Thyristor Module

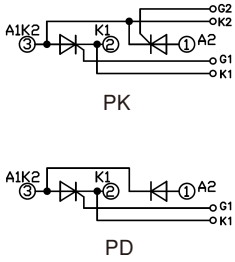
PK(PD)110FG80/160

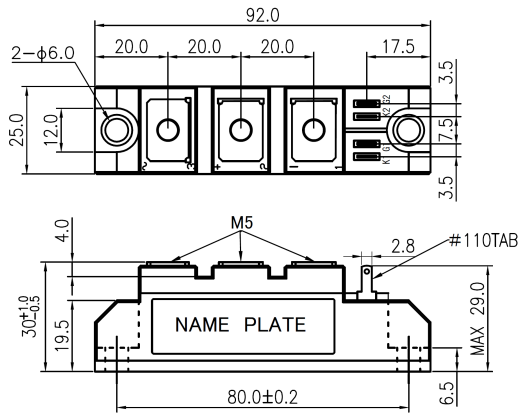
UL: E76102

《Features》
Power Thyristor/Diode Module PK110FG series are designed for various rectifier circuits and power controls. For your circuit application, following internal connections and wide voltage ratings up to 1600V are available. And electrically isolated mounting base make your mechanical design easy.

- $I_{T(AV)}$ 110A, $I_{T(RMS)}$ 172A, I_{TSM} 3000A
- di/dt 100A/μs
- dv/dt 1000V/μs

《Applications》
・Various rectifiers / AC.DC motor drives / Heater controls / Light dimmers / Static switches





Unit : mm

■ Maximum Ratings (Tj=25℃ unless otherwise specified)

Item	Symbol	Unit	PK110FG80 PD110FG80	PK110FG160 PD110FG160
* Repetitive Peak Reverse Voltage	V_{RRM}	V	800	1600
* Non-Repetitive Peak Reverse Voltage	V_{RSM}	V	960	1700
Repetitive Peak Off-State Voltage	V_{DRM}	V	800	1600

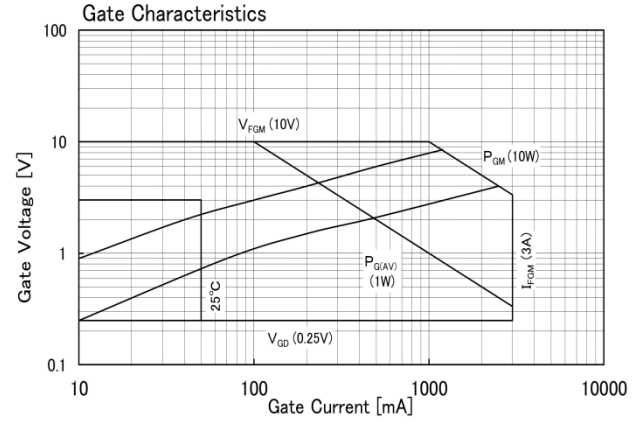
Item		Symbol	Unit	Ratings	Conditions
* Average On-State Current		$I_{T(AV)}$	A	110	Single phase, half wave, 180° condution, T_C=81℃
* R.M.S. On-State Current		$I_{T(RMS)}$	A	172	Single phase, half wave, 180° condution, T_C=81℃
* Surge On-State Current		I_{TSM}	A	2740/3000	1/2cycle, 50/60Hz, Peak value, non-repetitive
* I^2t(for fusing)		I^2t	A^2s	37500	Value for one cycle surge current
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	A/μs	100	I_G=100mA, V_D=1/2V_{DRM}, dI_G/dt=0.1A/μs
* Isolation Breakdown Voltage(R.M.S.)		V_{ISO}	V	2500	A.C. 1minute
* Operating Junction Temperature		T_j	℃	−40 to +125	
* Storage Temperature		T_{stg}	℃	−40 to +125	
Mounting torque	Mounting M5		N·m (kgf·cm)	2.7(28)	Recommended Value 1.5 to 2.5(15 to 25)
	Terminal M5			2.7(28)	Recommended Value 1.5 to 2.5(15 to 25)
Mass			g	170	Typical value

■ Electrical Characteristics (Tj=25℃ unless otherwise specified)

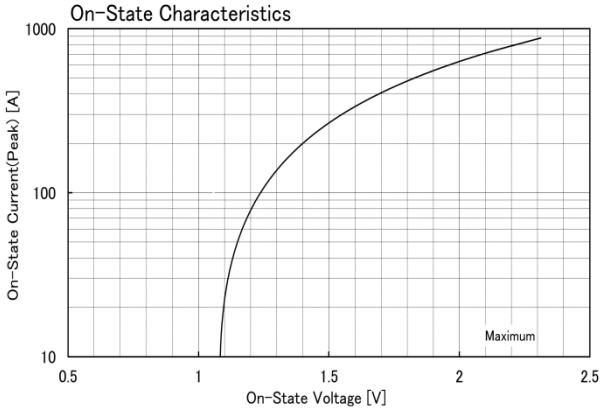
Item	Symbol	Unit	Ratings	Conditions
Repetitive Peak Off-State Current, max.	I_{DRM}	mA	30	at V_{DRM}, Single phase, half wave, T_j=125℃
* Repetitive Peak Reverse Current, max.	I_{RRM}	mA	30	at V_{DRM}, Single phase, half wave, T_j=125℃
* Peak On-State Voltage, max.	V_{TM}	V	1.6	On-State Current 330A, Inst. measurement
Gate Trigger Current/Voltage, max.	I_{GT}/V_{GT}	mA/V	50/3	I_T=1A, V_D=6V
Non-Trigger Gate Voltage, min.	V_{GD}	V	0.25	T_j=125℃, V_D=1/2V_{DRM}
Turn-on Time, max	tgt	μs	10	I_T=110A, I_G=100mA, Tj=25℃, V_D=1/2V_{DRM}, dI_G/dt=0.1A/μs
Critical Rate of Rise of Off-State Voltage, min	dv/dt	V/μs	1000	T_j=125℃, V_D=2/3V_{DRM}, Exponential wave
Holding Current	I_H	mA	50	Tj=25℃
Latching Current	I_L	mA	100	Tj=25℃
* Thermal Resistance, max.	R_{th}	℃/W	0.25	Junction to case

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

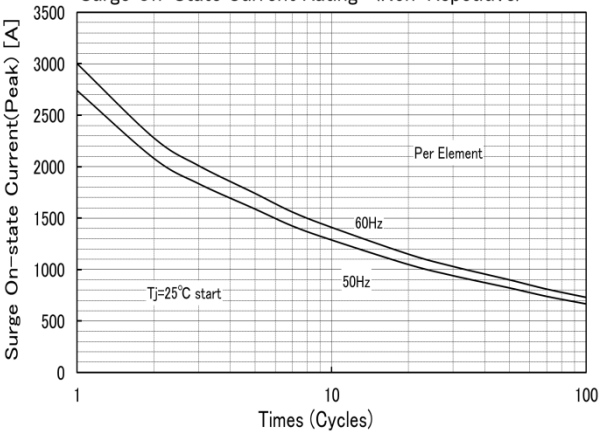
Gate Characteristics



On-State Characteristics



Surge On-State Current Rating 〈Non-Repetitive〉



Transient Thermal Impedance