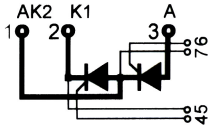


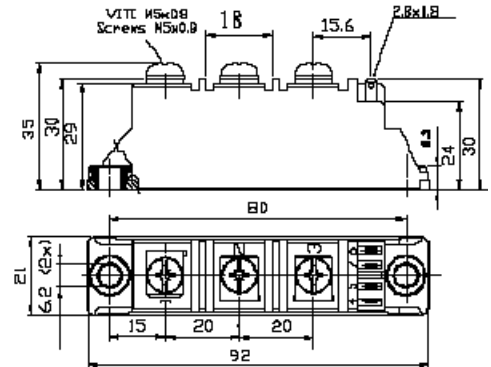
# STT100GKxxB

## Thyristor-Thyristor Modules



Type	$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V
STT100GK08B	900	800
STT100GK12B	1300	1200
STT100GK14B	1500	1400
STT100GK16B	1700	1600
STT100GK18B	1900	1800
STT100GK20B	2100	2000
STT100GK22B	2300	2200

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



Symbol	Test Conditions	Maximum Ratings	Unit
$I_{TRMS}, I_{FRMS}$ $I_{TAVM}, I_{FAVM}$	$T_{VJ}=T_{VJM}$ $T_C=85^\circ\text{C}; 180^\circ$ sine	157 100	A
$I_{TSM}, I_{FSM}$	$T_{VJ}=45^\circ\text{C}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	1700 1800	A
	$T_{VJ}=T_{VJM}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	1540 1640	
$\int i^2 dt$	$T_{VJ}=45^\circ\text{C}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	14450 13500	$\text{A}^2\text{s}$
	$T_{VJ}=T_{VJM}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	11850 11300	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ $f=50\text{Hz}, t_p=200\mu\text{s}$ $V_D=2/3V_{DRM}$ $I_G=0.45\text{A}$ $di_G/dt=0.45\text{A}/\mu\text{s}$ repetitive, $I_T=250\text{A}$	150	A/ $\mu\text{s}$
	non repetitive, $I_T=I_{TAVM}$	500	
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM};$ $R_{GK}=\infty;$ method 1 (linear voltage rise) $V_{DR}=2/3V_{DRM}$	1000	V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ}=T_{VJM}$ $I_T=I_{TAVM}$ $t_p=30\mu\text{s}$ $t_p=300\mu\text{s}$	10	W
		5	
$P_{GAV}$		0.5	W
$V_{RGM}$		10	V
$T_{VJ}$ $T_{VJM}$ $T_{stg}$		-40...+125	$^\circ\text{C}$
		125	
		-40...+125	
$V_{ISOL}$	50/60Hz, RMS $I_{ISOL}\leq 1\text{mA}$ $t=1\text{min}$ $t=1\text{s}$	3000	V~
		3600	
$M_d$	Mounting torque (M5) Terminal connection torque (M5)	2.5-4.0/22-35	Nm/lb.in.
		2.5-4.0/22-35	
Weight	Typ.	110	g



# STT100GKxxB

## Thyristor-Thyristor Modules

Symbol	Test Conditions	Characteristic Values	Unit
$I_{RRM}, I_{DRM}$	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	15	mA
$V_{TM}$	$I_{TM}=300A; T_{VJ}=25^{\circ}C$	1.75	V
$V_{TO}$	For power-loss calculations only ( $T_{VJ}=T_{VJM}$ )	0.85	V
$r_T$		3.2	m $\Omega$
$V_{GT}$	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	1.5 max 1.6 max	V
$I_{GT}$	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	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
$I_L$	$T_{VJ}=25^{\circ}C; t_p=30\mu s; V_D=6V$ $I_G=0.45A; di_G/dt=0.45A/\mu s$	200	mA
$I_H$	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$	150	mA
$t_{gd}$	$T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$ $I_G=0.45A; di_G/dt=0.45A/\mu s$	2	$\mu s$
$t_q$	$T_{VJ}=T_{VJM}; I_T=150A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=20V/\mu s; V_D=2/3V_{DRM}$	185	$\mu s$
$Q_s$	$T_{VJ}=T_{VJM}; I_T, I_F=50A; -di/dt=6A/\mu s$	170	$\mu C$
$I_{RM}$		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
$d_s$	Creeping distance on surface	12.7	mm
$d_A$	Creepage distance in air	9.6	mm
$a$	Maximum allowable acceleration	50	m/s <sup>2</sup>

### FEATURES

- \* International standard package
- \* Copper 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

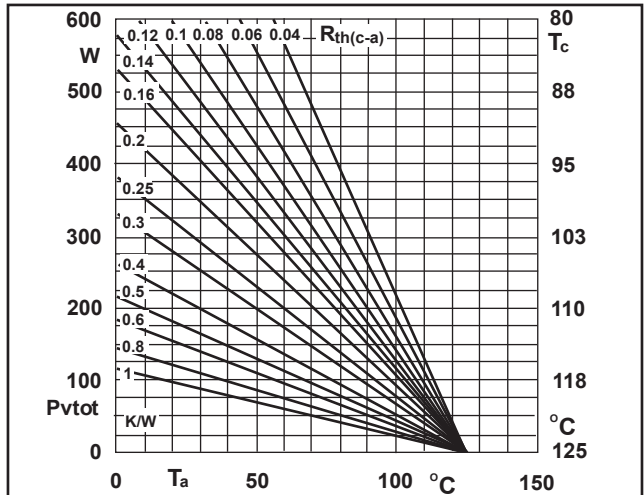
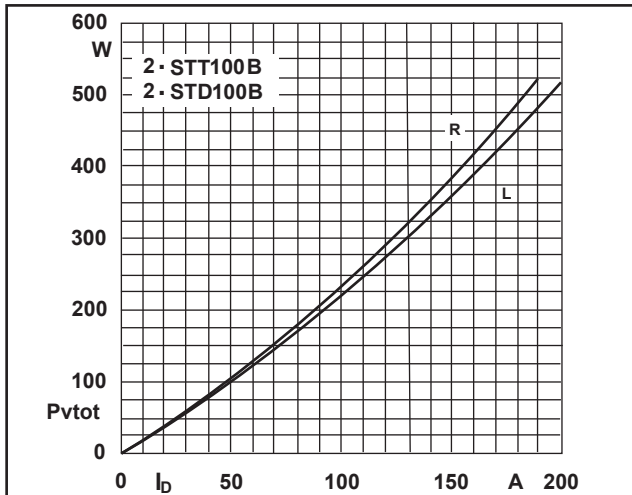
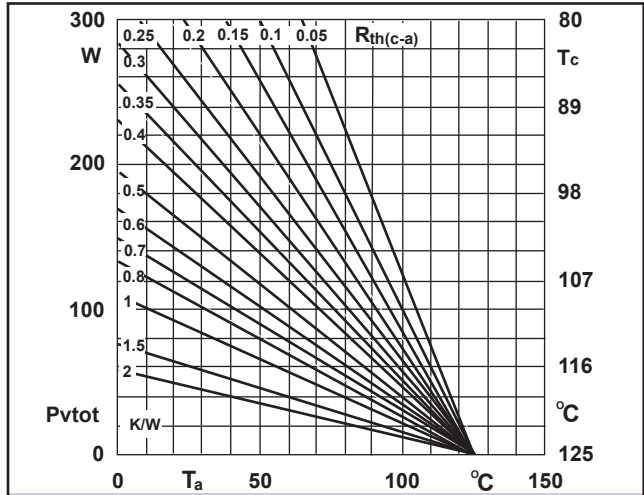
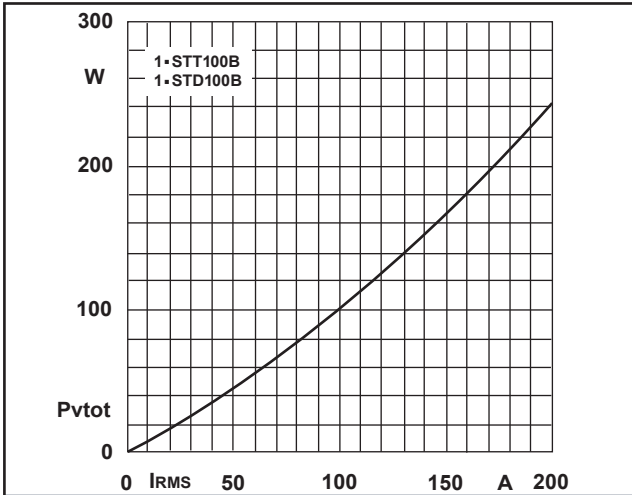
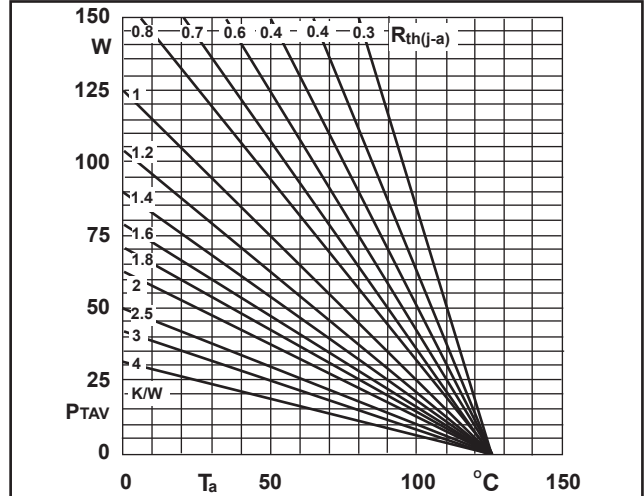
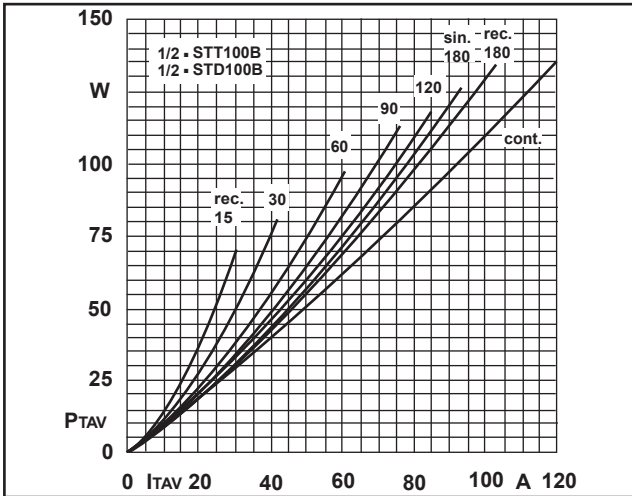
### ADVANTAGES

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



# STT100GKxxB

## Thyristor-Thyristor Modules



# STT100KxxB

## Thyristor-Thyristor Modules

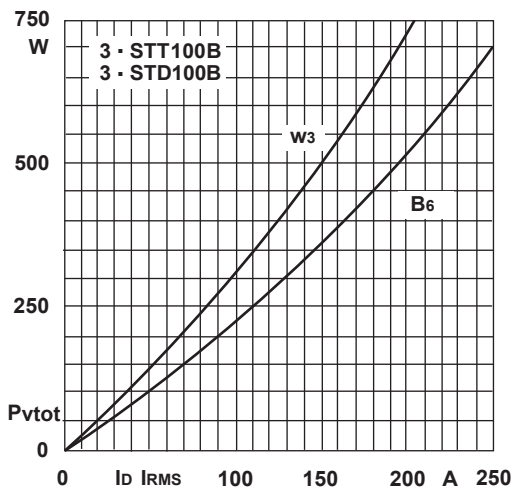


Fig.4L Power dissipation of three modules vs. direct and rms current

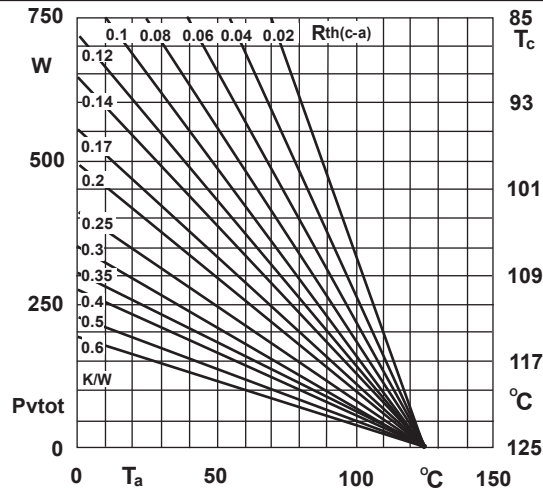


Fig.4R Power dissipation of three modules vs. case temp

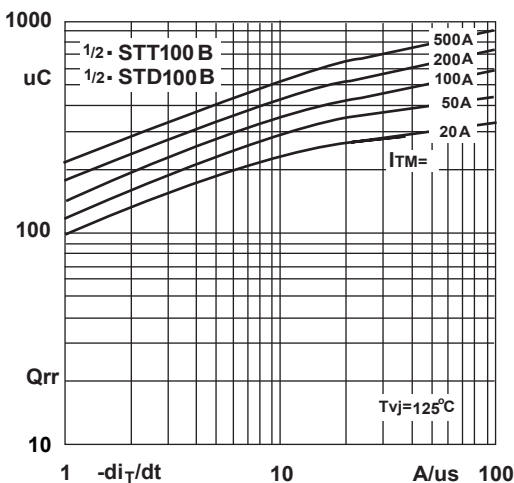


Fig.5 Recovered charge vs. current decrease

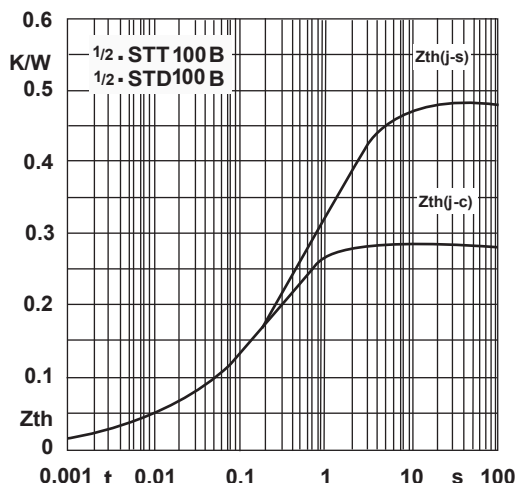


Fig.6 Transient thermal impedance vs. time

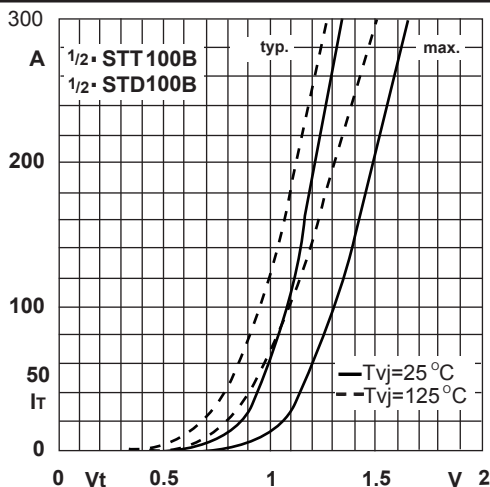


Fig.7 On-state characteristics

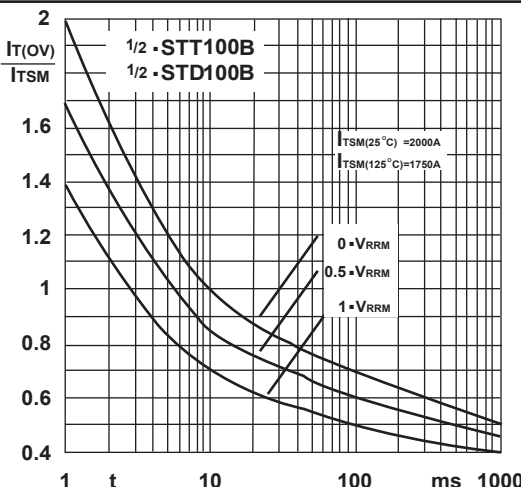


Fig.8 Surge overload current vs. time

