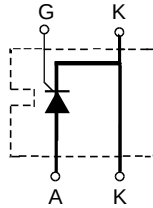
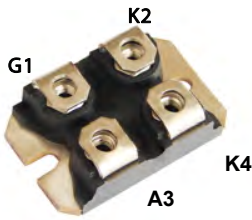
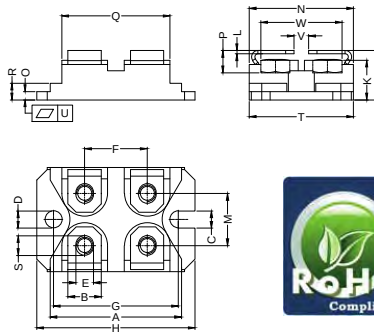


STO75GK12S

Single Thyristor Modules



Dimensions SOT-227



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	31.30	31.62	M	12.20	14.00
B	7.80	8.20	N	25.15	25.62
C	4.09	4.29	O	1.98	2.13
D	4.09	4.29	P	4.15	4.62
E	4.09	4.29	Q	25.90	26.30
F	14.91	15.11	R	3.94	4.42
G	30.12	30.30	S	4.45	4.85
H	38.20	38.56	T	24.59	25.07
J	12.30	12.90	U	0.05	0.10
K	8.92	9.60	V	3.00	4.80
L	0.76	0.84	W	19.81	21.08



Type	V _{RSM} V _{D_{SM}} V	V _{RRM} V _{D_{RM}} V
STO75GK12S	1300	1200

Symbol	Test Conditions		Maximum Ratings	Unit
I _{TRMS}	T _{VJ} = T _{VJM}		118	A
I _{TAVM}	T _C = 80°C; (180°sine)		75	
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 ² t	T _{VJ} = 45°C V _R = 0	t = 10ms (50Hz), sine t = 8.3ms (60Hz), sine	5730 5550	A ² s
	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	150	A/us
		non repetitive, I _T = 225A	500	
(dv/dt) _{cr}	T _{VJ} = T _{VJM} ; R _{GK} = ∞ ; method 1 (linear voltage rise)	V _{DR} = 2/3V _{DRM}	1000	V/us
P _{GM}	T _{VJ} = T _{VJM}	t _p = 30us	10	W
P _{GAVM}	I _T = I _{TAVM}	t _p = 300us	5 0.5	
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

STO75GKXXS

Single Thyristor Modules

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	$I_T=75A; T_{VJ}=25^{\circ}C$	≤ 1.28	V
V_{TO}	For power-loss calculations only	≤ 0.85	V
r_T		≤ 5.5	m Ω
V_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	≤ 1.5 ≤ 1.6	V
I_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	≤ 100 ≤ 150	mA
V_{GD}	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	≤ 0.2	V
I_{GD}		≤ 5	mA
I_L	$T_{VJ}=25^{\circ}C; t_p=10\mu s$ $I_G=0.3A; di_G/dt=0.3A/\mu s$	≤ 450	
I_H	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$	≤ 200	
t_{gd}	$T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$ $I_G=0.3A; di_G/dt=0.3A/\mu s$	≤ 2	μs
t_q	$T_{VJ}=T_{VJM}; I_T=20A; t_p=200\mu s; di/dt=-10A/\mu s$ $V_R=100V; dv/dt=15V/\mu s; V_D=2/3V_{DRM}$ typ.	≤ 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

STO75GKXXS

Single Thyristor Modules

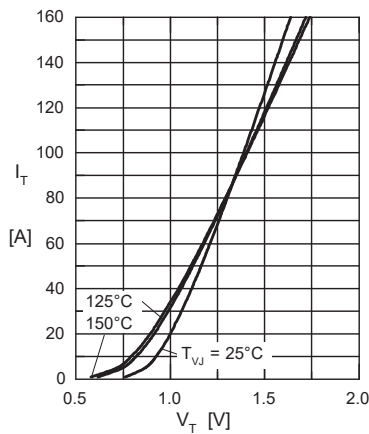


Fig. 1 Forward characteristics

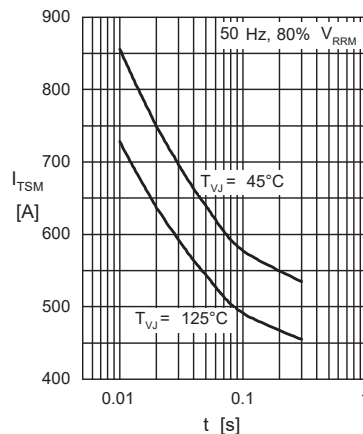


Fig. 2 Surge overload current

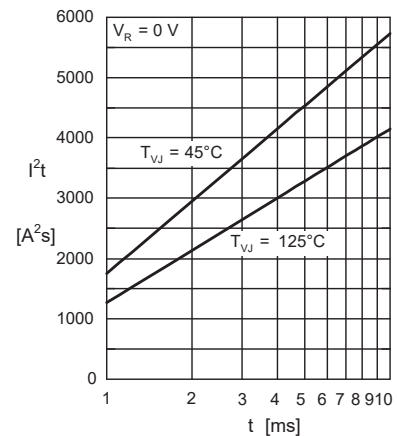


Fig. 3 I^2t versus time (1-10 ms)

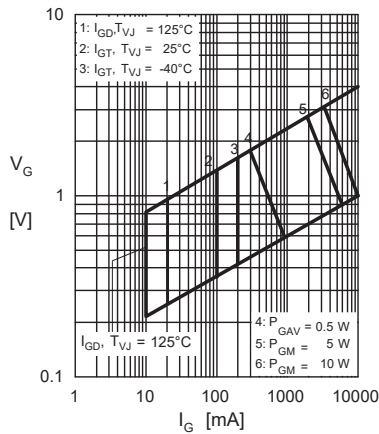


Fig. 4 Gate trigger characteristics

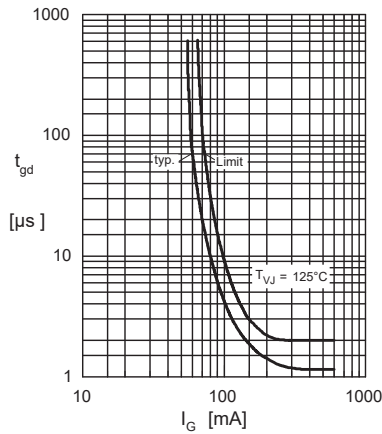


Fig. 5 Gate controlled delay time

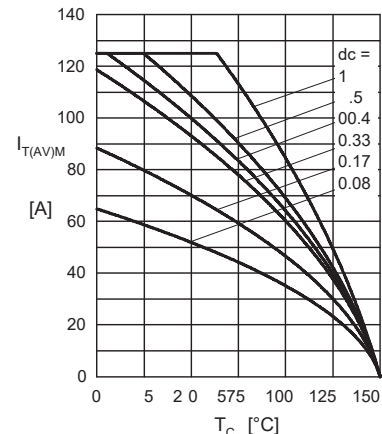


Fig. 6 Max. forward current at case temperature

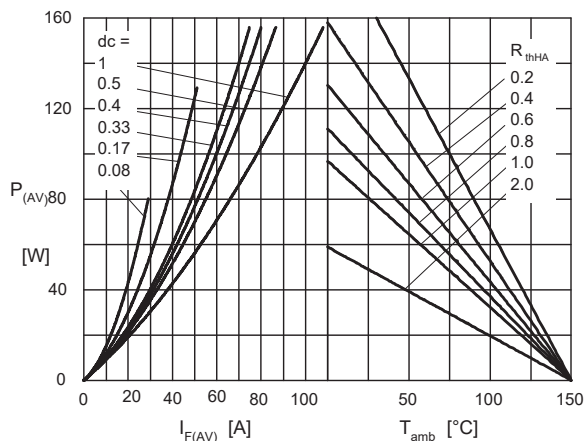


Fig. 7a Power dissipation versus direct output current Fig. 7b and ambient temperature

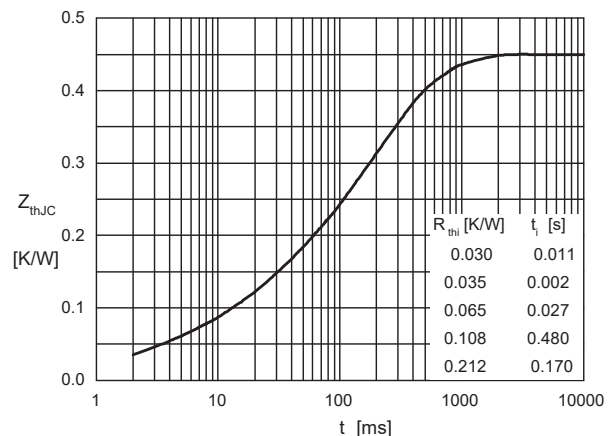


Fig. 8 Transient thermal impedance