



# STT130GKXXB

## Thyristor-Thyristor Modules

Symbol	Test Conditions	Characteristic Values	Unit
<b>I<sub>RRM</sub>, I<sub>DRM</sub></b>	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	10	mA
<b>V<sub>T</sub>, V<sub>F</sub></b>	$I_T, I_F=390A; T_{VJ}=25^{\circ}C$	1.56	V
<b>V<sub>TO</sub></b>	For power-loss calculations only ( $T_{VJ}=125^{\circ}C$ )	0.8	V
<b>r<sub>T</sub></b>		1.5	mΩ
<b>V<sub>GT</sub></b>	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	2.5 2.6	V
<b>I<sub>GT</sub></b>	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	150 200	mA
<b>V<sub>GD</sub></b>	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.2	V
<b>I<sub>GD</sub></b>		10	mA
<b>I<sub>L</sub></b>	$T_{VJ}=25^{\circ}C; t_p=30\mu s; V_D=6V$ $I_G=0.5A; di_G/dt=0.5A/\mu s$	300	mA
<b>I<sub>H</sub></b>	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$	200	mA
<b>t<sub>gd</sub></b>	$T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$ $I_G=0.5A; di_G/dt=0.5A/\mu s$	2	us
<b>t<sub>q</sub></b>	$T_{VJ}=T_{VJM}; I_T=160A; t_p=200\mu s; -di/dt=10A/\mu s$ $V_R=100V; dv/dt=20V/\mu s; V_D=2/3V_{DRM}$	150	us
<b>Q<sub>s</sub></b>	$T_{VJ}=T_{VJM}; I_T, I_F=300A; -di/dt=50A/\mu s$	550	uC
<b>I<sub>RM</sub></b>		235	A
<b>R<sub>thJC</sub></b>	per thyristor/diode; DC current per module	0.23 0.115	K/W
<b>R<sub>thJK</sub></b>	per thyristor/diode; DC current per module	0.33 0.165	K/W
<b>d<sub>s</sub></b>	Creeping distance on surface	12.7	mm
<b>d<sub>A</sub></b>	Strike distance through air	9.6	mm
<b>a</b>	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.E310749
- \* 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

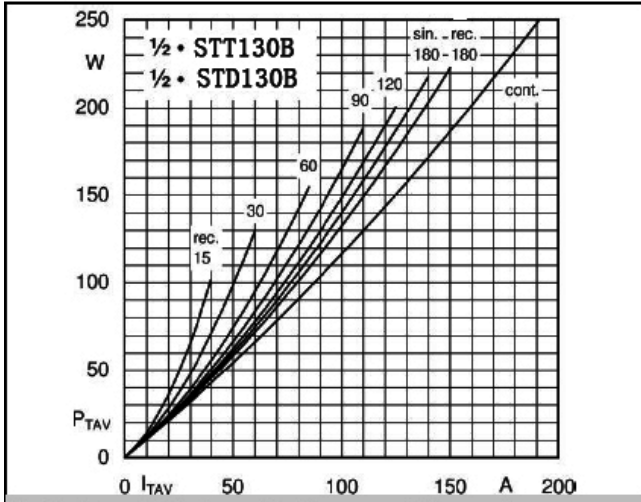


Fig. 1L Power dissipation per thyristor vs. on-state current

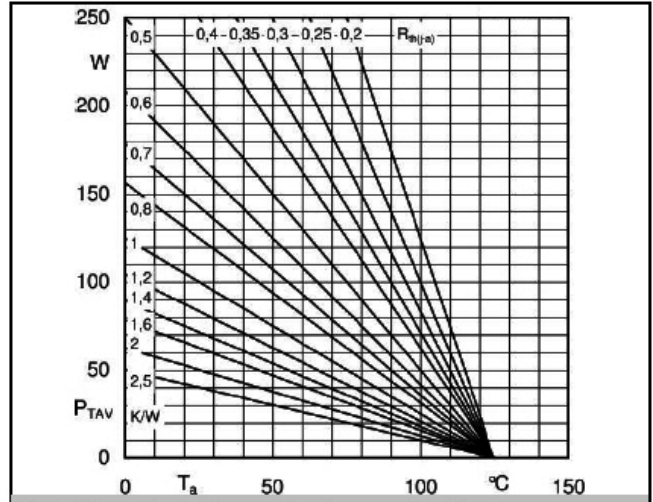


Fig. 1R Power dissipation per thyristor vs. ambient temp.

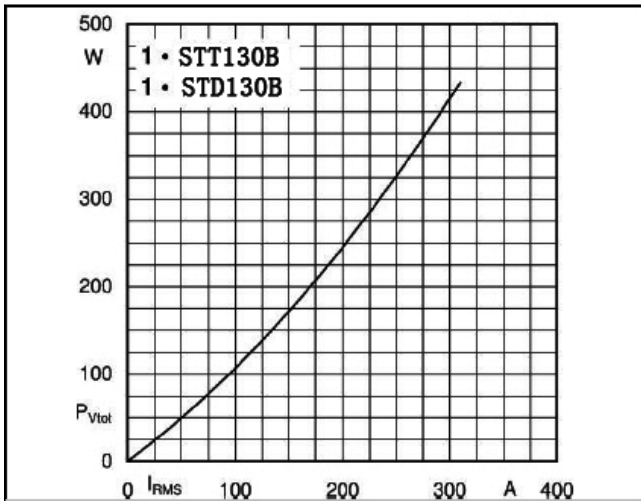


Fig. 2L Power dissipation per module vs. rms current

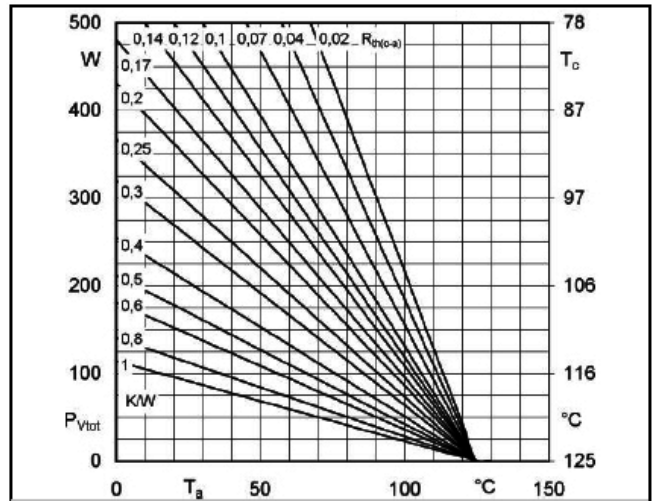


Fig. 2R Power dissipation per module vs. case temp.

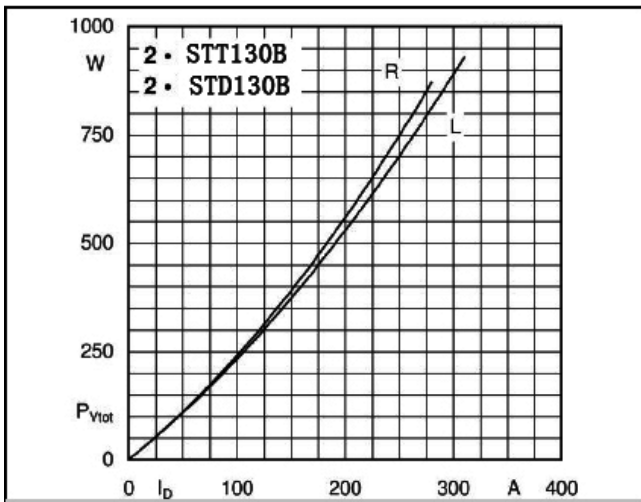


Fig. 3L Power dissipation of two modules vs. direct current

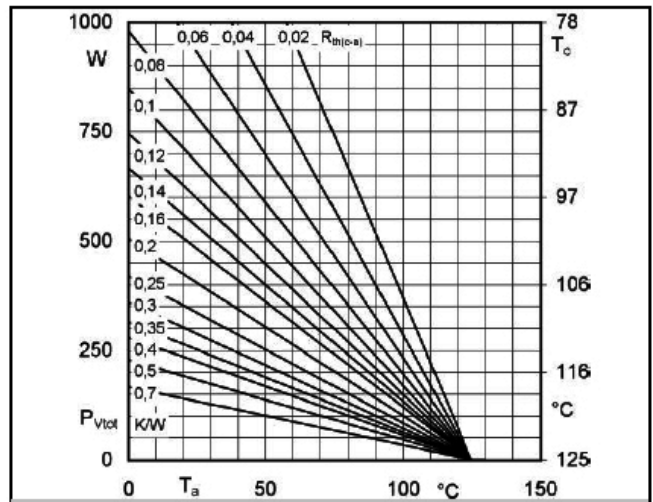


Fig. 3R Power dissipation of two modules vs. case temp.

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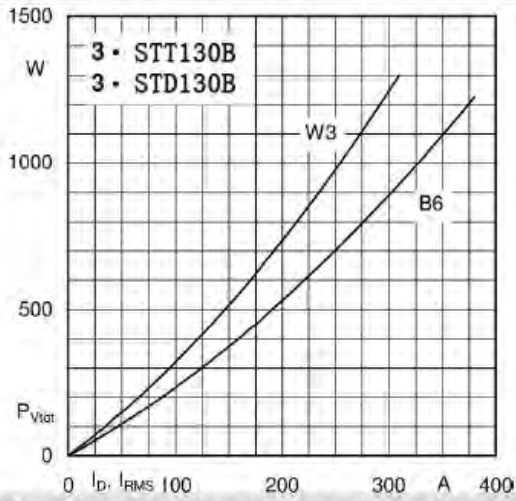


Fig. 4L Power dissipation of three modules vs. direct and rms current

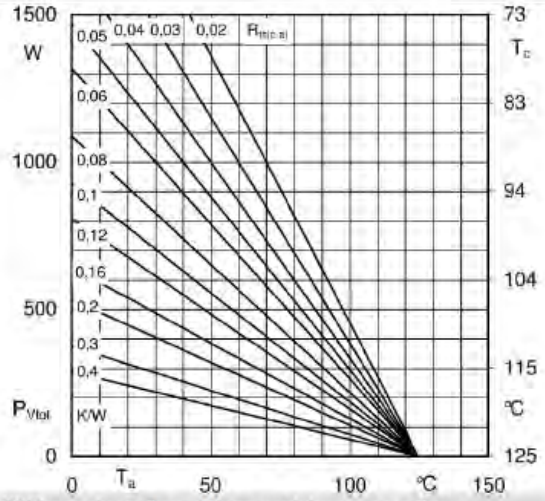


Fig. 4R Power dissipation of three modules vs. case temp.

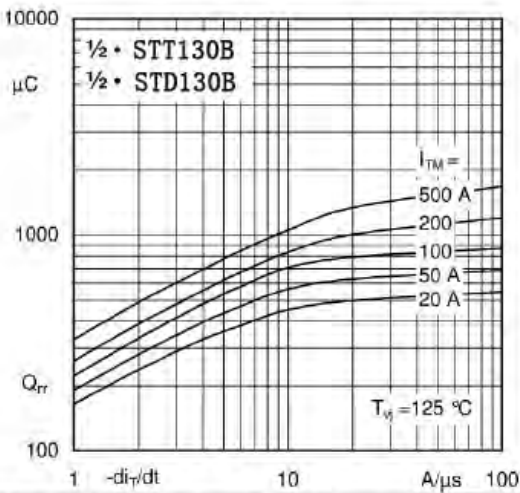


Fig. 5 Recovered charge vs. current decrease

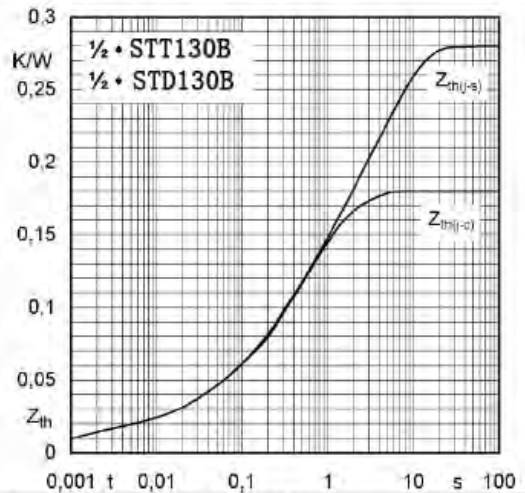


Fig. 6 Transient thermal impedance vs. time

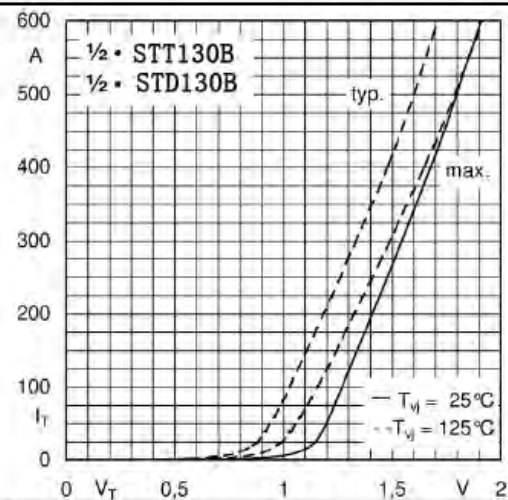


Fig. 7 On-state characteristics

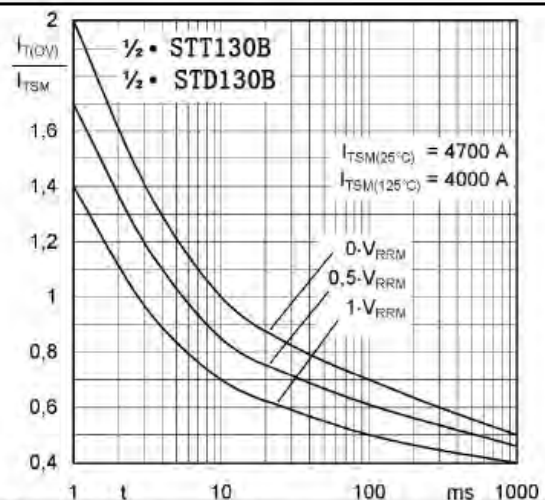


Fig. 8 Surge overload current vs. time