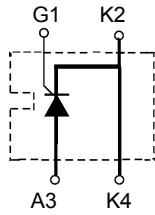
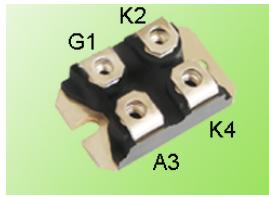
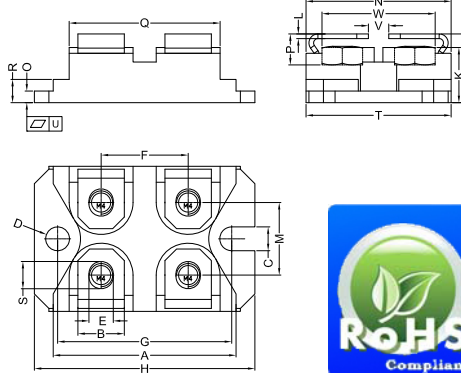


# STO150GKXXS

## Single Thyristor Modules



SOT-227B (ISOTOP)



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31,50	31,88	1,240	1,255
B	7,80	8,20	0,307	0,323
C	4,09	4,29	0,161	0,169
D	4,09	4,29	0,161	0,169
E	4,09	4,29	0,161	0,169
F	14,91	15,11	0,587	0,595
G	30,12	30,30	1,186	1,193
H	37,80	38,23	1,489	1,505
J	11,68	12,22	0,460	0,481
K	8,92	9,60	0,351	0,378
L	0,76	0,84	0,030	0,033
M	12,60	12,85	0,496	0,506
N	25,15	25,42	0,990	1,001
O	1,98	2,13	0,078	0,084
P	4,95	5,97	0,195	0,235
Q	26,54	26,90	1,045	1,059
R	3,94	4,42	0,155	0,174
S	4,72	4,85	0,186	0,191
T	24,59	25,07	0,968	0,987
U	0,05	0,10	0,002	0,004
V	3,30	4,57	0,130	0,180
W	19,81	21,08	0,780	0,830

Type	V <sub>RSM</sub> V <sub>DSTM</sub> V	V <sub>RDM</sub> V <sub>VDRM</sub> V
STO150GK08S	900	800
STO150GK12S	1300	1200
STO150GK16S	1700	1600

Symbol	Test Conditions	Maximum Ratings	Unit	
I <sub>TRMS</sub>	T <sub>VJ</sub> = T <sub>VJM</sub>	235	A	
I <sub>TAVM</sub>	T <sub>C</sub> = 80°C; (180° sine)	150		
I <sub>TSM</sub>	T <sub>VJ</sub> = 45°C V <sub>R</sub> = 0 t = 10ms (50Hz), sine t = 8.3ms (60Hz), sine	2000 2150	A	
	T <sub>VJ</sub> = T <sub>VJM</sub> V <sub>R</sub> = 0 t = 10ms(50Hz), sine t = 8.3ms(60Hz), sine	1750 1850		
I <sup>2</sup> t	T <sub>VJ</sub> = 45°C V <sub>R</sub> = 0 t = 10ms (50Hz), sine t = 8.3ms (60Hz), sine	20000 19400	A <sup>2</sup> s	
	T <sub>VJ</sub> = T <sub>VJM</sub> V <sub>R</sub> = 0 t = 10ms(50Hz), sine t = 8.3ms(60Hz), sine	15300 14400		
(di/dt) <sub>cr</sub>	T <sub>VJ</sub> = T <sub>VJM</sub> f = 50Hz, t <sub>p</sub> = 200us V <sub>D</sub> = 2/3V <sub>DORM</sub> I <sub>G</sub> = 0.3A dig/dt = 0.3A/us	repetitive, I <sub>T</sub> = 150A  non repetitive, I <sub>T</sub> = I <sub>TAVM</sub>	150  500	A/us
	(dv/dt) <sub>cr</sub>	T <sub>VJ</sub> = T <sub>VJM</sub> ; R <sub>GK</sub> = ∞; method 1 (linear voltage rise)	V <sub>DR</sub> = 2/3V <sub>DORM</sub>	1000
P <sub>GM</sub>	T <sub>VJ</sub> = T <sub>VJM</sub> I <sub>T</sub> = I <sub>TAVM</sub>	t <sub>p</sub> = 30us t <sub>p</sub> = 300us	10 5	W
P <sub>GAVM</sub>			0.5	
V <sub>RGM</sub>			10	V
T <sub>VJ</sub>			-40...+150	°C
T <sub>VJM</sub>			150	
T <sub>stg</sub>			-40...+125	
V <sub>ISOL</sub>	50/60Hz, RMS I <sub>ISOL</sub> ≤ 1mA		2500	V~
M <sub>d</sub>	Mounting torque (M4)		1.1-1.5/9-13	Nm/lb.in.
	Terminal connection torque (M4)		1.1-1.5/9-13	
Weight	typical		30	g

**Sirectifier®**

# STO150GKXXS

## Single Thyristor Modules

Symbol	Test Conditions	Characteristic Values	Unit
$I_R, I_D$	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	$\leq 10$	mA
$V_T$	$I_T=450A; T_{VJ}=25^\circ C$	$\leq 1.45$	V
$V_{TO}$	For power-loss calculations only	$\leq 0.80$	V
$r_T$		$\leq 3.8$	m $\Omega$
$V_{GT}$	$V_D=6V; T_{VJ}=25^\circ C$ $T_{VJ}=-40^\circ C$	$\leq 1.5$ $\leq 1.6$	V
$I_{GT}$	$V_D=6V; T_{VJ}=25^\circ C$ $T_{VJ}=-40^\circ C$	$\leq 150$ $\leq 200$	mA
$V_{GD}$	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	$\leq 0.2$	V
$I_{GD}$		$\leq 5$	mA
$I_L$	$T_{VJ}=25^\circ C; t_p=10\mu s$ $I_G=0.3A; di/dt=0.3A/\mu s$	$\leq 450$	
$I_H$	$T_{VJ}=25^\circ C; V_D=6V; R_{GK}=\infty$	$\leq 200$	
$t_{gd}$	$T_{VJ}=25^\circ C; V_D=1/2V_{DRM}$ $I_G=0.3A; di/dt=0.3A/\mu s$	$\leq 2$	us
$t_q$	$T_{VJ}=T_{VJM}; I_T=20A; t_p=200\mu s; di/dt=-10A/\mu s$ typ. $V_R=100V; dv/dt=15V/\mu s; V_D=2/3V_{DRM}$	$\leq 150$	
$R_{thJC}$	DC current	$\leq 0.20$	K/W
$R_{thCH}$	DC current	$\leq 0.10$	
$d_s$	Creeping distance on surface	$\leq 8$	mm
$d_A$	Creepage distance in air	$\leq 4$	
$a$	Max. allowable acceleration	$\leq 50$	m/s <sup>2</sup>

### 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 switches
- \*Light and temperature control

### ADVANTAGES

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



# STO150GKXXS

## Single Thyristor Modules

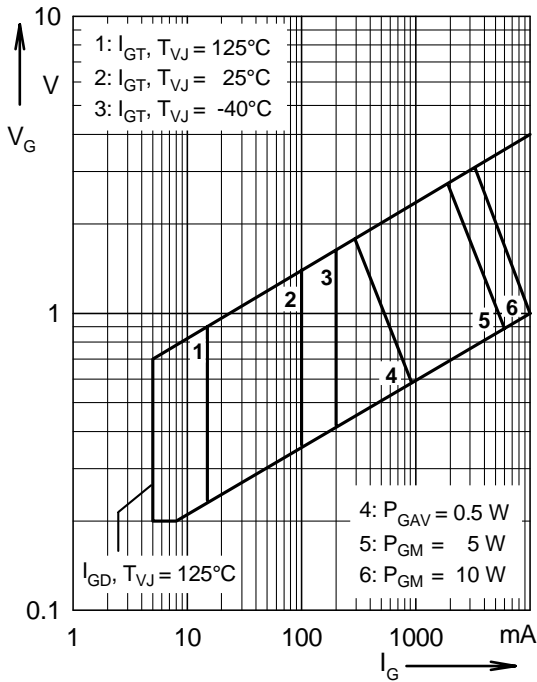


Fig. 1 Gate trigger characteristics

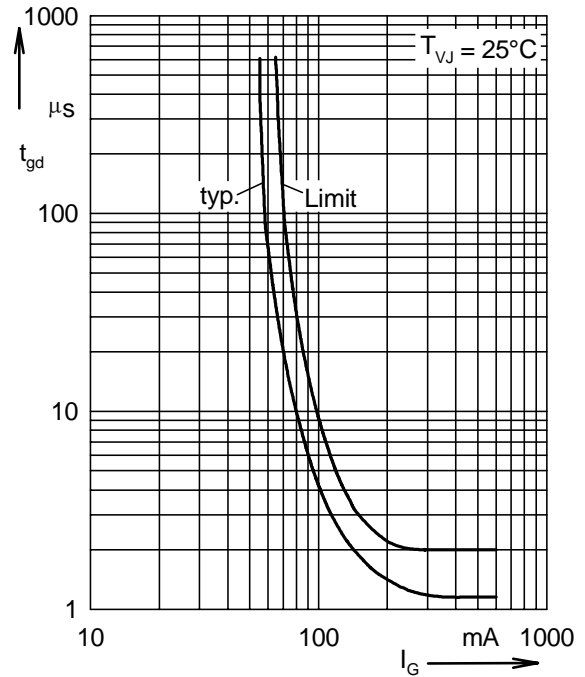


Fig. 2 Gate trigger delay time

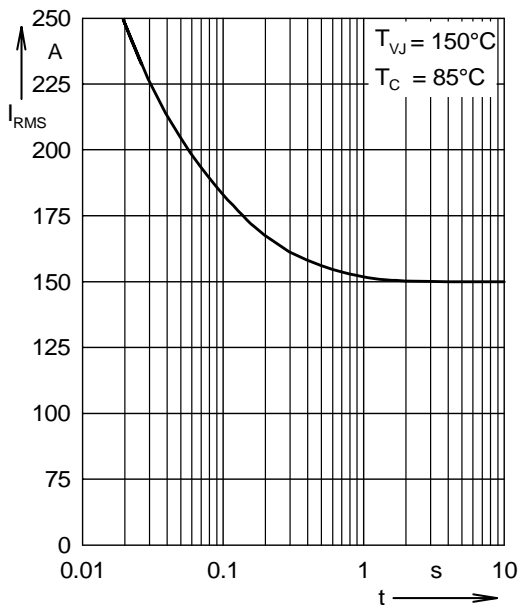


Fig.3 Rated RMS current versus time (360° conduction)

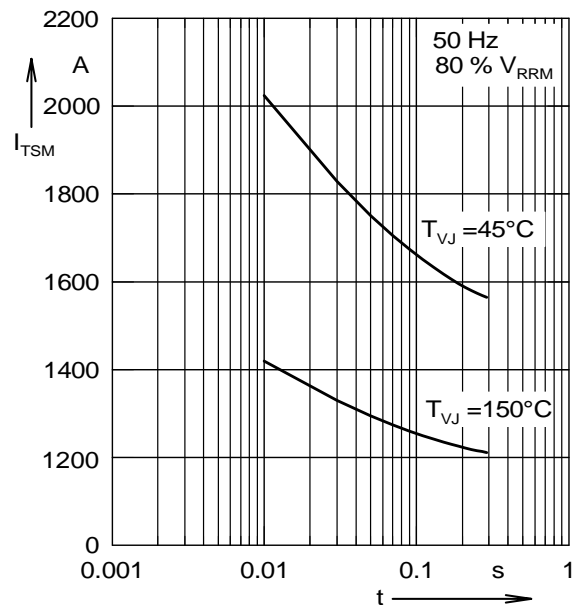


Fig.4 Surge overload current