THYRISTOR MODULE（THREE PHASES A.C. CONTROL）

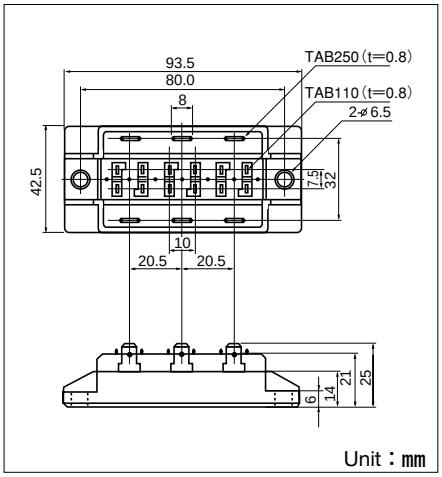
PFB15AA

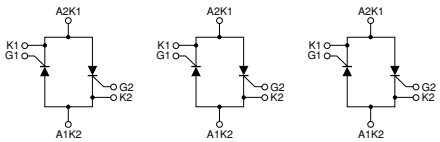
UL:E76102（M）

PFB15AA is a 6 chip Thyristor module which contains 3 independent back-to-back SCR configurations.

- Easy construction by 3 phase back-to back SCRs in one package.
- high voltage 1600V

（**Applications**）
SSR
3 Phase Motor Control
Heater Control





■Maximum Ratings

（Tj=25℃ unless otherwise specified）

Symbol	Item	Ratings					Unit
		PFB15AA80	PFB15AA100	PFB15AA120	PFB15AA140	PFB15AA160	
V_{DRM}	Repetitive Peak Off-State Voltage	800	1000	1200	1400	1600	V

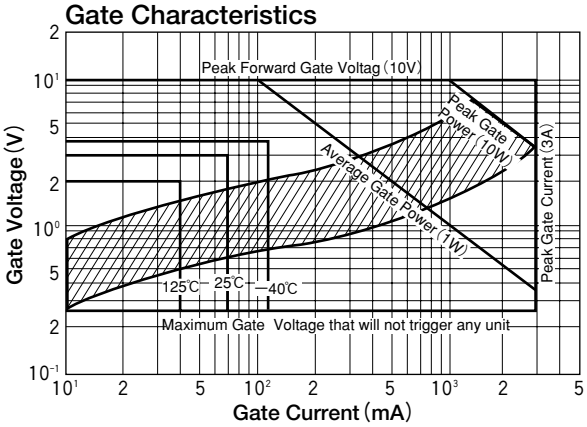
Symbol	Item	Conditions	Ratings	Unit
$I_{T(AV)}$	Average On-State Current	Single phase, half wave, 180° conduction, Tc：77℃	15	A
$I_{T(RMS)}$	R.M.S. On-State Current	Tc：77℃	33	A
I_{TSM}	Surge On-State Current	½cycle, 50Hz/60Hz, peak value, non-repetitive	320/350	A
I^2t	I^2t		512	A^2S
P_{GM}	Peak Gate Power 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 Rise of On-State Current	I_G=100mA, Tj=25℃, V_D=½V_{DRM}, dI_G/dt=1A/μs	100	A/μs
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1minute	2500	V
Tj	Operating Junction Temperature		−40 to +125	℃
Tstg	Storage Temperature		−40 to +125	℃
	Mounting Torque（M6）	Recommended Value 2.5-3.9（25-40）	4.7（48）	N・m (kgf・cm)
	Mass		160	g

■Electrical Characteristics

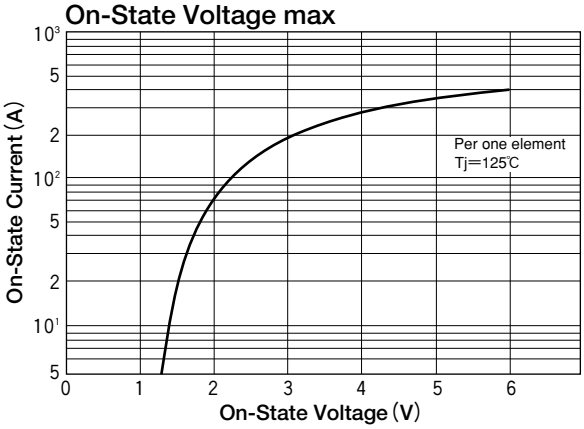
Symbol	Item	Conditions	Ratings	Unit
I_{DRM}	Repetitive Peak Off-State Current, max.	at V_{DRM}, single phase, half wave, Tj=125℃	10	mA
V_{TM}	Peak On-State Voltage, max.	On-State Current 45A, Tj=125℃ Inst. measurement	1.75	mA
I_{GT}／V_{GT}	Gate Trigger Current/Voltage, max.	Tj=25℃, I_T=1A, V_D=6V	70/3	mA/V
V_{GD}	Non-Trigger Gate, Voltage. min.	Tj=125℃, V_D=½V_{DRM}	0.25	V
tgt	Turn On Time, max.	I_T=15A, I_G=100mA, 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=125℃, V_D=⅔V_{DRM}, Exponential wave.	500	V/μs
I_H	Holding Current, typ.	Tj=25℃	50	mA
I_L	Lutching Current, typ.	Tj=25℃	100	mA
Rth(j-c)	Thermal Impedance, max.（one element）	Junction to case	1.90	℃/W
Rth(j-c)	Thermal Impedance, max.（six element）	Junction to case	0.317	℃/W

SanRex

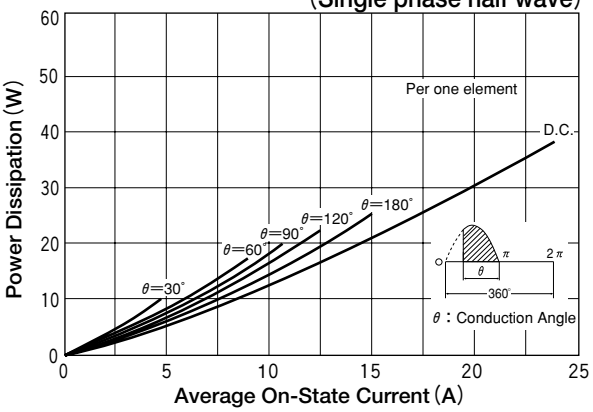
Gate Characteristics



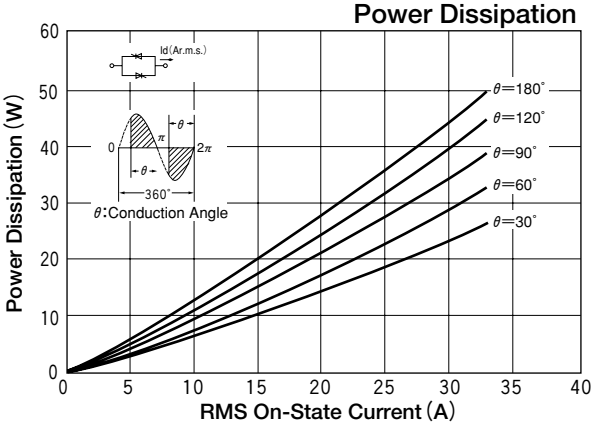
On-State Voltage max



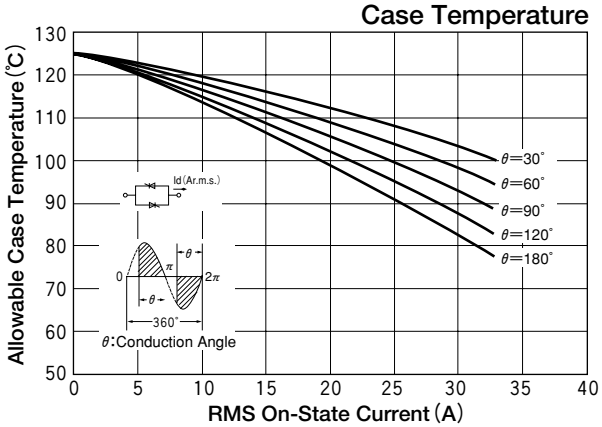
Average On-State Current Vs Power Dissipation (Single phase half wave)



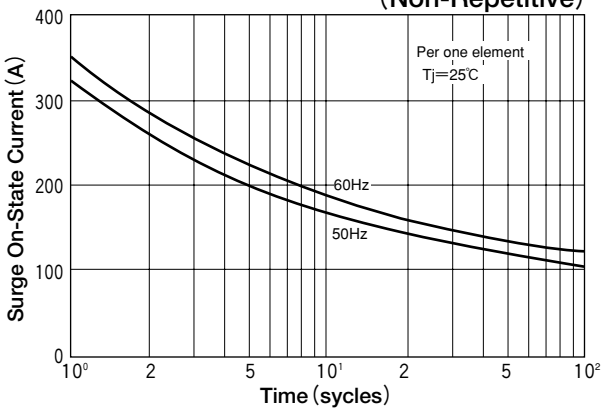
RMS On-State Current Vs Maximum Power Dissipation



RMS On-State Current Vs Allowable Case Temperature

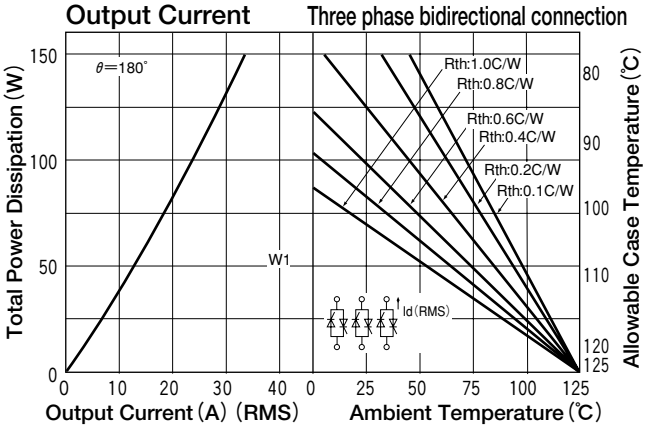
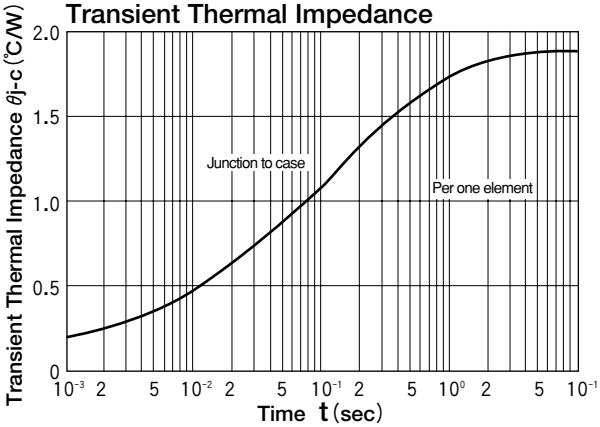


Surge On-State Current Rating (Non-Repetitive)



Output Current

Three phase bidirectional connection



Transient Thermal Impedance