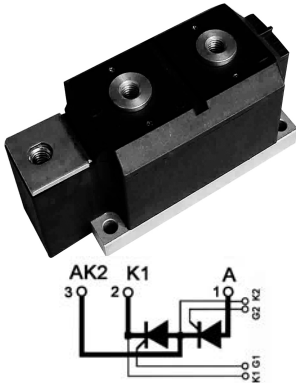


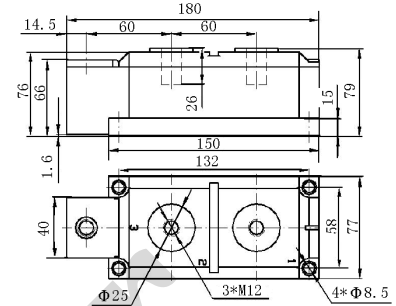
# STT800GKXXPT

## Thyristor-Thyristor Modules



Type	$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V
STT800GK08PT	900	800
STT800GK12PT	1300	1200
STT800GK14PT	1500	1400
STT800GK16PT	1700	1600
STT800GK18PT	1900	1800

Colerance:  $\pm 0.5\text{mm}$   
Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions	Maximum Ratings	Unit
ITAV	$T_C=85^\circ\text{C}$ ; $180^\circ$ half sine wave, 50HZ	800	A
ITRMS	$T_C=85^\circ\text{C}$ ; $180^\circ$ Full cycle sine wave, 50HZ	1256	A
ITSM $I^2t$	$T_{VJ}=T_{VJM}$ $T_C=25^\circ\text{C}$ $180^\circ$ half sine wave, 50HZ single pulse; $V_R=0$ ;	30.0 35.0	A
	$T_{VJ}=T_{VJM}$ $T_C=25^\circ\text{C}$ Gate pulse; 20V, 5W 1us rise time, 500us	4500 6125	
$V_{DRM}$ , $V_{RRM}$	$T_{VJ}=T_{VJM}$ $180^\circ$ half sine wave, 50HZ ; Gate open	1000/1800	A <sup>2</sup> s
$V_{DSM}$ , $V_{RSM}$	$T_{VJ}=T_{VJM}$ $180^\circ$ half sine wave, 50HZ ; single pulse, Gate open	1100/1900	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ $f=50\text{Hz}$ , $t_p=200\text{us}$ $V_D=2/3V_{DRM}$ $I_G=1\text{A}$ $di/dt=1\text{A/us}$	repetitive, $I_T=960\text{A}$ 100	A/us
		non repetitive, $I_T=I_{TAVM}$ 200	
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$ ; $R_{GK}=\infty$ ; method 1 (linear voltage rise) $V_{DR}=2/3V_{DRM}$	1000	V/us
P <sub>GM</sub>	$T_{VJ}=T_{VJM}$	40	W
P <sub>GAV</sub>	$T_{VJ}=T_{VJM}$	6	W
V <sub>RGM</sub>	$T_{VJ}=T_{VJM}$	5	V
$T_{VJ}$ $T_{VJM}$ $T_{stg}$		-40...+140 140 -40...+125	$^\circ\text{C}$
V <sub>ISOL</sub>	50/60Hz, RMS $I_{ISOL} \leq 1\text{mA}$	$t=1\text{min}$ $t=1\text{s}$ 3000 3600	V~
M <sub>d</sub>	Mounting torque (M6) Terminal connection torque (M8)	4.5-7/40-60 11-13/97-115	Nm/lb.in.
Weight	Typ.	3249	g

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# STT800GKXXPT

## Thyristor-Thyristor Modules

Symbol	Test Conditions	Characteristic Values	Unit
<b>I<sub>RRM</sub></b>	$T_{VJ}=T_{VJM}; V_R=V_{RRM}$	70	mA
<b>V<sub>T</sub></b>	$I_T=1200A; T_{VJ}=25^{\circ}C$	1.55	V
<b>V<sub>TO</sub></b>	For power-loss calculations only ( $T_{VJ}=T_{VJM}$ )	0.9	V
<b>r<sub>T</sub></b>		0.21	mΩ
<b>V<sub>GT</sub></b>	$V_D=12V$ $T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	2.5 3.5	V
<b>I<sub>GT</sub></b>	$V_D=12V$ $T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	300 400	mA
<b>V<sub>GD</sub></b>	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.5	V
<b>I<sub>GD</sub></b>	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	10	mA
<b>I<sub>L</sub></b>	$T_{VJ}=25^{\circ}C; t_p=30\mu s; V_D=12V$ $I_G=1A; di_G/dt=1A/\mu s$	1000	mA
<b>I<sub>H</sub></b>	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$	500	mA
<b>t<sub>gd</sub></b>	$T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$ $I_G=1A; di_G/dt=1A/\mu s$	10	us
<b>t<sub>q</sub></b>	$T_{VJ}=T_{VJM}; I_T=500A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=50V/\mu s; V_D=2/3V_{DRM}$	200	us
<b>R<sub>thJC</sub></b>	DC current	0.0405	K/W
<b>R<sub>thJK</sub></b>	DC current	0.01	K/W
<b>ds</b>	Creeping distance on surface	12.7	mm
<b>da</b>	Creepage distance in air	9.6	mm
<b>a</b>	Maximum allowable acceleration	59.81	m/s <sup>2</sup>

### FEATURES

- \* International standard package
- \* Copper base plate
- \*  $U_i=3600V$
- \* Isolation voltage 3600V~
- \* UL file NO.310749
- \* RoHs compliant

### APPLICATIONS

- \* Motor control, softstarter
- \* Power converter
- \* Heat and temperature control for industrial furnaces and chemical processes
- \* Lighting control
- \* Solid state switches

### ADVANTAGES

- \* Simple mounting
- \* Improved temperature and power cycling
- \* Reduced protection circuits

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# STT800GKXXPT

## Thyristor-Thyristor Modules

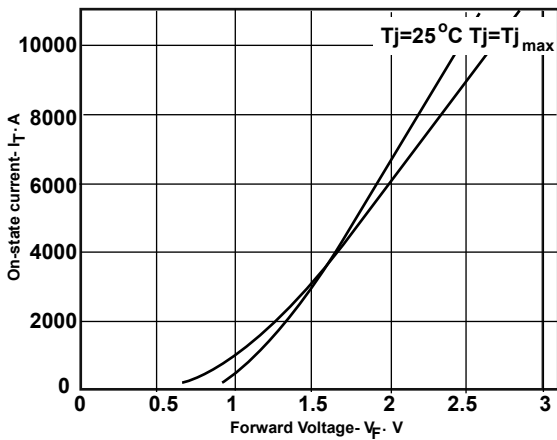


Fig 1 On-state characteristics

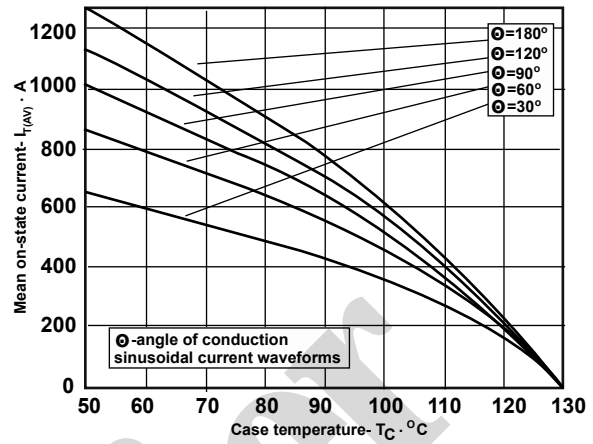


Fig 2 Mean on-state  $I_{T(AV)}$  vs. Case temperature  $T_C$  for sinusoidal current waveforms at different conduction angles,  $f=50\text{Hz}$

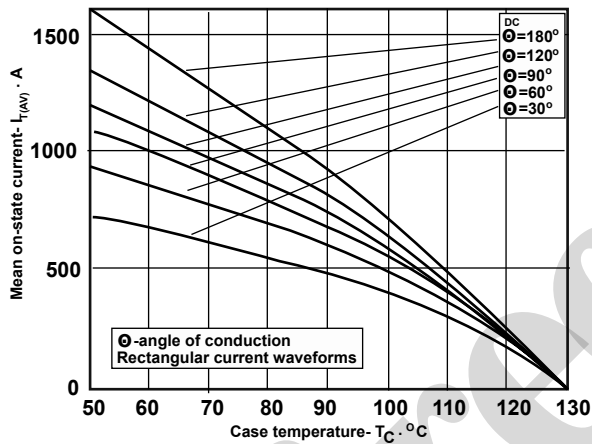


Fig 3 Mean on-state  $I_{T(AV)}$  vs. Case temperature  $T_C$  for rectangular current waveforms at different conduction angles and for DC,  $f=50\text{Hz}$

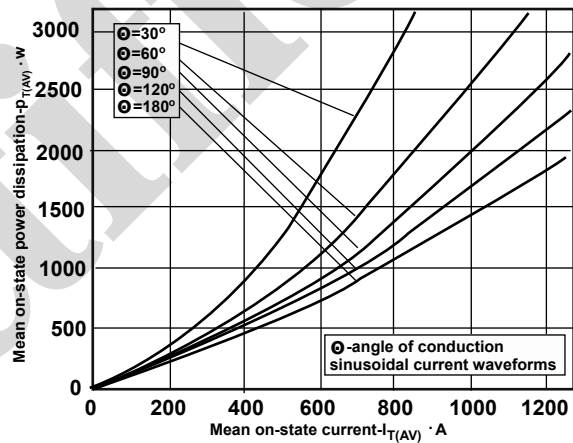


Fig 4 Mean on-state power dissipation  $P_{T(AV)}$  vs. Mean on-state current  $I_{T(AV)}$  for sinusoidal current waveforms at different conduction angles,  $f=50\text{Hz}$

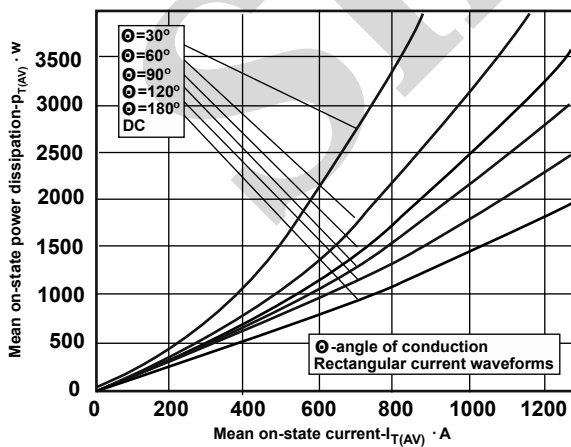


Fig 5 Mean on-state power dissipation  $P_{T(AV)}$  vs. Mean on-state current  $I_{T(AV)}$  for rectangular current waveforms at different conduction angles and for DC,  $f=50\text{Hz}$



# STT800GKXXPT

## Thyristor-Thyristor Modules

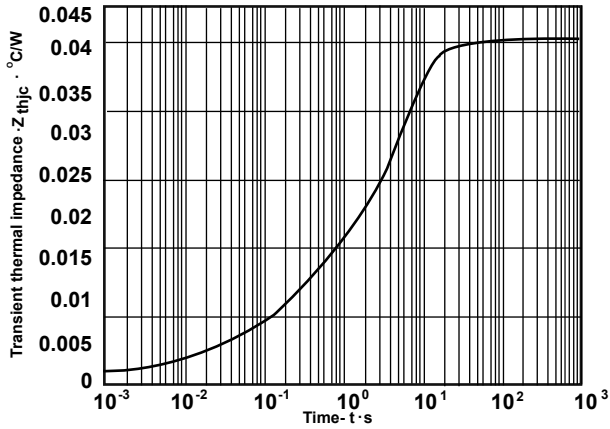


Fig 6 Transient thermal impedance junction to case  $Z_{thjc}$  per arm for DC

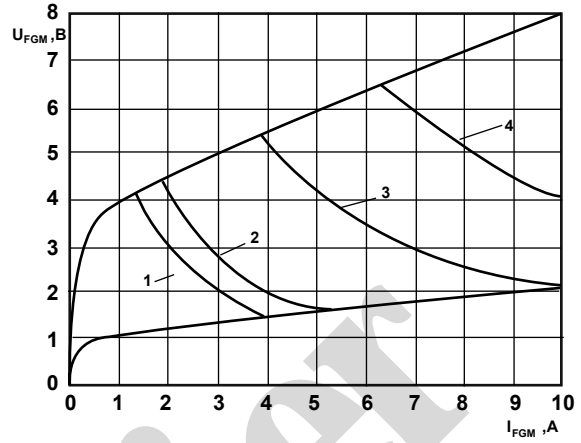


Fig 7 Gate characteristic

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