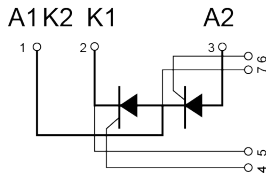


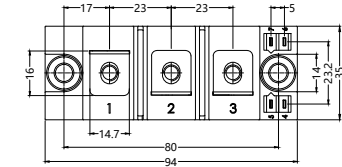
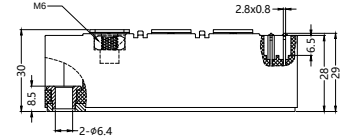
STT200GK18B

Thyristor-Thyristor Modules



Type	V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V
STT200GK08B	900	800
STT200GK12B	1300	1200
STT200GK14B	1500	1400
STT200GK16B	1700	1600
STT200GK18B	1900	1800

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions	Maximum Ratings	Unit
I_{TRMS} , I_{FRMS} I_{TAVM} , I_{FAVM}	$T_V = T_{VJM}$ $T_C = 85^\circ\text{C}$; 180° sine	314 200	A
I_{TSM} , I_{FSM}	$T_V = 45^\circ\text{C}$ $V_R = 0$ $t = 10\text{ms}$ (50Hz), sine $t = 8.3\text{ms}$ (60Hz), sine	8000 8600	A
	$T_V = T_{VJM}$ $V_R = 0$ $t = 10\text{ms}$ (50Hz), sine $t = 8.3\text{ms}$ (60Hz), sine	7000 7500	
$\int i_2 dt$	$T_V = 45^\circ\text{C}$ $V_R = 0$ $t = 10\text{ms}$ (50Hz), sine $t = 8.3\text{ms}$ (60Hz), sine	320000 311000	A^2s
	$T_V = T_{VJM}$ $V_R = 0$ $t = 10\text{ms}$ (50Hz), sine $t = 8.3\text{ms}$ (60Hz), sine	245000 236000	
$(di/dt)_{cr}$	$T_V = T_{VJM}$ $f = 50\text{Hz}$, $t_p = 200\mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 1\text{A}$ $di/dt = 1\text{A}/\mu\text{s}$	repetitive, $I_T = 500\text{A}$ 250	A/ μs
	non repetitive, $I_T = 500\text{A}$	800	
$(dv/dt)_{cr}$	$T_V = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)	1000	V/ μs
P_{GM}	$T_V = T_{VJM}$ $I_T = I_{TAVM}$ $t_p = 30\mu\text{s}$ $t_p = 500\mu\text{s}$	120 60	W
P_{GAV}		20	W
V_{RGM}		10	V
T_V T_{VJM} T_{stg}		-40...+125 125 -40...+125	$^\circ\text{C}$
V_{ISOL}	50/60Hz, RMS $I_{ISOL} \leq 1\text{mA}$ $t = 1\text{min}$ $t = 1\text{s}$	3000 3600	V~
M_d	Mounting torque (M6) Terminal connection torque (M6)	2.25-2.75/20-25 4.5-5.5/40-48	Nm/lb.in.
Weight	Typ.	173	g

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STT200GK18B

Thyristor-Thyristor Modules

Symbol	Test Conditions	Characteristic Values	Unit
IRRM	$T_{VJ}=T_{VJM}; V_R=V_{RRM};$	70	mA
IDRM	$T_{VJ}=T_{VJM}; V_D=V_{DRM}$	70	mA
V_T, V_F	$I_T, I_F=600A; T_{VJ}=25^{\circ}C$	1.60	V
V_{TO}	For power-loss calculations only ($T_{VJ}=125^{\circ}C$)	0.95	V
r_T		1.0	mΩ
V_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$ Max.	2 3	V
I_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$ Max.	150 200	mA
V_{GD}	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.25	V
I_{GD}		10	mA
I_L	$T_{VJ}=25^{\circ}C; t_p=30\mu s; V_D=6V$ $I_G=0.45A; di/dt=0.45A/\mu s$ Max.	300	mA
I_H	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$ Max.	150	mA
t_{gd}	$T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$ $I_G=1A; di/dt=1A/\mu s$	2	us
t_q	$T_{VJ}=T_{VJM}; I_T=200A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=50V/\mu s; V_D=2/3V_{DRM}$ typ.	200	us
Q_s	$T_{VJ}=125^{\circ}C; I_T, I_F=400A; -di/dt=50A/\mu s$	760	uC
I_{RM}		275	A
R_{thJC}	per thyristor/diode; DC current per module	0.140 0.070	K/W
R_{thJK}	per thyristor/diode; DC current per module	0.180 0.090	K/W
ds	Creeping distance on surface	12.7	mm
da	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s ²

FEATURES

- * International standard package
- * Glass passivated chips
- * Isolation voltage 3600 V~
- * RoHs compliant
- * UL file E310749

APPLICATIONS

- * Motor control
- * Power converter
- * Heat and temperature control for industrial furnaces and chemical processes
- * Lighting control
- * Contactless switches

ADVANTAGES

- * Space and weight savings
- * Simple mounting
- * Improved temperature and power cycling
- * Reduced protection circuits



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Thyristor-Thyristor Modules

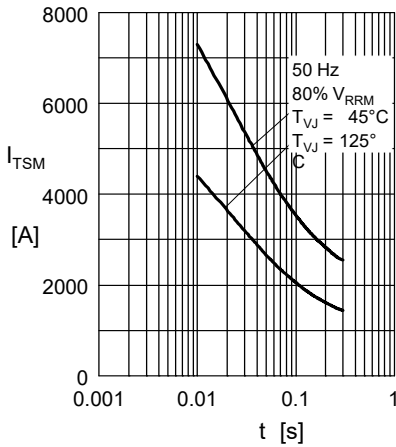


Fig. 1 Surge overload current I_{TSM} ,
 I_{FSM} : Crest value, t: duration

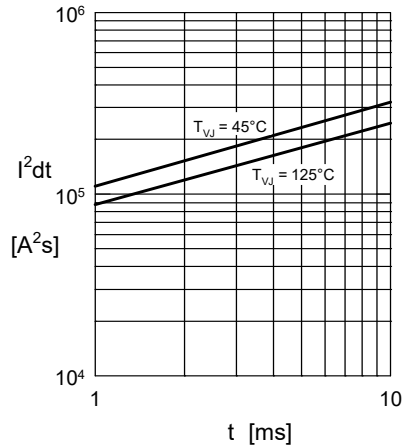


Fig. 2 I^2t versus time (1-10 ms)

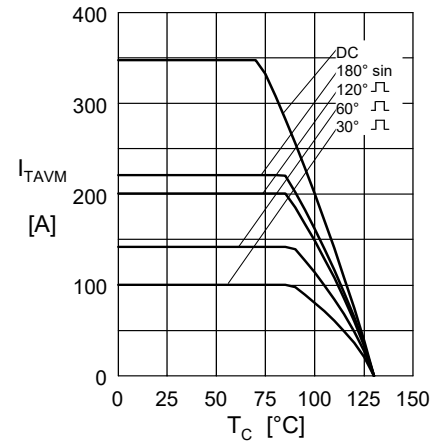


Fig. 3 Max. forward current
at case temperature

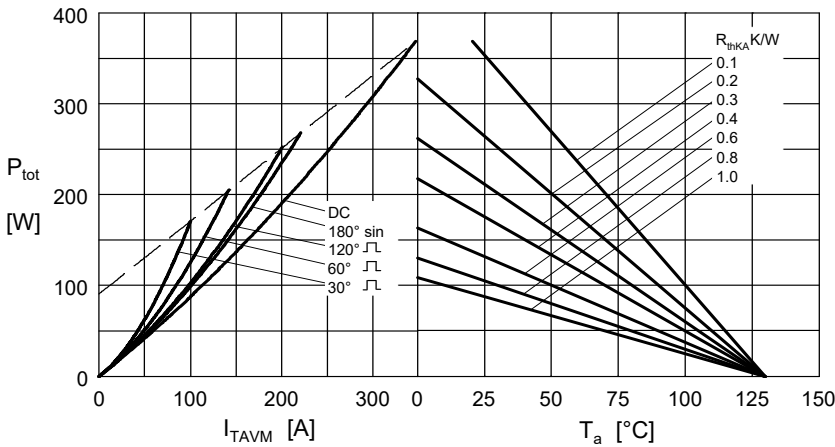


Fig. 4 Power dissipation vs. on-state current & ambient temperature
(per thyristor or diode)

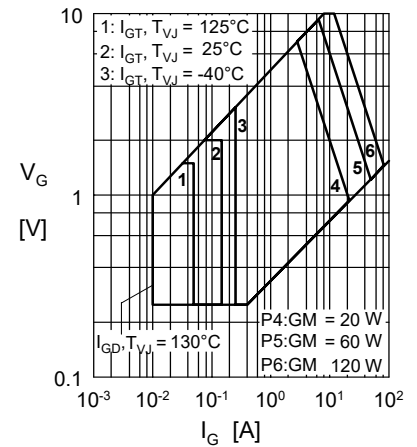


Fig. 5 Gate trigger characteristics

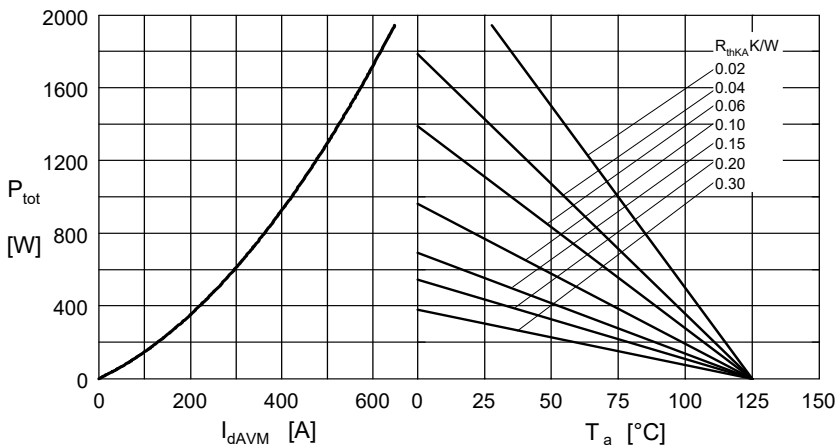


Fig. 6 Three phase rectifier bridge: Power dissipation versus direct
output current and ambient temperature

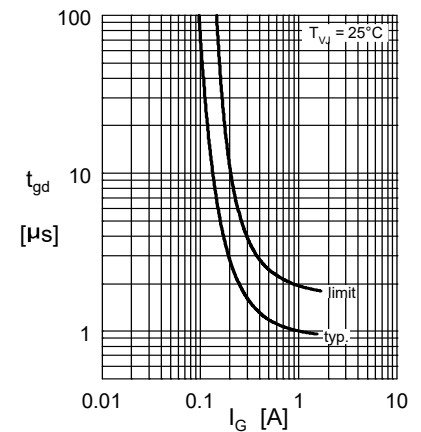


Fig. 7 Gate trigger delay time

STT200GK18B

Thyristor-Thyristor Modules

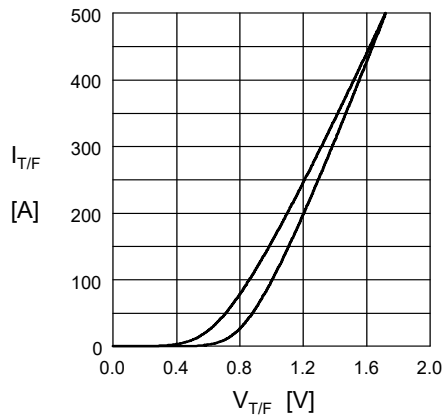
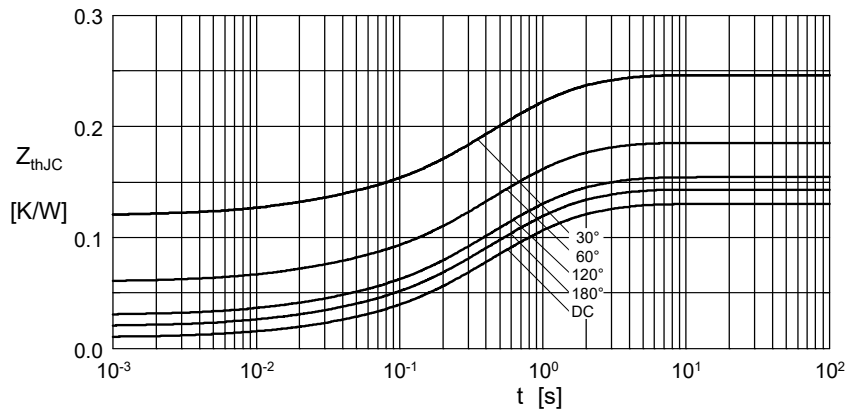


Fig. 8 Forward current versus voltage drop



Constants for Z_{thJC} calculation:

i	R_{thi} [K/W]	t_i [s]
1	0.0100	0.00014
2	0.0065	0.019
3	0.0250	0.180
4	0.0615	0.520
5	0.0270	1.600

Fig. 9 Transient thermal impedance junction to case at various conduction angles

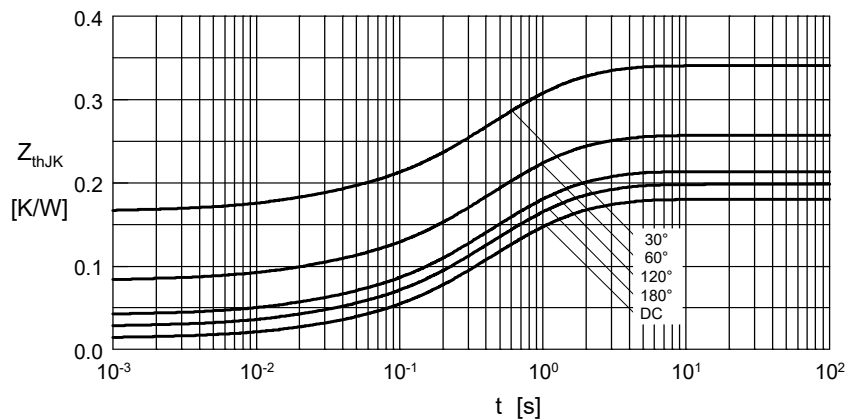


Fig. 10 Transient thermal impedance junction to heatsink (per thyristor/diode)