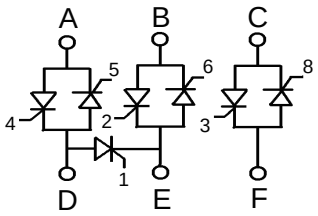
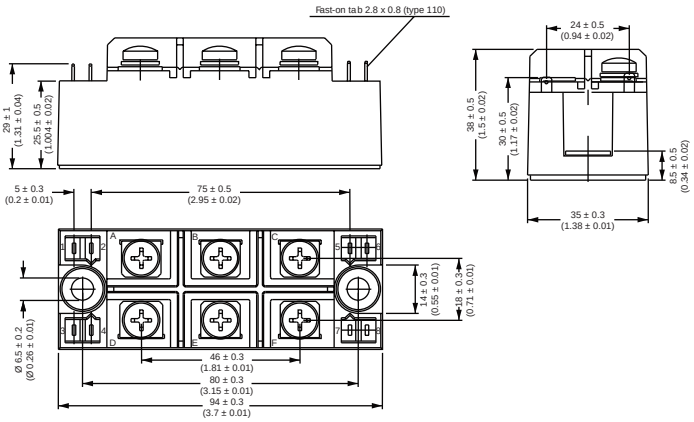
S3SSAC70G16TB

Three Phase Solid State AC Switch Modules



Dimensions in mm (1mm=0.0394")



Type	V_{RSM} V	V_{RRM} V
S3SSAC70G08TB	900	800
S3SSAC70G12TB	1300	1200
S3SSAC70G16TB	1700	1600
S3SSAC70G18TB	1900	1800

Symbol	Test Conditions		Maximum Ratings	Unit
I_{TRMS} I_{TAVM}	$T_{VJ}=T_{VJM}$ $T_C=85^oC$; 180° sine		110 70	A
I_{TSM}	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1280 1350	A
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1150 1230	
I^2t	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	7500 8100	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	5600 5250	
$(di/dt)_{cr}$	$T_{VJ}=125^oC$ f=50Hz, t_p=200us $V_D=2/3V_{DRM}$ I_G=0.3A di_G/dt=0.3A/us	repetitive, I_T=250A non repetitive, $I_T=I_{TAVM}$	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=300us t_p = 10ms	10 5 0.5	W
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	2500 3000	V~
M_d	Mounting torque (M5) (10-32 UNF)		5 ± 15 % 44 ± 15 %	Nm/lb.in.
Weight			250	g

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Symbol	Test Conditions	Characteristic Values	Unit
I_D,I_R	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$	5	mA
V_T, V_F	I_T, I_F=210A;T_{VJ}=25°C	1.65	V
V_{TO}	For power-loss calculations only	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}	0.2	V
I_{GD}		5	mA
I_L	T_{VJ}=25°C; t_p=10us I_G=0.45A; di_G/dt=0.45A/us	450	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=0.45A; di_G/dt=0.45A/us	2	us
t_q	$T_{VJ}=T_{VJM}$; I_T=20A; t_p=200us; -di/dt=10A/us typ. V_R=100V; dv/dt=15V/us; V_D=2/3V_{DRM}	185	us
I_{RM}		45	A
R_{thJC}	per thyristor/diode; DC current per module	0.42 0.07	K/W
R_{thJK}	per thyristor/diode; DC current per module	0.62 0.11	K/W
d_S	Creeping distance on surface	12.5	mm
d_A	Strike distance through air	7.5	mm
a	Maximum allowable acceleration	50	m/s^2

FEATURES

1. Thyristor controller for AC for mains frequency
2. Isolation voltage 3000 VAC
3. Package with metal base plate

APPLICATIONS

- Switching and control of three phase AC circuits
- Light and temperature control
- Softstart AC motor controller
4. Solid state switches

ADVANTAGES

1. Easy to mount with two screws
2. Space and weight savings
3. Improved temperature and power cycling capability
4. High power density

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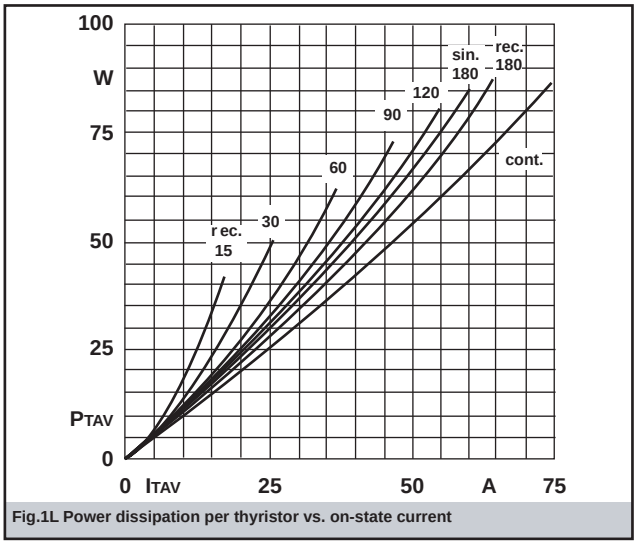

Fig.1L Power dissipation per thyristor vs. on-state current

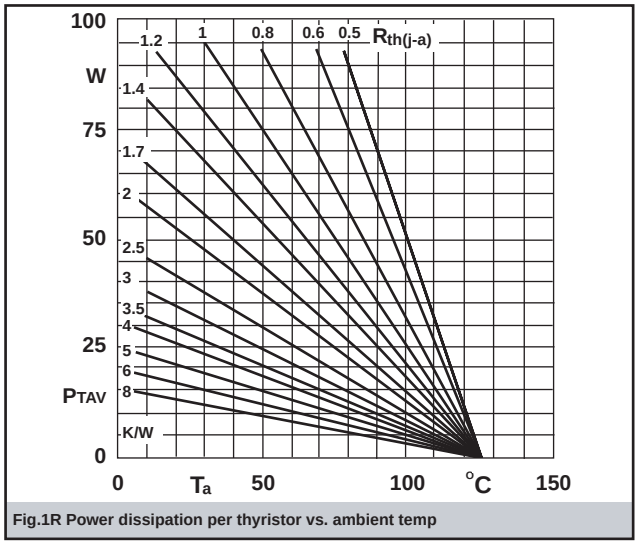

Fig.1R Power dissipation per thyristor vs. ambient temp

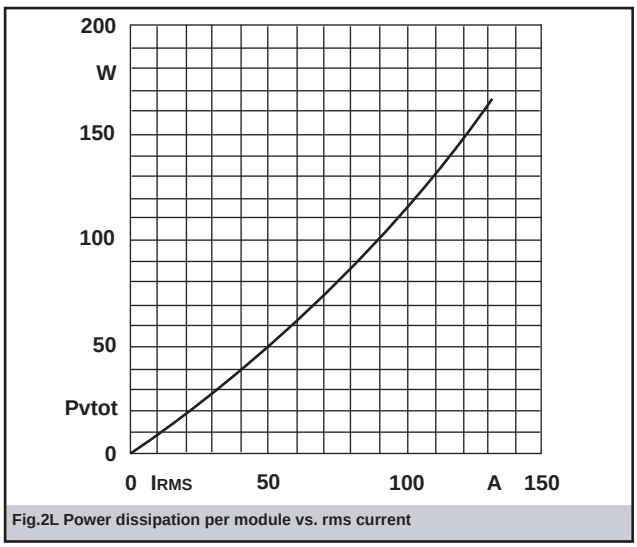

Fig.2L Power dissipation per module vs. rms current

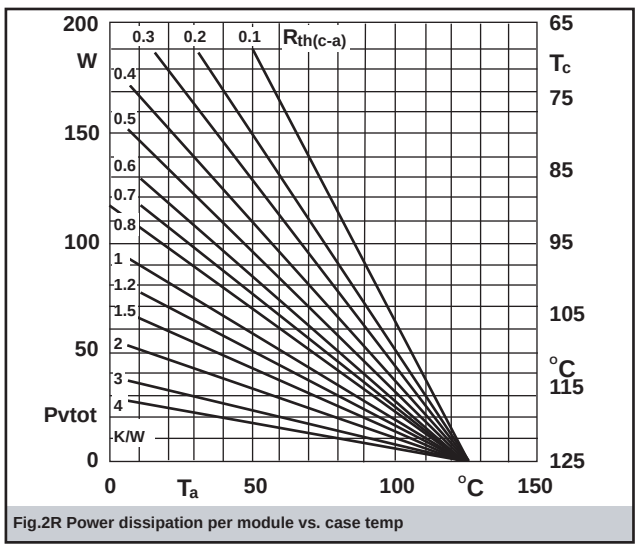

Fig.2R Power dissipation per module vs. case temp

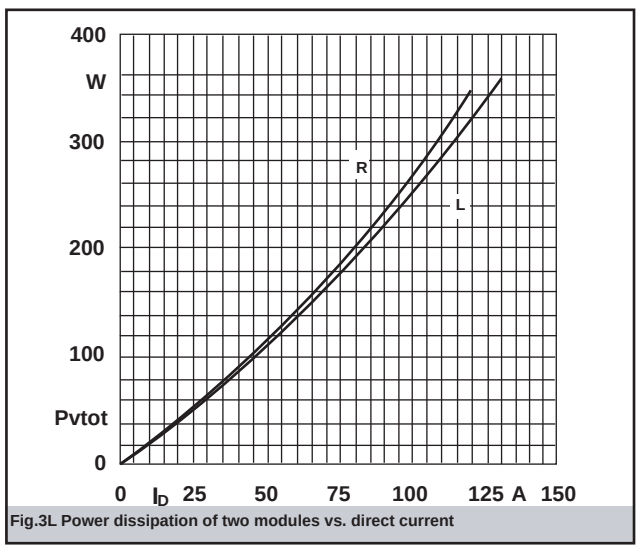

Fig.3L Power dissipation of two modules vs. direct current

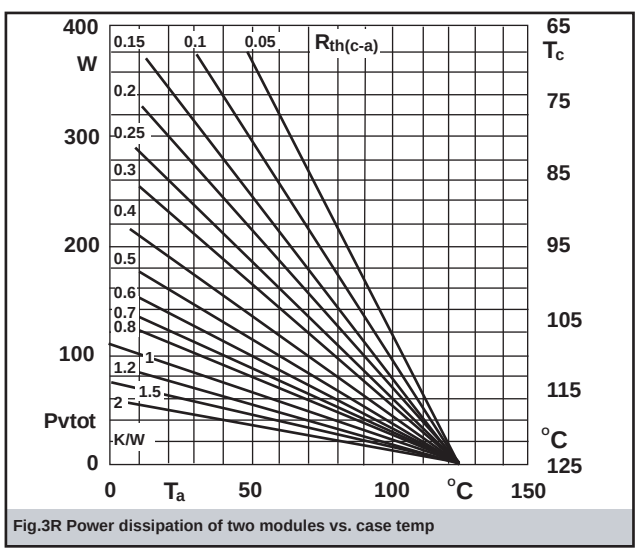

Fig.3R Power dissipation of two modules vs. case temp

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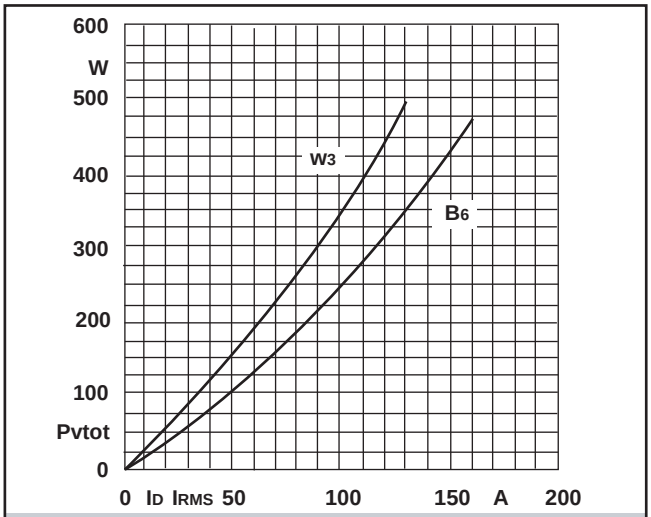

Fig.4L Power dissipation of three modules vs. direct and rms current

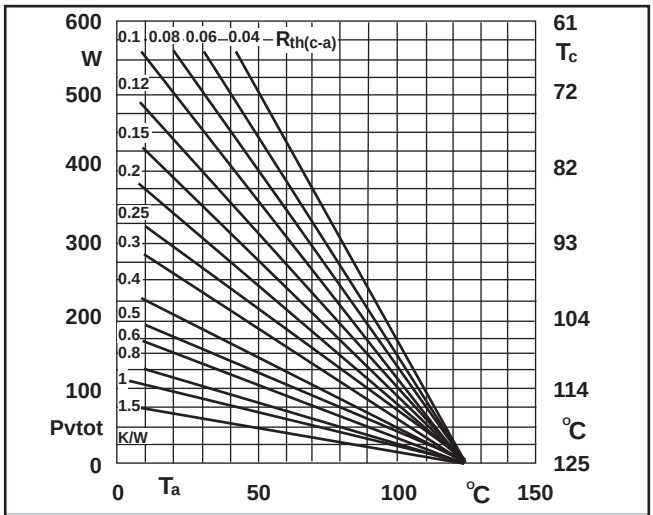

Fig.4R Power dissipation of three modules vs. case temp

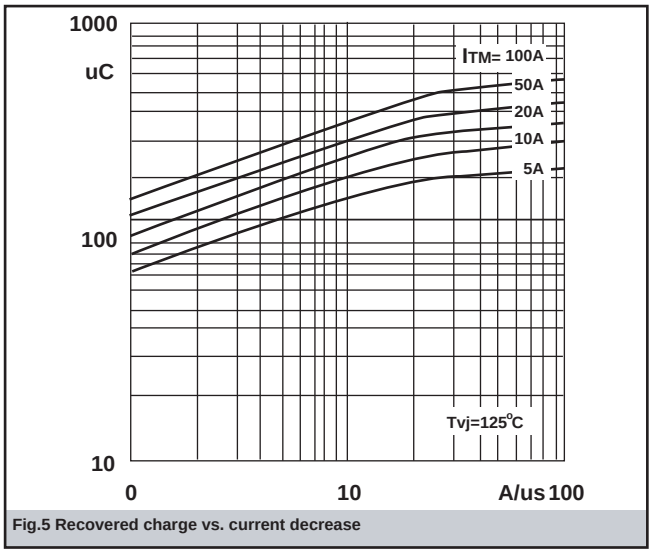

Fig.5 Recovered charge vs. current decrease

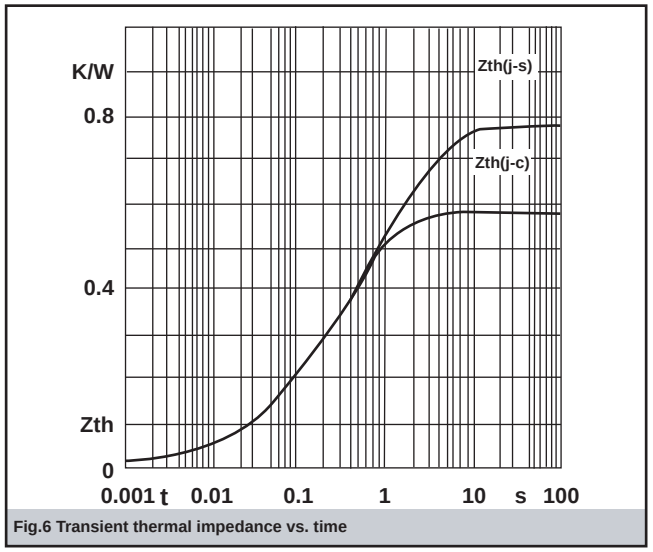

Fig.6 Transient thermal impedance vs. time

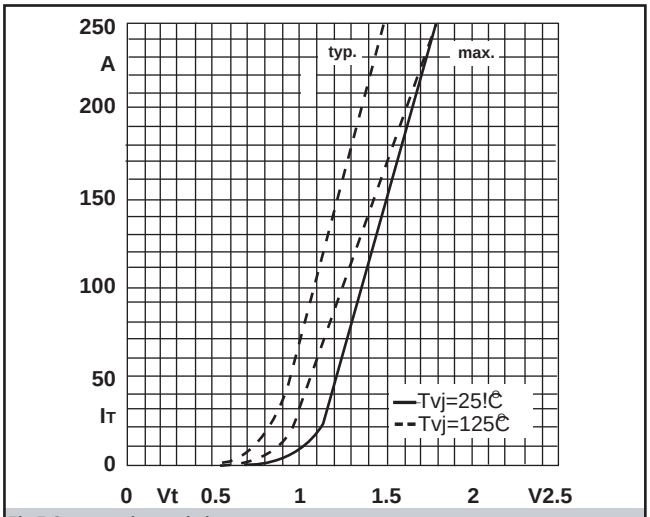

Fig.7 On-state charactristics

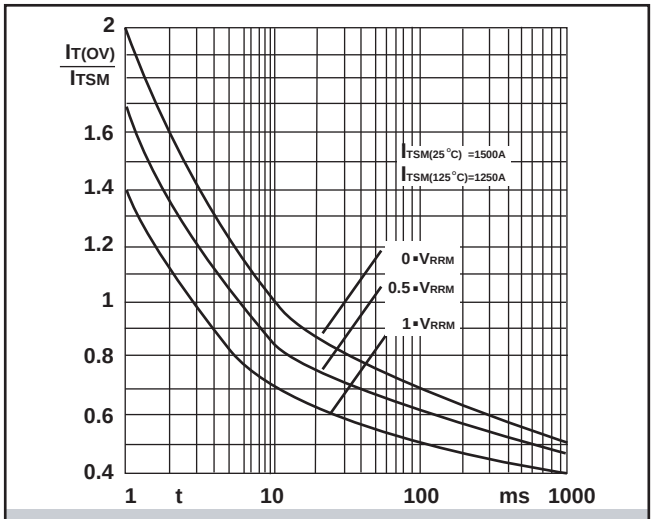

Fig.8 Surge overload current vs. time

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