

THYRISTOR MODULE

PK(PD,PE,KK)90GB

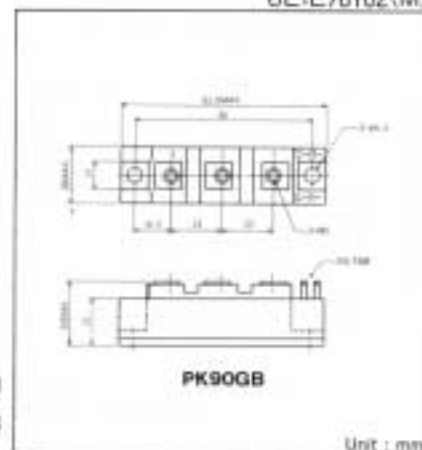
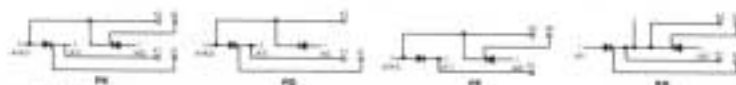
UL:E76102(M)

Power Thyristor/Diode Module PK90GB 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, and electrically isolated mounting base make your mechanical design easy.

- $I_{T(AV)}$ 90A, $I_{T(RMS)}$ 140A, I_{TSM} 1800A
- di/dt 200 A/ μ s
- dv/dt 500 V/ μ s

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

Internal Configurations



Maximum Ratings

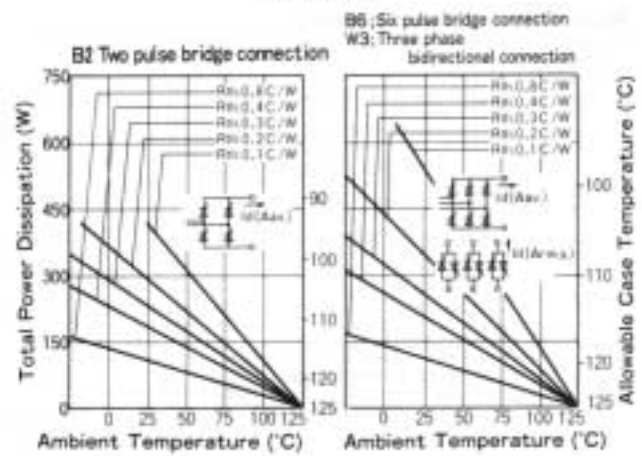
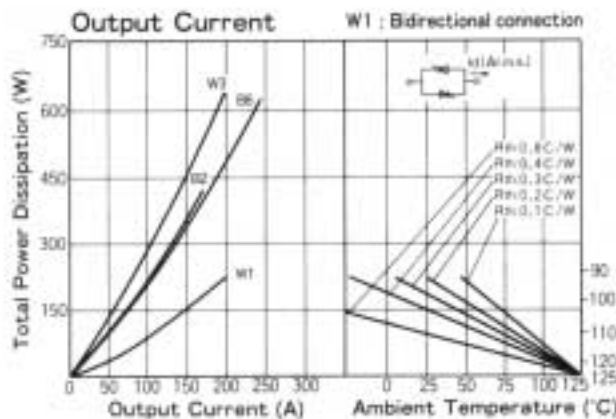
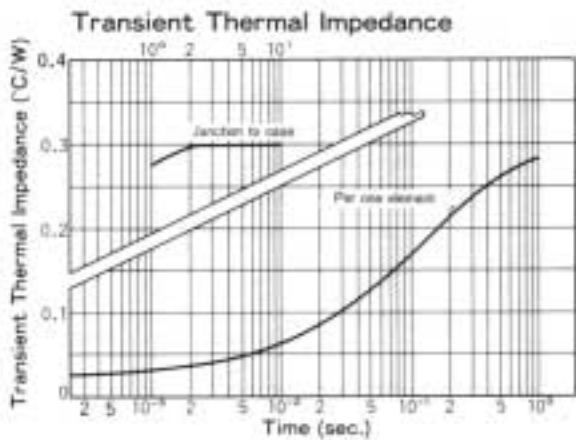
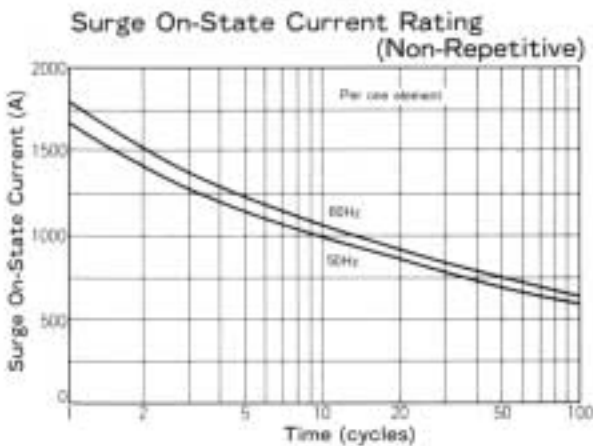
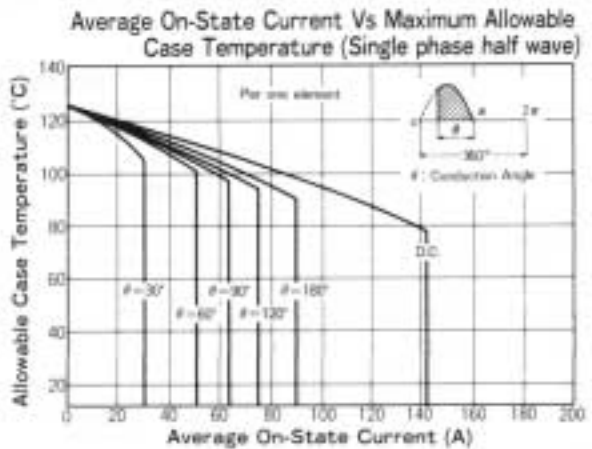
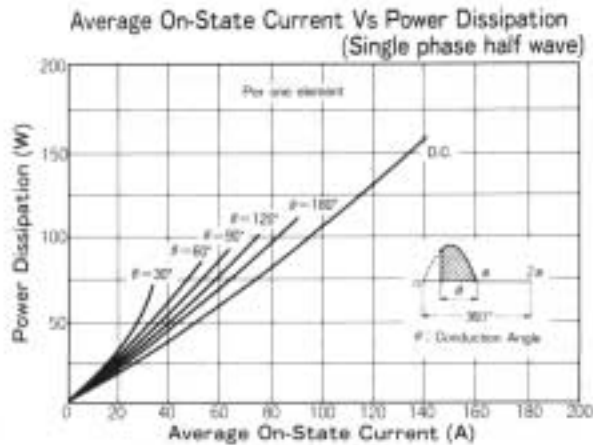
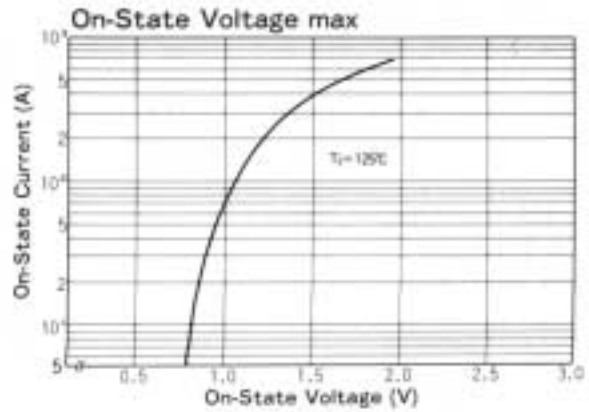
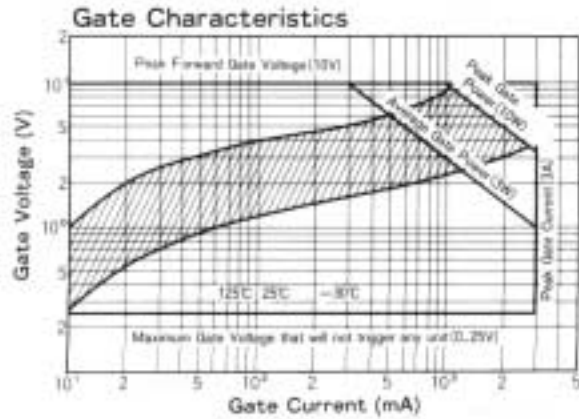
Symbol	Item	PK90GB-40 KK90GB-40	PD90GB-40 PE90GB-40	PK90GB-80 KK90GB-80	PD90GB-80 PE90GB-80	Unit
V_{RRM}	* Repetitive Peak Reverse Voltage	400		800		V
V_{RSM}	* Non-Repetitive Peak Reverse Voltage	480		960		V
V_{DRM}	Repetitive Peak Off-State Voltage	400		800		V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(AV)}$	* Average On-State Current	Single phase, half wave, 180° conduction, $T_c = 91^\circ\text{C}$	90	A
$I_{T(RMS)}$	* R.M.S On-State Current	Single phase, half wave, 180° conduction, $T_c = 91^\circ\text{C}$	140	A
I_{TSM}	* Surge On-State Current	$1/2$ cycle, 50/60Hz, peak value, non-repetitive	1650/1800	A
I^2t	* I^2t	Value for one cycle of surge current	15000	A ² S
P_{GM}	Peak Gate Power Dissipation		10	W
$P_{G(AV)}$	Average Gate Power Dissipation		3	W
I_{GM}	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	$I_a = 100\text{mA}$, $T_j = 25^\circ\text{C}$, $V_D = 1/2 V_{DRM}$, $di/dt = 0.1\text{A}/\mu\text{s}$	200	A/ μ s
V_{BO}	* Isolation Breakdown Voltage(R.M.S)	A.C. 1minute	2500	V
T_j	* Operating Junction Temperature		-40~+125	$^\circ\text{C}$
T_{stg}	* Storage Temperature		-40~+125	$^\circ\text{C}$
	Mounting Torque	(M5)	Recommended Value 43 kgf·cm	kgf·cm
		Terminal (M5)	Recommended Value 25 kgf·cm	
	Mass		170	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I_{OEM}	Repetitive Peak Off-State Current, max.	at V_{DRM} , single phase, half wave, $T_j = 125^\circ\text{C}$	15	mA
I_{RM}	* Repetitive Peak Reverse Current, max.	at V_{DRM} , single phase, half wave, $T_j = 125^\circ\text{C}$	15	mA
V_{TM}	* Peak On-State Voltage, max.	On-State Current 270A, $T_j = 125^\circ\text{C}$ Inst. measurement	1.30	V
I_{GT}/V_{GT}	Gate Trigger Current/Voltage, max.	$T_j = 25^\circ\text{C}$, $I_T = 1\text{A}$, $V_D = 6\text{V}$	100/3	mA/V
V_{GD}	Non-Trigger Gate, Voltage, min.	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$	0.25	V
t_{gt}	Turn On Time, max	$I_T = 90\text{A}$, $I_a = 100\text{mA}$, $T_j = 25^\circ\text{C}$, $V_D = 1/2 V_{DRM}$, $di/dt = 0.1\text{A}/\mu\text{s}$	10	μs
dv/dt	Critical Rate of Rise of On-State Voltage, min.	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$, Exponential wave.	500	V/ μ s
I_H	Holding Current, typ.	$T_j = 25^\circ\text{C}$	50	mA
I_L	Latching Current, typ.	$T_j = 25^\circ\text{C}$	100	mA
$R_{th(j-c)}$	* Thermal Impedance, max.	Junction to case	0.30	$^\circ\text{C}/\text{W}$

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



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