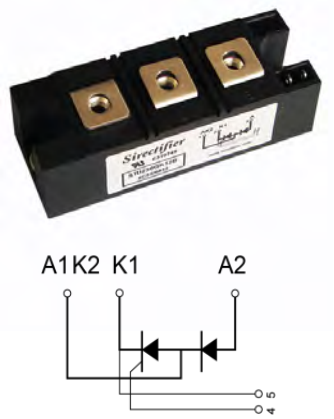
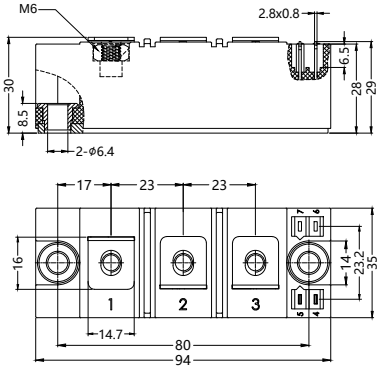
STD130GKXXB

Thyristor-Diode Modules



Type	V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V
STD130GK08B	900	800
STD130GK12B	1300	1200
STD130GK14B	1500	1400
STD130GK16B	1700	1600
STD130GK18B	1900	1800

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		300 130	A
I_{TSM}, I_{FSM}	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	5500 5850	A
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	4800 5100	
$\int i^2dt$	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	151000 142000	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	115000 108000	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ 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=500A	150 500	A/us
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$; $V_{DR}=2/3V_{DRM}$ $R_{GK}=\infty$; method 1 (linear voltage rise)		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	Typical		173	g

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STD130GKXXB

Thyristor-Diode Modules

Symbol	Test Conditions	Characteristic Values	Unit
I_{RRM}, I_{DRM}	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$	10	mA
V_T, V_F	I_T, I_F=390A; T_{VJ}=25°C	1.56	V
V_{TO}	For power-loss calculations only (T_{VJ}=125°C)	0.8	V
r_T		1.5	mΩ
V_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C	2.5 2.6	V
I_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C	150 200	mA
V_{GD}	$T_{VJ}=T_{VJM}$; V_D=2/3V_{DRM}	0.2	V
I_{GD}		10	mA
I_L	T_{VJ}=25°C; t_p=30us; V_D=6V I_G=0.5A; di_G/dt=0.5A/us	300	mA
I_H	T_{VJ}=25°C; V_D=6V; R_{GK}=∞	200	mA
t_{gd}	T_{VJ}=25°C; 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	0.23 0.115	K/W
R_{thJK}	per thyristor/diode; DC current per module	0.33 0.165	K/W
d_S	Creeping distance on surface	12.7	mm
d_A	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s^2

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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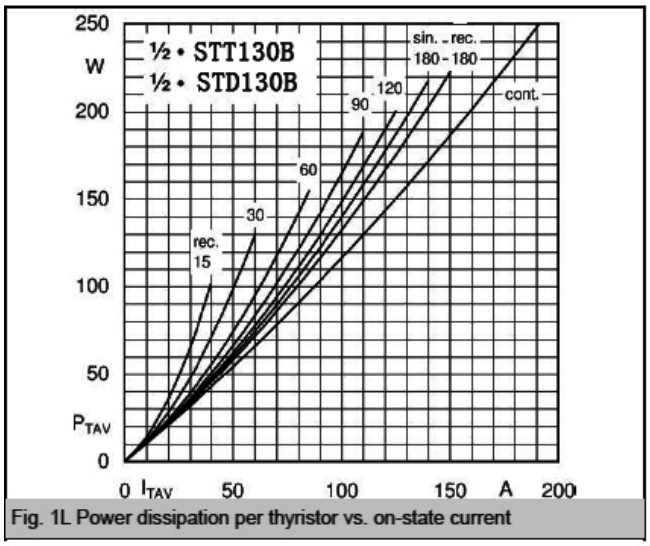

Fig. 1L Power dissipation per thyristor vs. on-state current

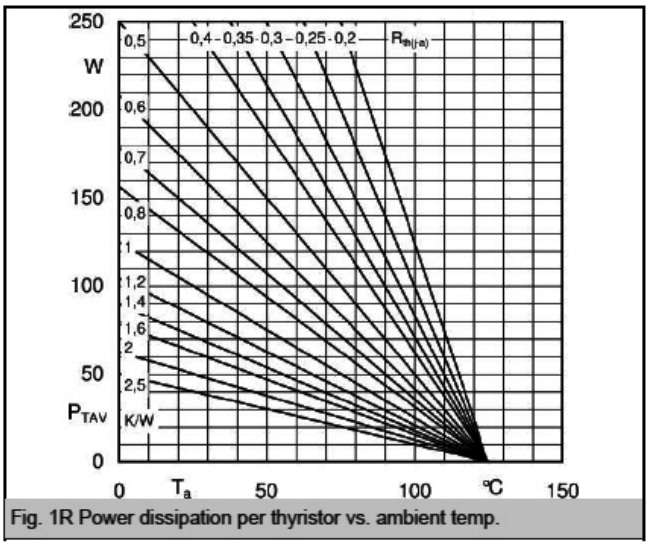

Fig. 1R Power dissipation per thyristor vs. ambient temp.

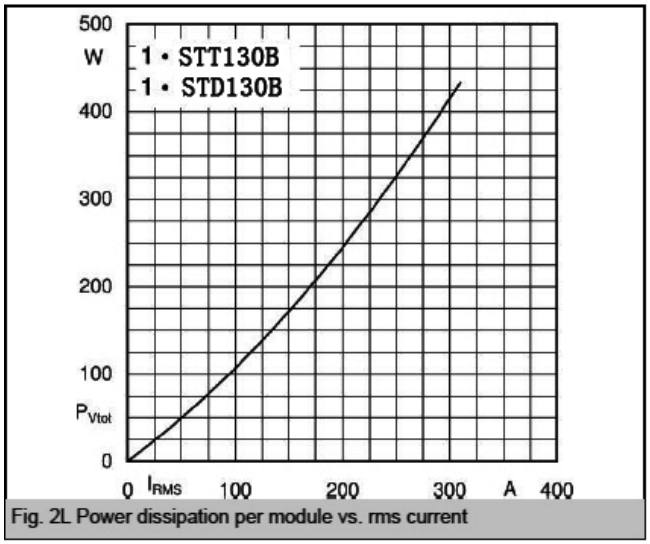

Fig. 2L Power dissipation per module vs. rms current

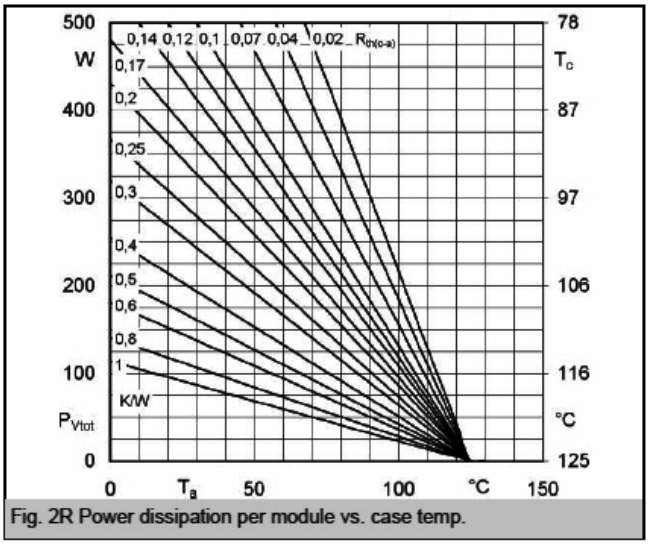

Fig. 2R Power dissipation per module vs. case temp.

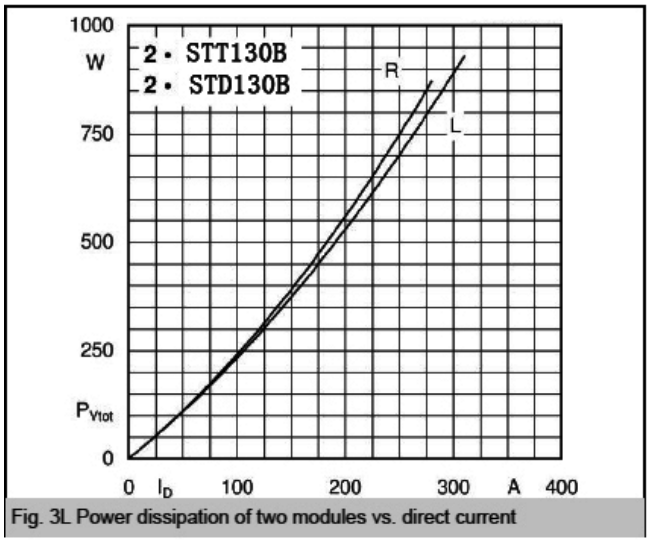

Fig. 3L Power dissipation of two modules vs. direct current

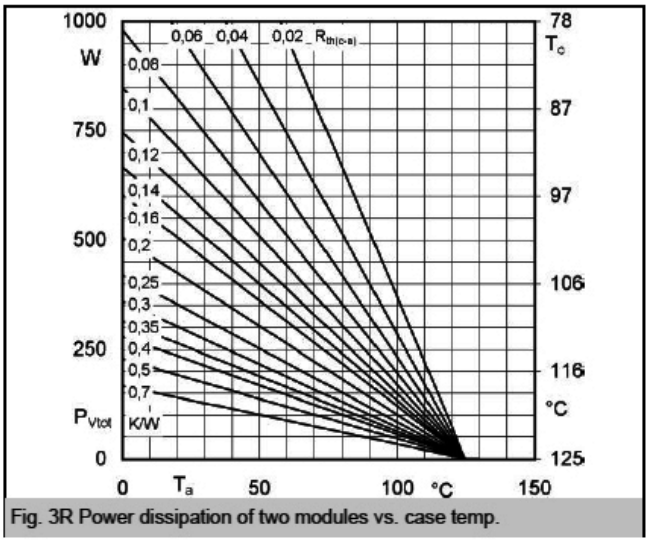

Fig. 3R Power dissipation of two modules vs. case temp.

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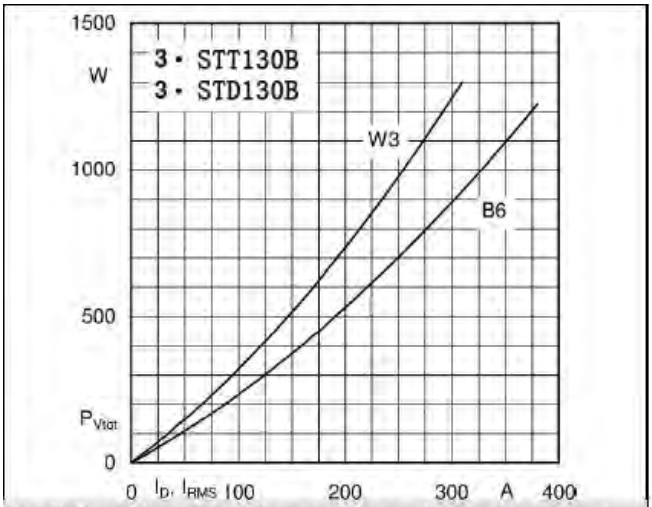

Fig. 4L Power dissipation of three modules vs. direct and rms current

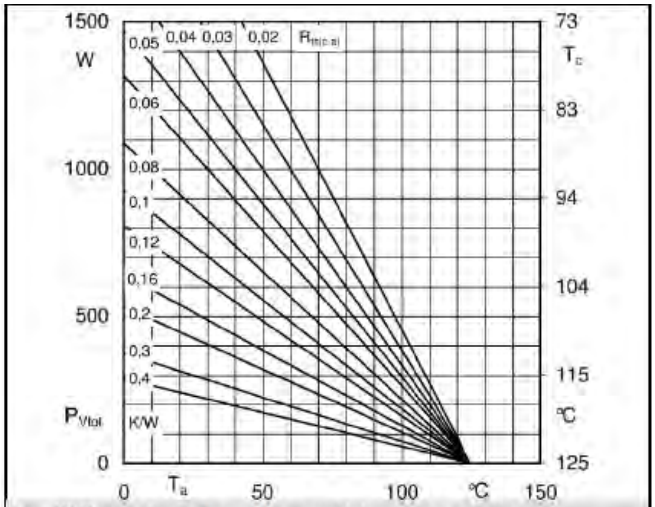

Fig. 4R Power dissipation of three modules vs. case temp.

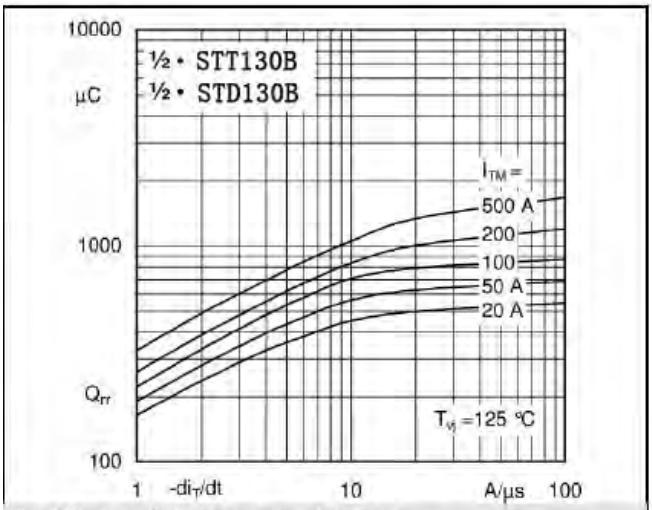

Fig. 5 Recovered charge vs. current decrease

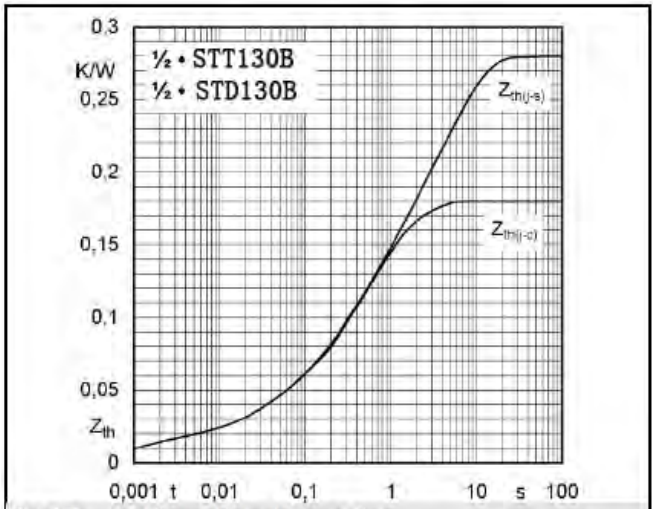

Fig. 6 Transient thermal impedance vs. time

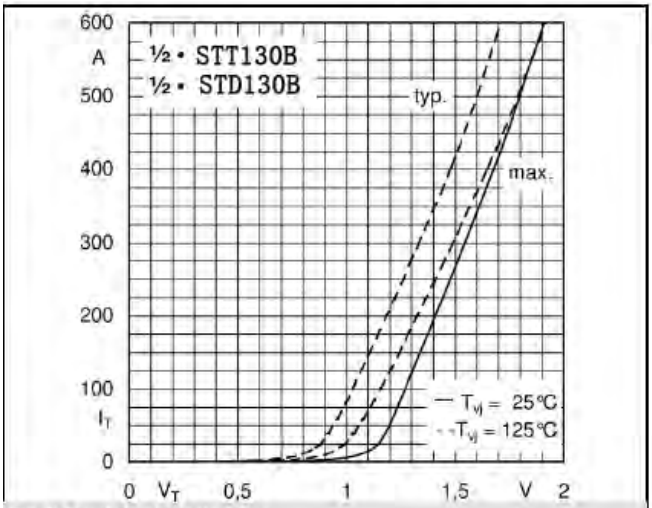

Fig. 7 On-state characteristics

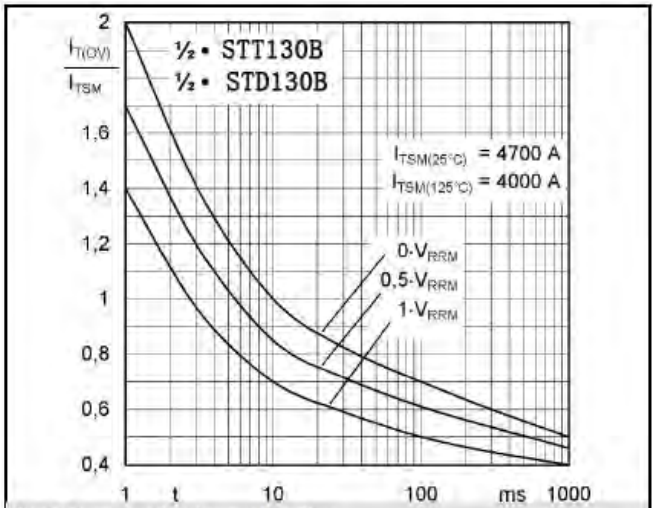

Fig. 8 Surge overload current vs. time

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