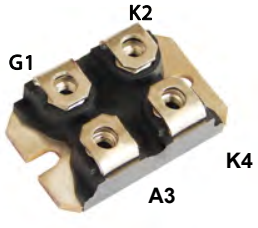
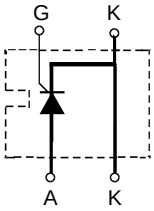
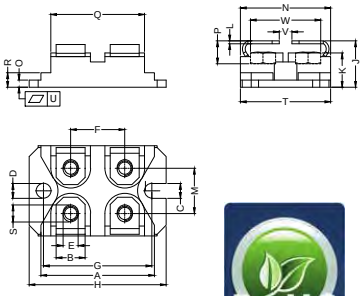
STO75GK12S

Single Thyristor Modules





Dimensions SOT-227



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	31.30	31.65	M	12.00	13.00
B	7.80	8.40	N	25.15	25.65
C	4.00	4.30	O	1.95	2.15
D	Ø4.00	Ø4.30	P	5.60	6.60
E	4.00	4.30	Q	25.30	26.30
F	14.90	15.20	R	3.90	4.30
G	30.10	30.30	S	4.45	4.85
H	38.00	38.50	T	24.50	25.10
J	12.10	12.90	U	0.05	0.10
K	9.00	9.60	V	3.00	4.80
L	0.75	0.85	W	19.30	20.50

Type	V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V
STO75GK12S	1300	1200

Symbol	Test Conditions		Maximum Ratings	Unit
I_{TRMS} I_{TAVM}	T_{VJ}= T_{VJM} T_C = 80°C; (180°sine)		118 75	A
I_{TSM}	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1070 1160	A
	T_{VJ}=T_{VJM} V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	910 980	
I^2t	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	5730 5550	A^2s
	T_{VJ}=T_{VJM} V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	4140 4000	
$(di/dt)_{cr}$	T_{VJ}=T_{VJM} f=50Hz, t_p=200us V_D=2/3V_{DRM} I_G=0.3A di_G/dt=0.3A/us	repetitive, I_T=75A non repetitive, I_T=225A	150 500	A/us
$(dv/dt)_{cr}$	T_{VJ}=T_{VJM}; R_{GK}=∞ ; method 1 (linear voltage rise)	V_{DR}=2/3V_{DRM}	1000	V/us
P_{GM} P_{GAVM}	T_{VJ}=T_{VJM} I_T=I_{TAVM}	t_p=30us t_p=300us	10 5 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}≤1mA		2500	V~
M_d	Mounting torque (M4) Terminal connection torque (M4)		1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in.
Weight	typical		30	g

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STO75GKxxS

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Symbol	Test Conditions	Characteristic Values	Unit
I_R, I_D	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$	≤1	mA
V_T	I_T=75A; T_{VJ} =25°C	≤1.28	V
V_{TO}	For power-loss calculations only	≤0.85	V
r_T		≤5.5	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 ≤150	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=0.3A; di_G/dt=0.3A/us	≤450	
I_H	T_{VJ}=25°C; V_D=6V; R_{GK}=∞	≤200	
t_{gd}	T_{VJ}=25°C; V_D=1/2V_{DRM} I_G=0.3A; di_G/dt=0.3A/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}	≤150	
R_{thJC}	DC current	≤0.45	K/W
R_{thCH}	DC current	≤0.10	
d_S	Creeping distance on surface	≤8	mm
d_A	Creepage distance in air	≤4	
a	Max. allowable acceleration	≤50	m/s^2

FEATURES

*Thyristor controller for AC for mains frequency
*International standard package SOT-227B(ISOTOP compatible)
*Isolation voltage 2500V~
*Glass passivated chips
*UL File NO. E310749
*RoHS compliant

APPLICATIONS

*Switching and control of single and three phase AC Softstart
*AC motor controller
*Solid states witches
*Light and temperature control

ADVANTAGES

*Easy to mount with two screws
*Space and weight savings
*Improved temperature and power cycling
*High power density

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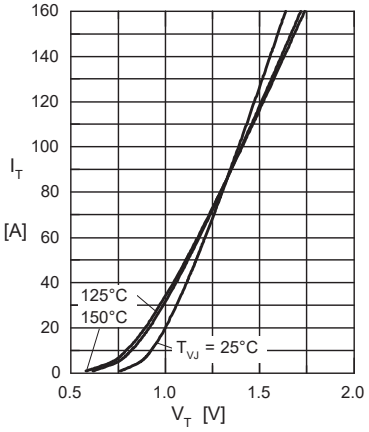

Fig. 1 Forward characteristics

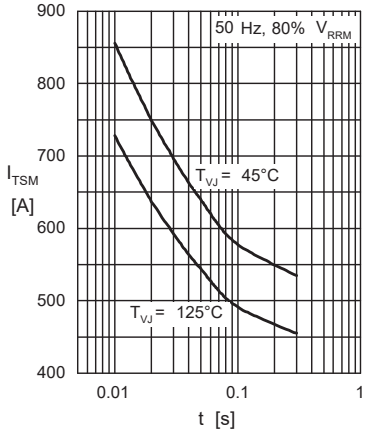

Fig. 2 Surge overload current

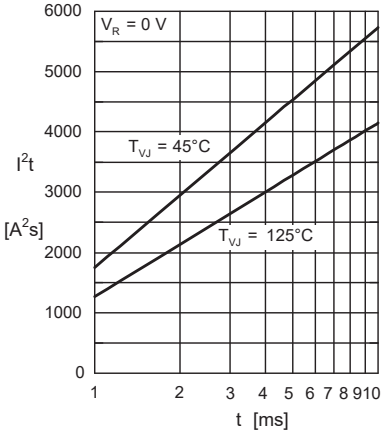

Fig. 3 I^2t versus time (1-10 ms)

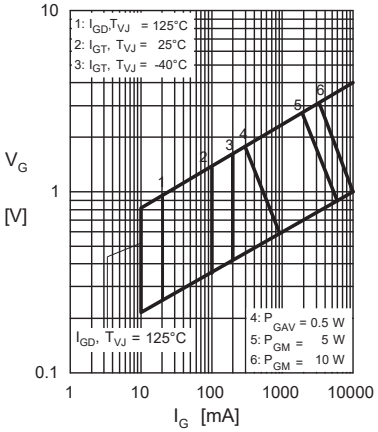

Fig. 4 Gate trigger characteristics

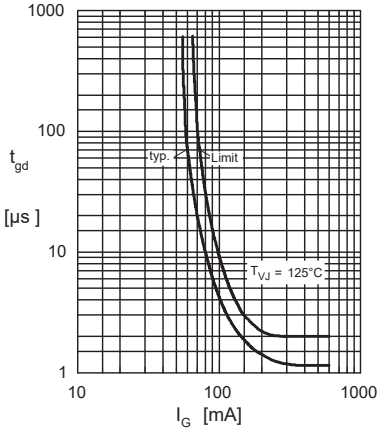

Fig. 5 Gate controlled delay time

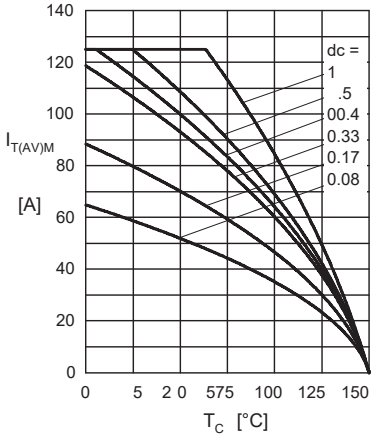

Fig. 6 Max. forward current at case temperature

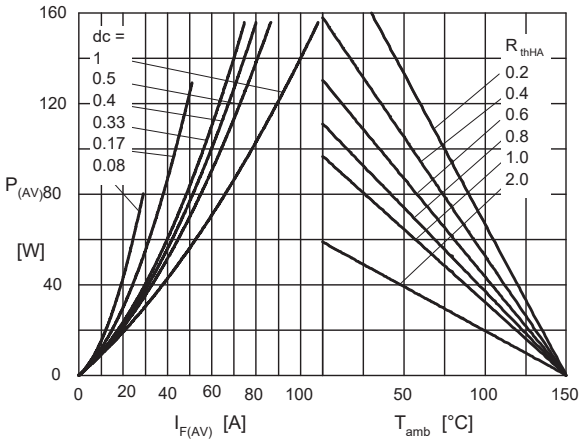

Fig. 7a Power dissipation versus direct output current Fig. 7b and ambient temperature

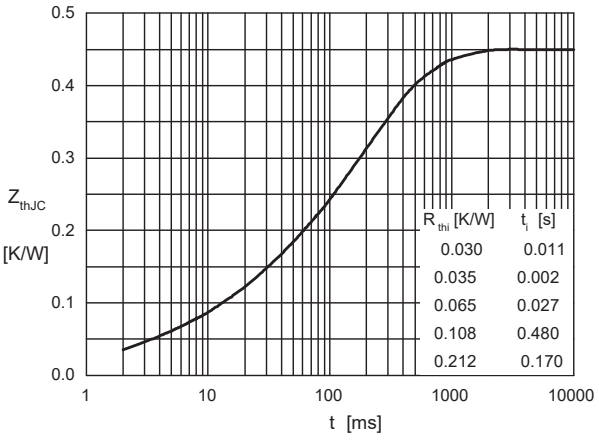

Fig. 8 Transient thermal impedance

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