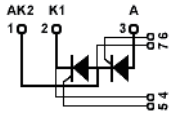
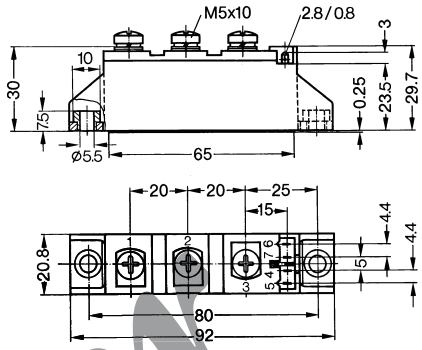
STT100GKxx

Thyristor-Thyristor Modules



Type	V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V
STT100GK08	900	800
STT100GK12	1300	1200
STT100GK14	1500	1400
STT100GK16	1700	1600
STT100GK18	1900	1800
STT100GK20	2100	2000
STT100GK22	2300	2200

Tolerance:±0.5mm
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° sine		180 100	A
I_{TSM}, I_{FSM}	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1700 1800	A
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1540 1640	
$\int i^2dt$	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	14450 13500	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	11850 11300	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ f=50Hz, t_P=200us $V_D=2/3V_{DRM}$ I_G=0.45A di_G/dt=0.45A/us	repetitive, $I_T=250A$ 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=300us	10 5	W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ} T_{VJM} T_{stg}			-40...+125 125 -40...+125	°C
V_{ISOL}	50/60Hz, RMS $I_{ISOL}\leq$1mA	t=1min t=1s	3000 3600	V~
M_d	Mounting torque (M5) Terminal connection torque (M5)		2.5-4.0/22-35 2.5-4.0/22-35	Nm/lb.in.
Weight	Typ.		81	g

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Symbol	Test Conditions	Characteristic Values	Unit
I_{RRM}, I_{DRM}	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$	15	mA
V_T, V_F	I_T, I_F=300A; T_{VJ}=25°C	1.74	V
V_{TO}	For power-loss calculations only ($T_{VJ}=T_{VJM}$)	0.85	V
r_T		3.2	mΩ
V_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C	1.5 1.6	V
I_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C	100 200	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°C; t_p=30us; V_D=6V I_G=0.45A; di_G/dt=0.45A/us	200	mA
I_H	T_{VJ}=25°C; V_D=6V; R_{GK}=∞	150	mA
t_{gd}	T_{VJ}=25°C; $V_D=1/2V_{DRM}$ I_G=0.45A; di_G/dt=0.45A/us	2	us
t_q	$T_{VJ}=T_{VJM}$; I_T=150A; t_p=200us; -di/dt=10A/us typ. V_R=100V; dv/dt=20V/us; $V_D=2/3V_{DRM}$	185	us
Q_S	$T_{VJ}=T_{VJM}$; I_T=50A; -di/dt=6A/us	170	uC
I_{RM}		45	A
R_{thJC}	per thyristor/diode; DC current per module	0.22 0.11	K/W
R_{thJK}	per thyristor/diode; DC current per module	0.42 0.21	K/W
ds	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
* DCB base plate
* Glass passivated chips
* Isolation voltage 3600 V~
* UL file NO.310749
* RoHs compliant

APPLICATIONS

* DC motor control
* Softstart AC motor controller
* Light, heat and temperature control

ADVANTAGES

* Space and weight savings
* Simple mounting with two screws
* Improved temperature and power cycling
* Reduced protection circuits

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Thyristor-Thyristor Modules

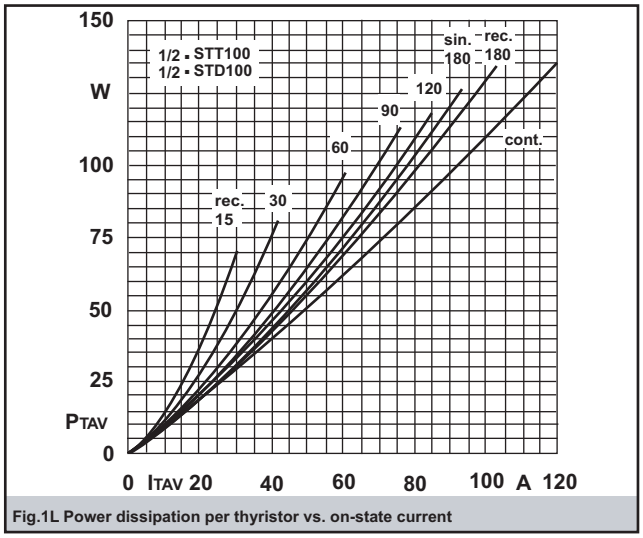

Fig.1L Power dissipation per thyristor vs. on-state current

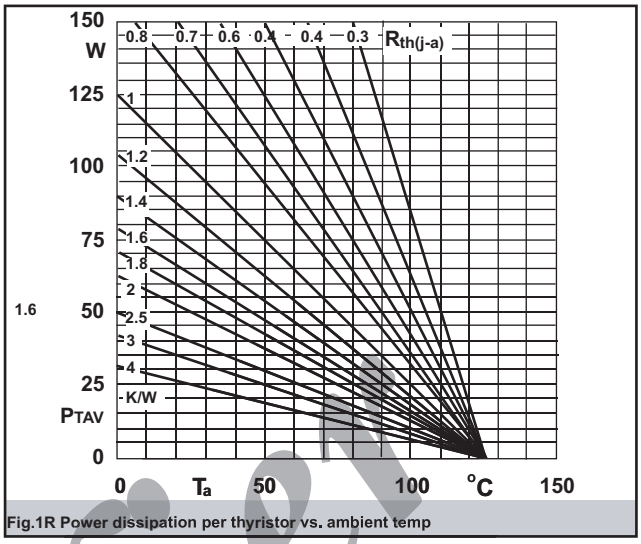

Fig.1R Power dissipation per thyristor vs. ambient temp

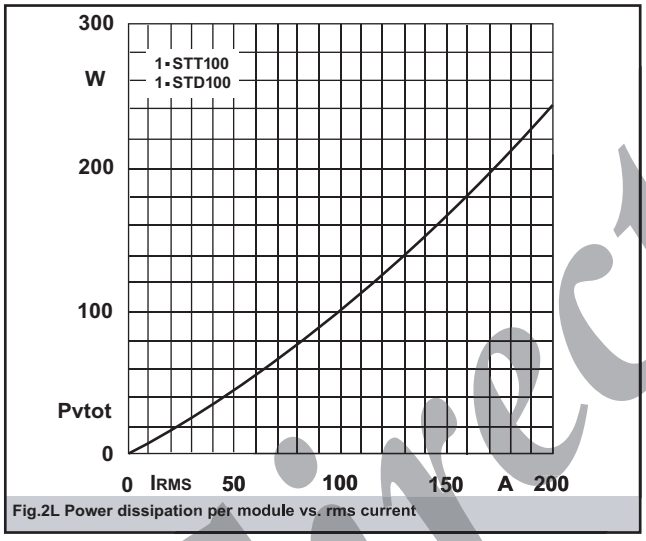

Fig.2L Power dissipation per module vs. rms current

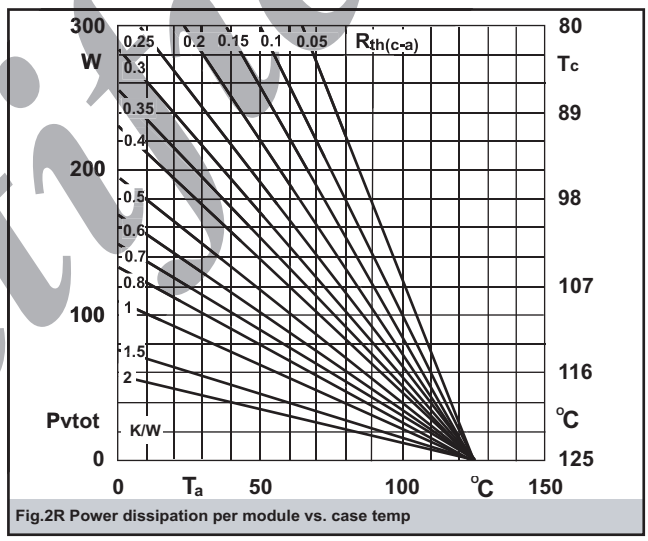

Fig.2R Power dissipation per module vs. case temp

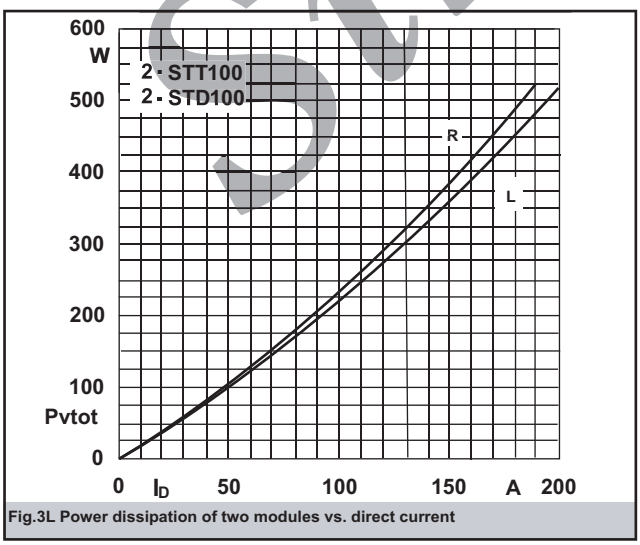

Fig.3L Power dissipation of two modules vs. direct current

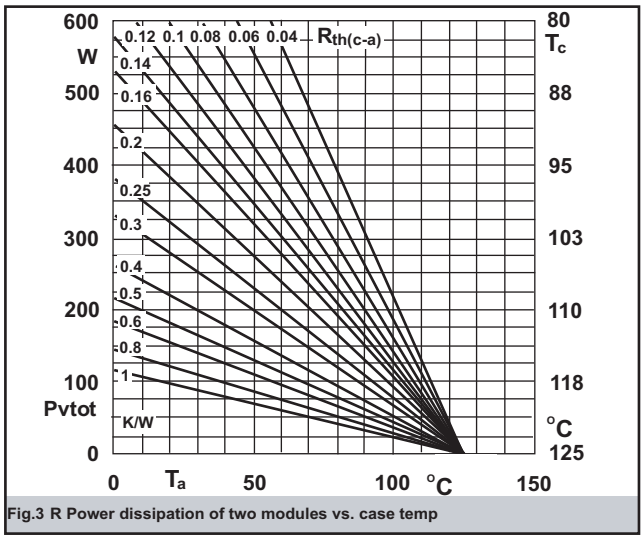

Fig.3 R Power dissipation of two modules vs. case temp

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Thyristor-Thyristor Modules

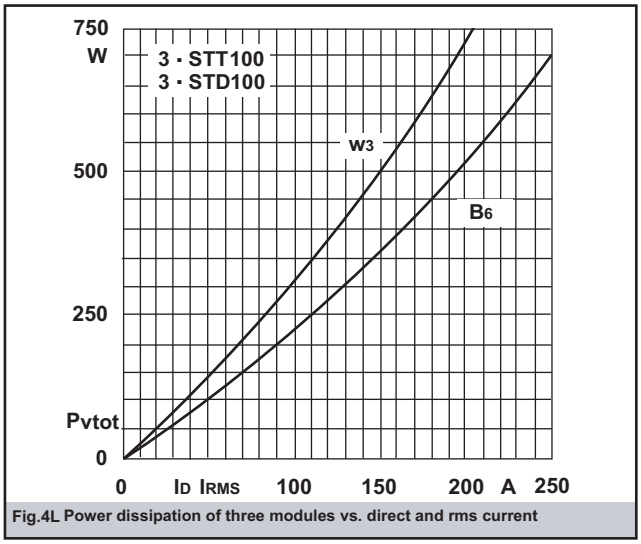

Fig.4L Power dissipation of three modules vs. direct and rms current

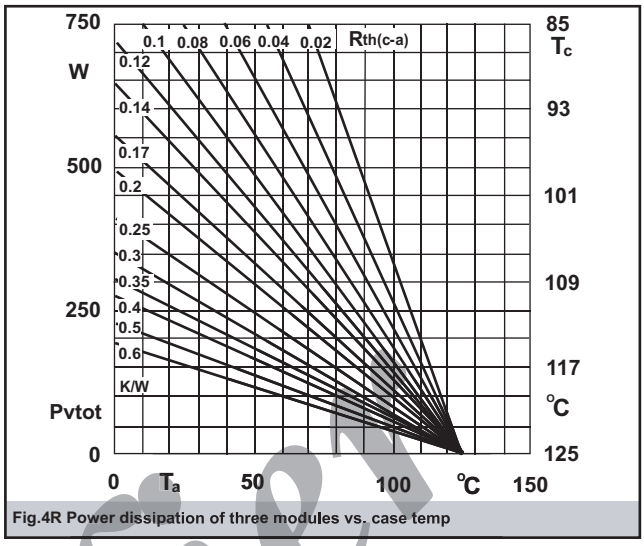

Fig.4R Power dissipation of three modules vs. case temp

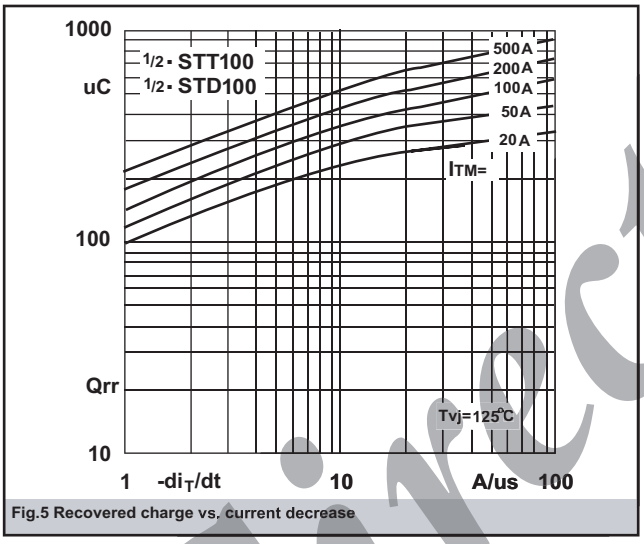

Fig.5 Recovered charge vs. current decrease

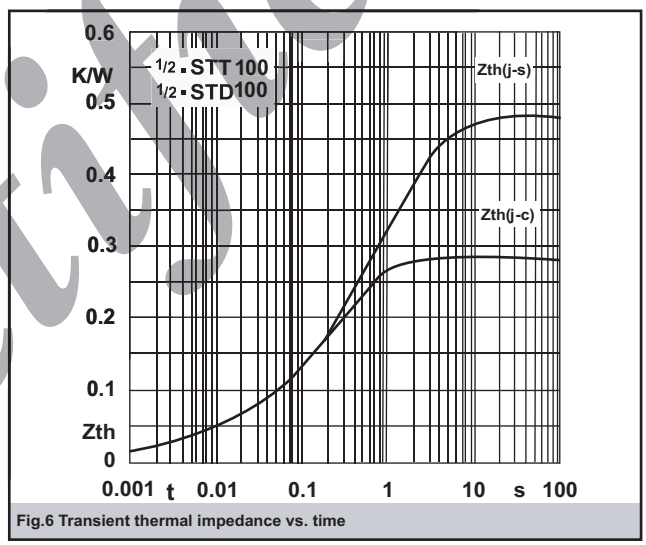

Fig.6 Transient thermal impedance vs. time

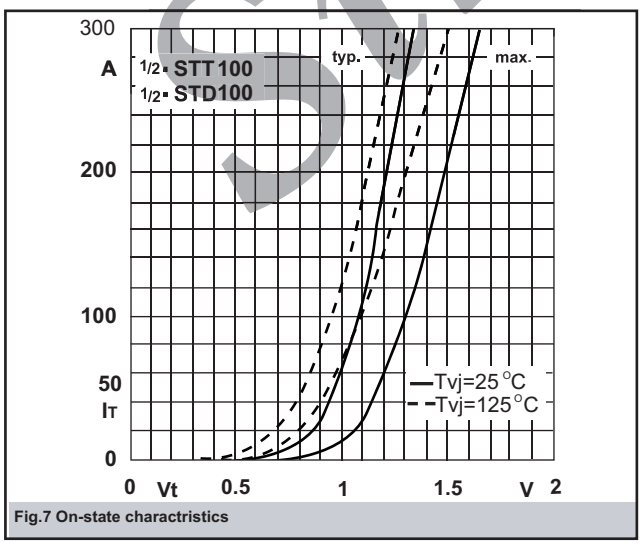

Fig.7 On-state charactristics

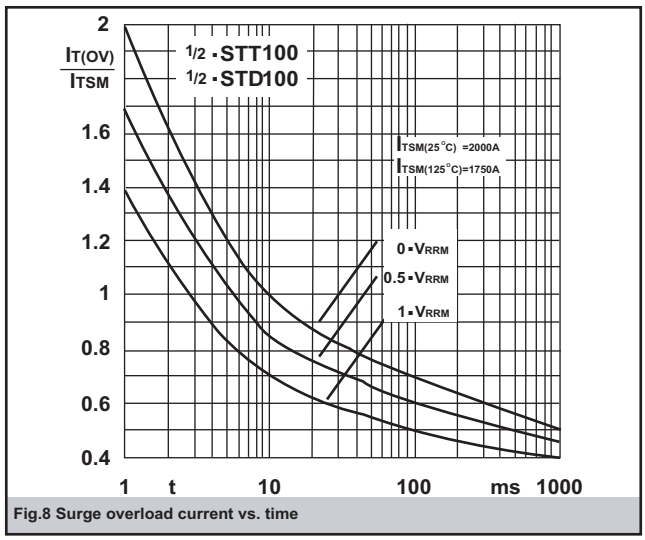

Fig.8 Surge overload current vs. time