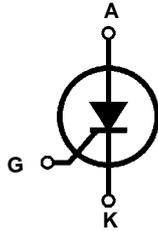
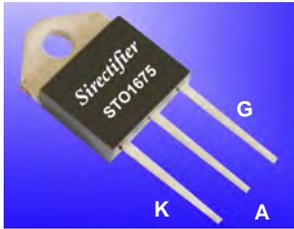
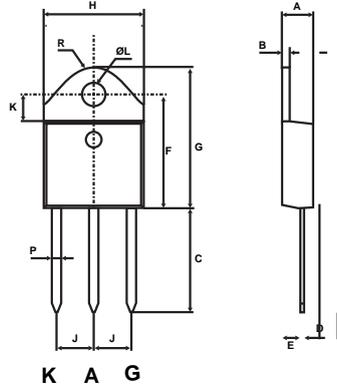


STO875 thru STO1875

Discrete Thyristors (Isolated)



Dimensions TO-218



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.5		0.7	0.020		0.028
E	2.7		2.9	0.106		0.114
F	15.8		16.5	0.622		0.650
G	20.2		21.1	0.795		0.831
H	15.1		15.5	0.594		0.610
J	5.2		5.65	0.204		0.222
K	3.4		3.65	0.134		0.144
ØL	4.08		4.17	0.161		0.164
P	1.20		1.40	0.047		0.055
R		4.60			0.181	

K=Cathode, A=Anode, G=Gate

	V _{RRM}	V _{RSM}
	V	V
STO875	800	900
STO1275	1200	1300
STO1675	1600	1700
STO1875	1800	1900

Symbol	Test Conditions	Maximum Ratings	Unit
I _{TRMS} I _{TAVM}	T _{VJ} =T _{VJM} T _C =75°C; 180° sine	75 48	A
I _{TSM}	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	540 580	A
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	480 500	
i ² t	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1350 1300	A ² s
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1050 1030	
(di/dt) _{cr}	T _{VJ} =T _{VJM} f=50Hz, t _p =200us V _D =2/3V _{DRM} I _G =0.3A dig/dt=0.3A/us repetitive, I _T =40A	150	A/us
	V _D =2/3V _{DRM} I _G =0.3A dig/dt=0.3A/us non repetitive, I _T =I _{TAVM}	500	
(dv/dt) _{cr}	T _{VJ} =T _{VJM} ; R _{GK} =∞; method 1 (linear voltage rise) V _D =2/3V _{DRM}	1000	V/us
P _{GM}	T _{VJ} =T _{VJM} I _T =I _{TAVM} t _p =30us t _p =300us	10	W
		5	
P _{GAV}		0.5	W
V _{RGM}		10	V
T _{VJ} T _{VJM} T _{stg}		-40...+140	°C
		140	
		-40...+125	
V _{ISOL}	50/60Hz, RMS t=1minute, leads-to-tab	2500	V~
M _d F _c	Mounting torque (M3) Mounting force with clip	0.8...1.2	Nm
		20...120	N
Weight		6	g



STO875 thru STO1875

Discrete Thyristors (Isolated)

Symbol	Test Conditions	Characteristic Values	Unit
I_R, I_D	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	5	mA
V_T	$I_T=75A; T_{VJ}=25^{\circ}C$	1.60	V
V_{TO}	For power-loss calculations only ($T_{VJ}=125^{\circ}C$)	0.85	V
r_T		11	$m\Omega$
V_{GT}	$V_D=6V;$ $T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	1.5 1.6	V
I_{GT}	$V_D=6V;$ $T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	100 200	mA
V_{GD}	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.2	V
I_{GD}		10	mA
I_L	$T_{VJ}=25^{\circ}C; t_p=10\mu s;$ $I_G=0.3A; di_G/dt=0.3A/\mu s$	150	mA
I_H	$T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$	100	mA
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
R_{thJC}	DC current	0.62	K/W
R_{thJH}	DC current	0.82	K/W
a	Max. acceleration, 50 Hz	50	m/s^2

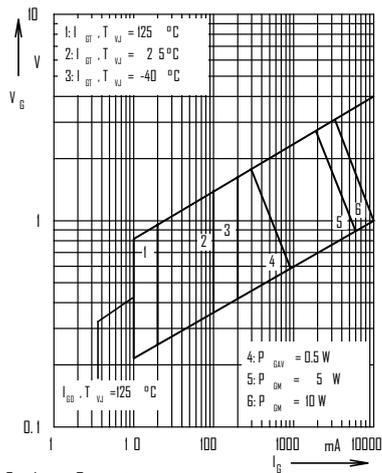


Fig. 1 Gate trigger range

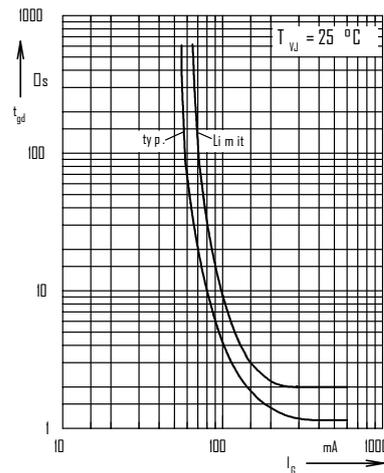


Fig. 2 Gate controlled delay time t_{gd}

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STO875 thru STO1875

Discrete Thyristors (Isolated)

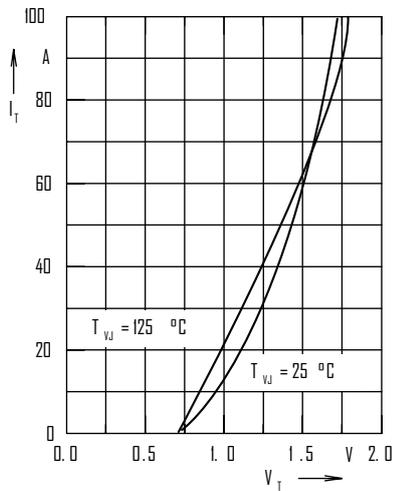


Fig. 3 Forward characteristics

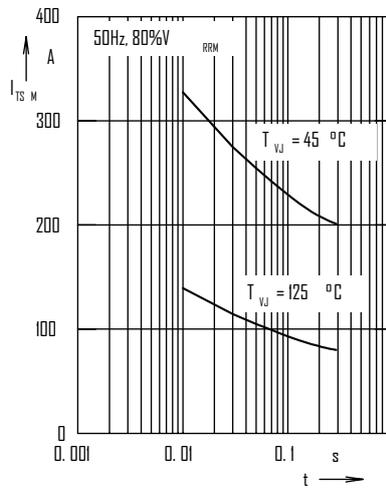


Fig. 4 Surge overload current
 I_{TSM} : crest value, t : duration

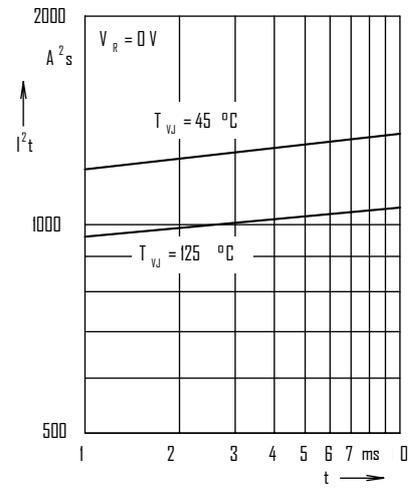


Fig. 5 I^2t versus time (1-10 ms)

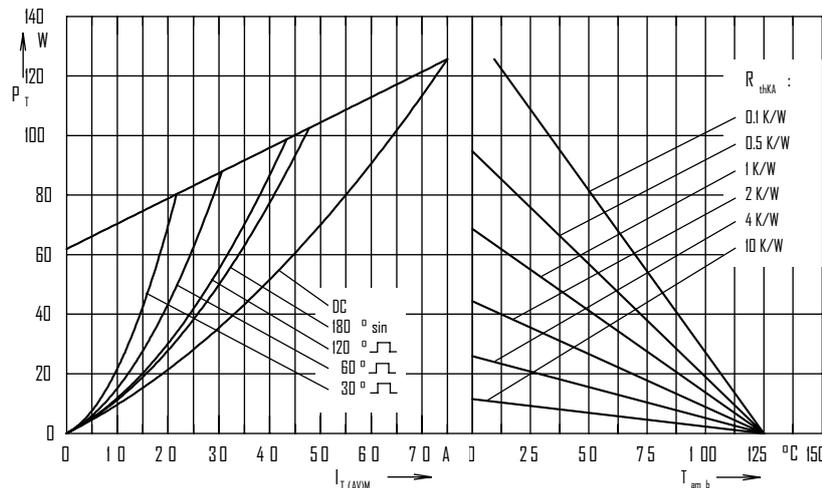


Fig. 6 Power dissipation versus forward current and ambient temperature

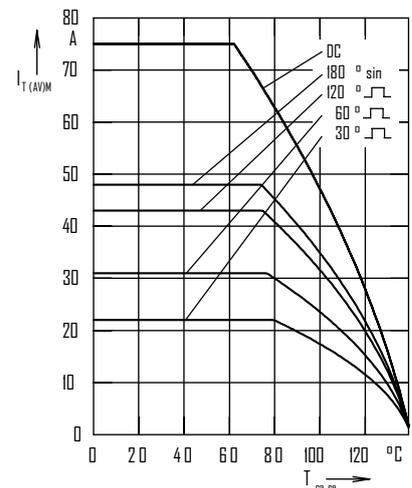


Fig. 7 Max. forward current at case temperature

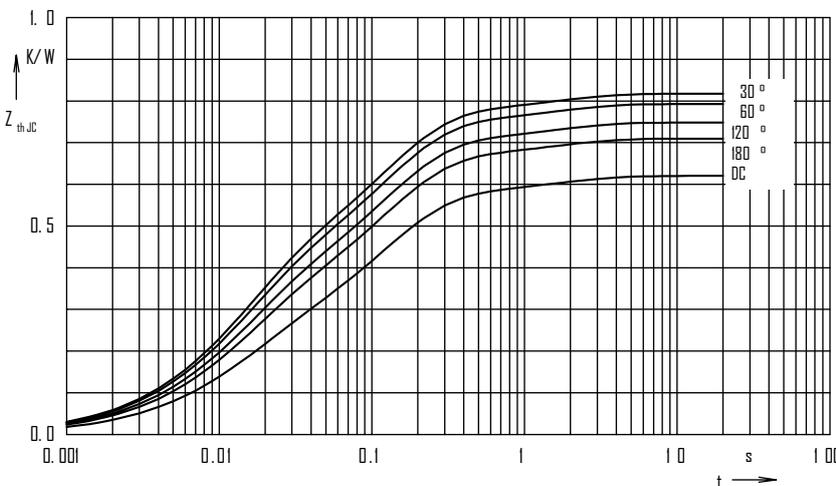


Fig. 8 T transient thermal impedance junction to case

R_{thJC} for various conduction angles d :

d	R_{thJC} (K/W)
DC	0.62
180°	0.71
120°	0.748
60°	0.793
30°	0.817

Constants for Z_{thJC} calculation:

i	R_{th} (K/W)	t_i (s)
1	0.206	0.013
2	0.362	0.118
3	0.052	1.488

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