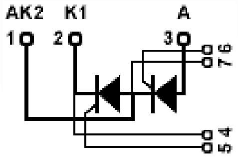
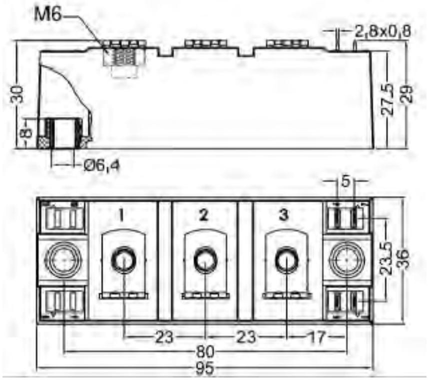
STT165GK**

Thyristor-Thyristor Modules



Type	V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V
STT165GK08	900	800
STT165GK12	1300	1200
STT165GK14	1500	1400
STT165GK16	1700	1600
STT165GK18	1900	1800
STT165GK20	2100	2000
STT165GK22	2300	2200

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions		Maximum Ratings	Unit
I_{TRMS}, I_{FRMS} I_{TAVM}, I_{FAVM}	$T_{VJ}=T_{VJM}$ $T_C=85^oC$; 180^o sine		259 165	A
I_{TSM}, I_{FSM}	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	6000 6400	A
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	5250 5600	
$\int i^2dt$	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	180000 170000	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	137000 128000	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ f=50Hz, t_p=200us $V_D=2/3V_{DRM}$ I_G=0.5A di_G/dt=0.5A/us	repetitive, I_T=500A non repetitive, $I_T=I_{TAVM}$	150 500	A/us
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$; $R_{GK}=\infty$; method 1 (linear voltage rise)	$V_{DR}=2/3V_{DRM}$	1000	V/us
P_{GM}	$T_{VJ}=T_{VJM}$ $I_T=I_{TAVM}$	t_p=30us t_p=500us	120 60	W
P_{GAV}			8	W
V_{RGM}			10	V
T_{VJ} T_{VJM} T_{stg}			-40...+125 125 -40...+125	^oC
V_{ISOL}	50/60Hz, RMS $I_{ISOL}\leq$1mA	t=1min t=1s	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.		123	g

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Symbol	Test Conditions	Characteristic Values	Unit
I_{RRM}, I_{DRM}	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$	40	mA
V_{TM}	$I_{TM}=495A$; $T_{VJ}=25^oC$	1.65	V
V_{TO}	For power-loss calculations only ($T_{VJ}=T_{VJM}$)	0.8	V
r_T		1.6	mΩ
V_{GT}	$V_D=6V$; $T_{VJ}=25^oC$ $T_{VJ}=-40^oC$	2 2.6	V
I_{GT}	$V_D=6V$; $T_{VJ}=25^oC$ $T_{VJ}=-40^oC$	150 200	mA
V_{GD}	$T_{VJ}=T_{VJM}$; $V_D=2/3V_{DRM}$	0.25	V
I_{GD}	$T_{VJ}=T_{VJM}$; $V_D=2/3V_{DRM}$	10	mA
I_L	$T_{VJ}=25^oC$; $t_p=30us$; $V_D=6V$ $I_G=0.45A$; $di_G/dt=0.45A/us$	200	mA
I_H	$T_{VJ}=25^oC$; $V_D=6V$; $R_{GK}=\infty$	150	mA
t_{gd}	$T_{VJ}=25^oC$; $V_D=1/2V_{DRM}$ $I_G=0.5A$; $di_G/dt=0.5A/us$	2	us
t_q	$T_{VJ}=T_{VJM}$; $I_T=160A$; $t_p=200us$; $-di/dt=10A/us$ typ. $V_R=100V$; $dv/dt=20V/us$; $V_D=2/3V_{DRM}$	150	us
Q_S	$T_{VJ}=T_{VJM}$; I_T, $I_F=300A$; $-di/dt=50A/us$	550	uC
I_{RM}		235	A
R_{thJC}	per thyristor/diode; DC current per module	0.155 0.0775	K/W
R_{thJK}	per thyristor/diode; DC current per module	0.225 0.1125	K/W
d_S	Creeping distance on surface	12.7	mm
d_A	Creepage distance in air	9.6	mm
a	Maximum allowable acceleration	50	m/s^2

FEATURES

- International standard package
- DBC baseplate
- Glass passivated chips
- Isolation voltage 3600 V~
- UL file NO.310749
- RoHs compliant

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

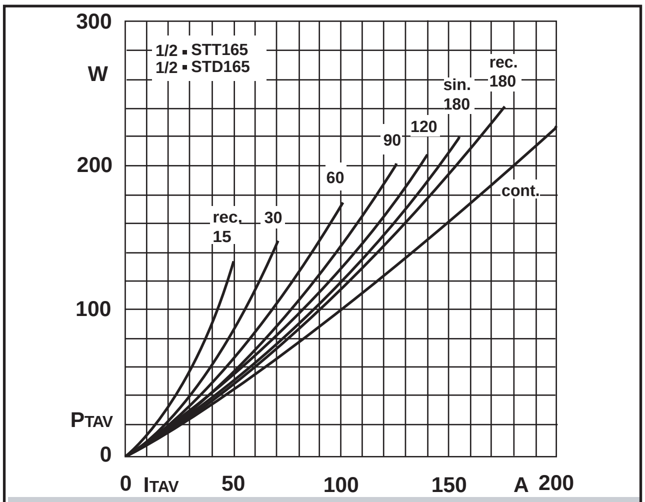

Fig.1L Power dissipation per thyristor vs. on-state current

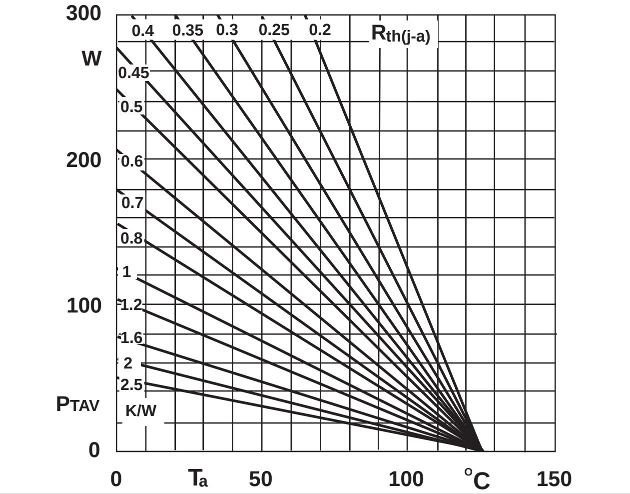

Fig.1R Power dissipation per thyristor vs. ambient temp

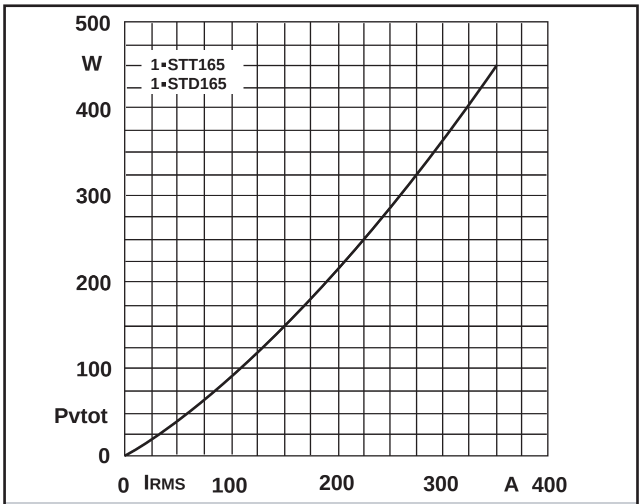

Fig.2L Power dissipation per module vs. rms current

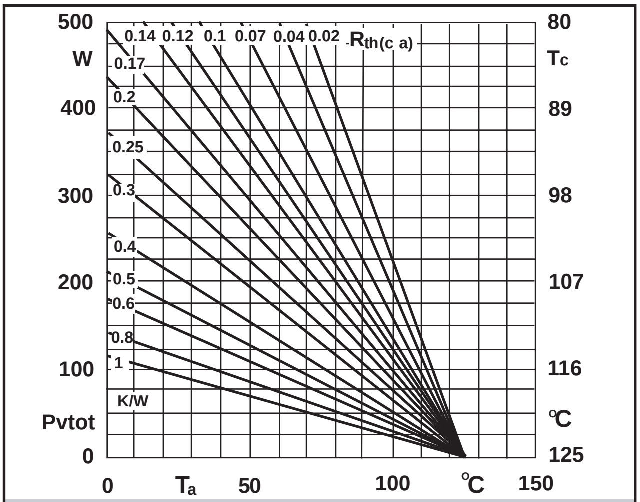

Fig.2R Power dissipation per module vs. case temp

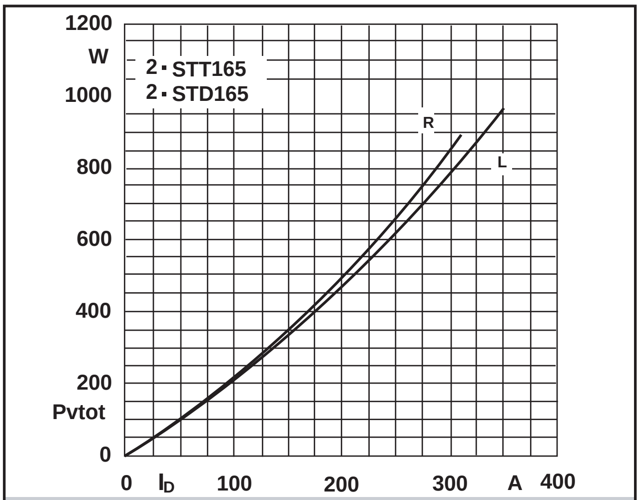

Fig.3L Power dissipation of two modules vs. direct current

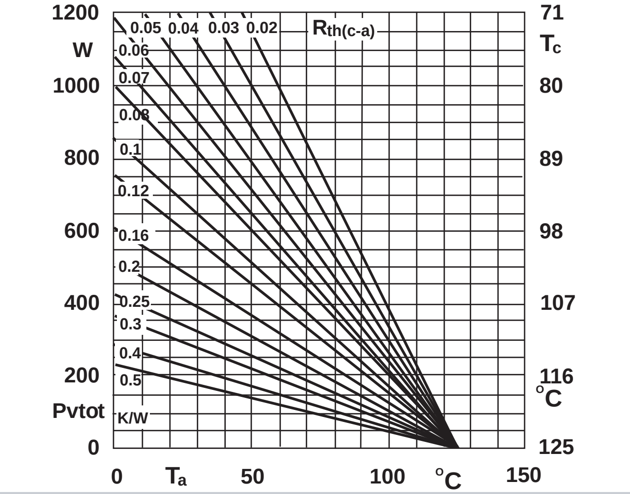

Fig.3 R Power dissipation of two modules vs. case temp

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Thyristor-Thyristor Modules

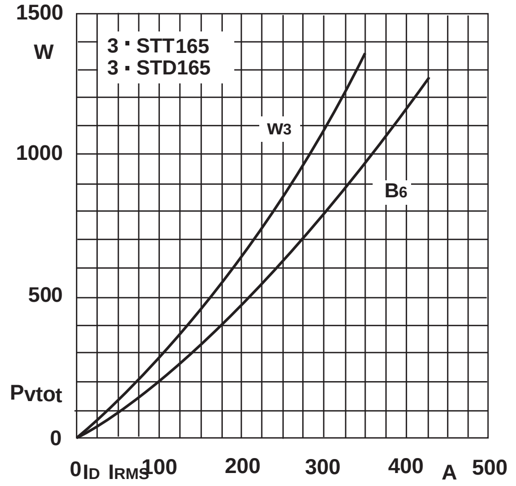

Fig.4L Power dissipation of three modules vs. direct and rms current

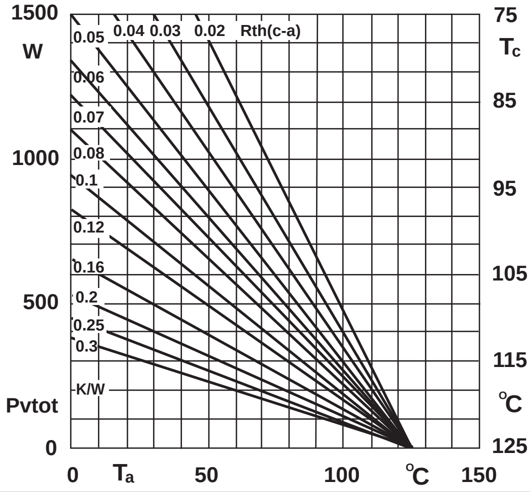

Fig.4R Power dissipation of three modules vs. case temp

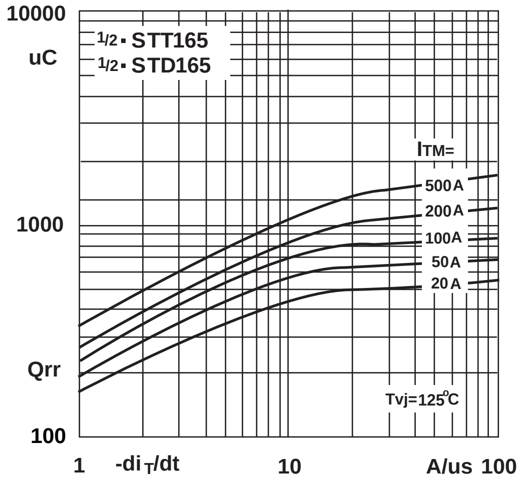

Fig.5 Recovered charge vs. current decrease

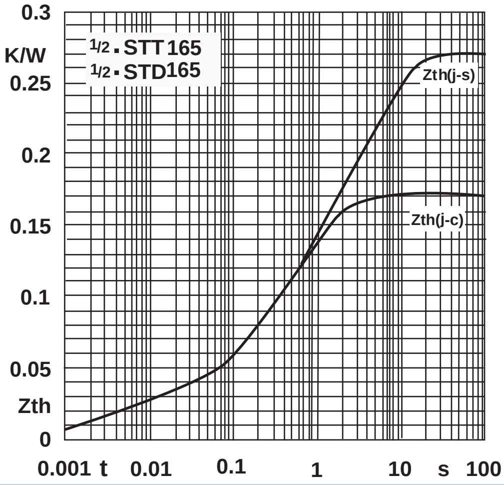

Fig.6 Transient thermal impedance vs. time

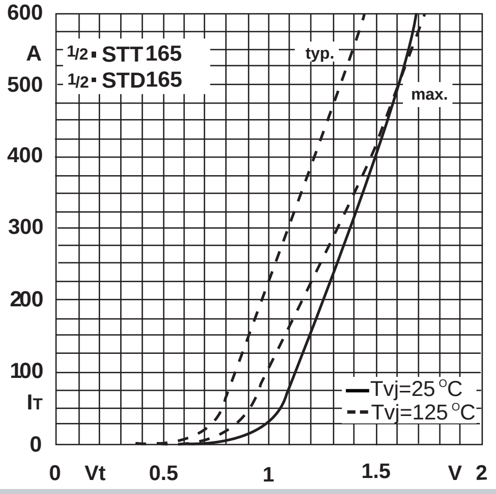

Fig.7 On-state charactristics

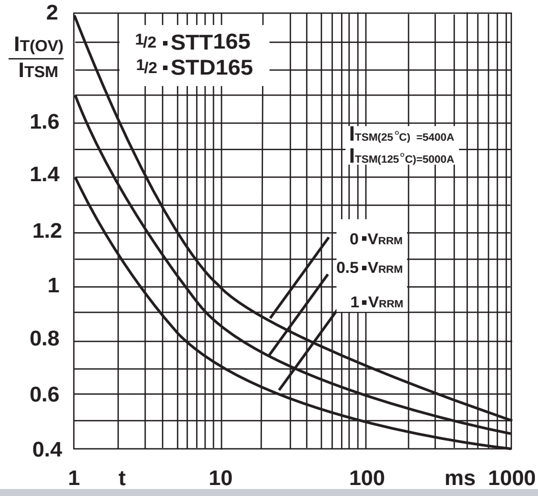

Fig.8 Surge overload current vs. time