

# SanRex

## THYRISTOR / DIODE (ISOLATED TYPE)

### PK(PD)160FG40/80/120/160

$I_{T(AV)} = 160A$ ,  $V_{RRM} = 400 - 1600V$

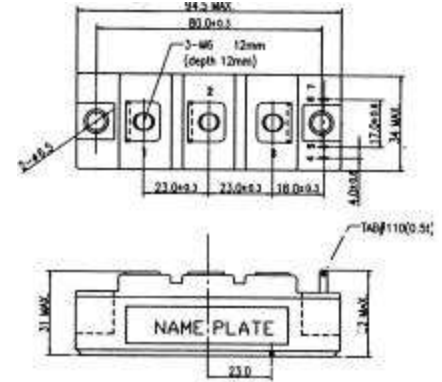
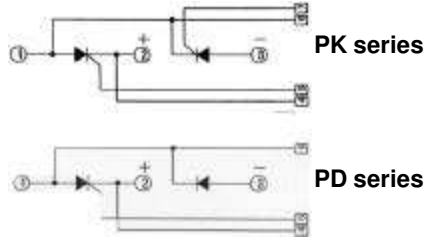
**SanRex** Thyristor/Thyristor modules (**PK series**), Thyristor/Diode modules (**PD series**) are designed for general purpose high voltage applications such as motor controls, temperature controls, lighting controls and UPS.

#### Features

- \* Glass-passivated junctions Features
- \* High Surge Current
- \* Low loss ( $V_{TM}=1.5V$ )

#### Typical Applications

- \* Motor Controls
- \* Temperature Controls
- \* Lighting Controls



< Maximum Ratings >

( $T_j = 25^\circ C$  unless otherwise noted)

Symbol	Item	Ratings				Unit
		PK160FG40	PK160FG80	PK160FG120	PK160FG160	
$V_{RRM}$	Repetitive Peak Reverse Voltage	400	800	1200	1600	V
$V_{RSM}$	Non-Repetitive Peak Reverse Voltage	480	960	1300	1700	V
$V_{DRM}$	Repetitive Peak Off-state Voltage	400	800	1200	1600	V
$I_{T(AV)}$	Average On-state Current	$T_C = 84^\circ C$			160	A
$I_{T(RMS)}$	R.M.S. On-state Current	$T_C = 84^\circ C$			251	A
$I_{TSM}$	Surge On-state Current	1/2 cycle, 50Hz/60Hz, Peak value, Non-repetitive			5000/5400	A
$I^2 t$	$I^2 t$ (for fusing)	Value for one cycle surge current			125000	$A^2 s$
$P_{GM}$	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 (Forward)				10	V
$V_{RGM}$	Peak Gate Voltage (Reverse)				5	V
di/dt	Critical Rate of Rise of On-state Current	$I_G=100mA$ , $V_D=1/2V_{DRM}$ , dig/dt=0.1A/Fs			200	A/Fs
$V_{ISO}$	Isolation Breakdown Voltage	A.C. 1 minute			2500	
$T_j$	Operating Junction Temperature				-40 to +125	$^\circ C$
$T_{stg}$	Storage Temperature				-40 to +125	$^\circ C$
	Mounting Torque	Mounting M6	Recommended Value 2.5 to 3.9		4.7	N*m
		Terminals M6	Recommended Value 2.5 to 3.9		4.7	
	Mass	Typical Value			210	g

< Electrical Characteristics >

( $T_j = 25^\circ C$  unless otherwise noted)

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
$I_{DRM}$	Repetitive Peak Off-state Current	$T_j = 125^\circ C$ , $V_D = V_{DRM}$			35	mA
$I_{RRM}$	Repetitive Peak Reverse Current	$T_j = 125^\circ C$ , $V_R = V_{RRM}$			35	mA
$V_{TM}$	Peak On-State Voltage	$I_T = 480A$			1.5	V
$I_{GT}$	Gate Trigger Current	$V_D=6V$ , $I_T=1A$			100	mA
$V_{GT}$	Gate Trigger Voltage	$V_D=6V$ , $I_T=1A$			3	V
$V_{GD}$	Non-Trigger Gate Voltage	$T_j = 125^\circ C$ , $V_D=1/2V_{DRM}$	0.25			V
dv/dt	Critical Rate of Rise of Off-state Voltage	$T_j = 125^\circ C$ , $V_D=2/3V_{DRM}$	500			V/Fs
Rth(j-c)	Thermal Resistance	Junction to case			0.18	$^\circ C/W$