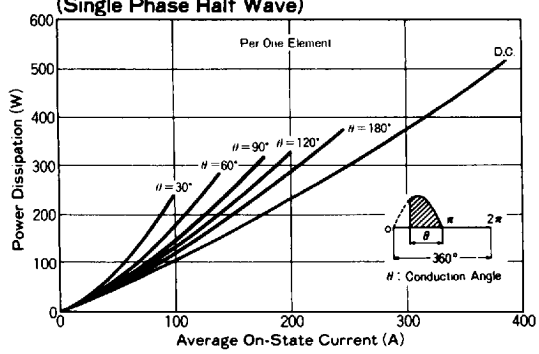
Gate Characteristics



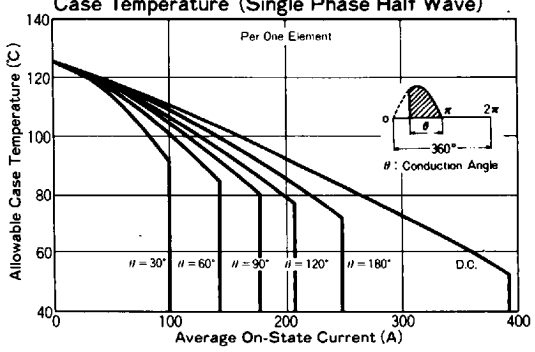
On-State Characteristics



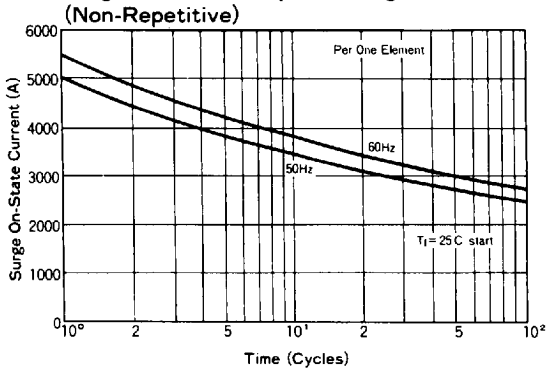
Average On-State Current Vs Power Dissipation (Single Phase Half Wave)



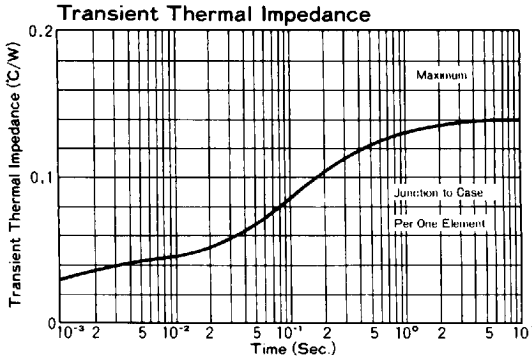
Average On-State Current Vs Maximum Allowable Case Temperature (Single Phase Half Wave)



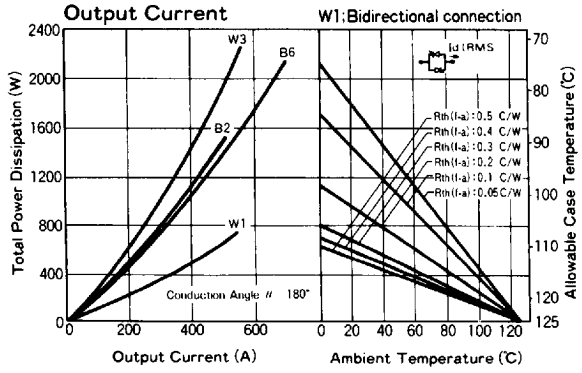
Surge On-State Current Rating (Non-Repetitive)

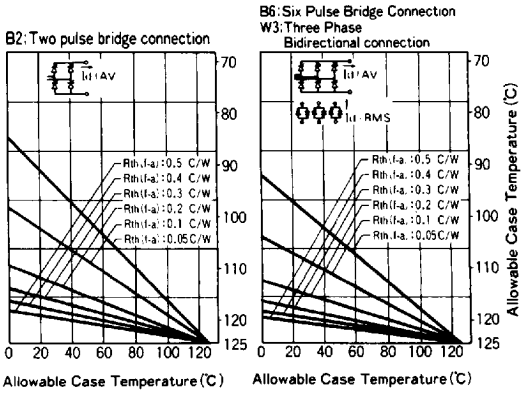


Transient Thermal Impedance



Output Current





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