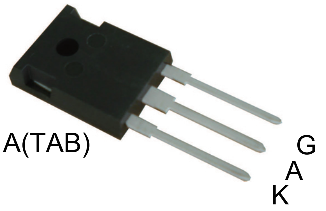
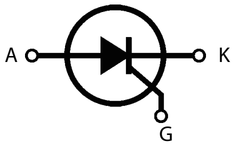
STOE30G06 thru STOE30G12

High **E**fficiency **T**hyristor **D**iscretes

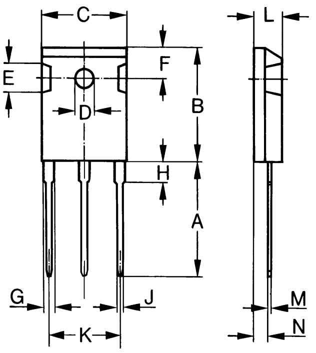




K=Cathode, A=Anode, G=Cate

	V_{RRM} V	V_{RSM} V
STOE30G06	600	700
STOE30G08	800	900
STOE30G10	1000	1100
STOE30G12	1200	1300

Dimensions TO-247AD



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

Symbol	Test Conditions		Maximum Ratings	Unit
I_{TRMS} I_{TAVM}	$T_{VJ}=T_{VJM}$ $T_C=120^oC$; 180^o sine		47 30	A
I_{TSM}	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	300 320	A
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	270 290	
i^2t	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	450 440	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	365 355	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ f=50Hz, t_p=200us $V_D=2/3V_{DRM}$ I_G=0.3A di_G/dt=0.3A/us	repetitive, I_T=90A non repetitive, I_T=30A	150 500	A/us
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$; $R_{GK}=\infty$; method 1 (linear voltage rise)	$V_{DR}=2/3V_{DRM}$	1000	V/us
P_{GM}	$T_{VJ}=T_{VJM}$ $I_T=I_{TAVM}$	t_p=30us t_p=300us	10 5	W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ} T_{VJM} T_{stg}			-55...+150 150 -55...+150	^oC
M_d F_c	Mounting torque (M3) Mounting force with clip		0.8...1.2 20...120	Nm N
Weight	typical		6	g

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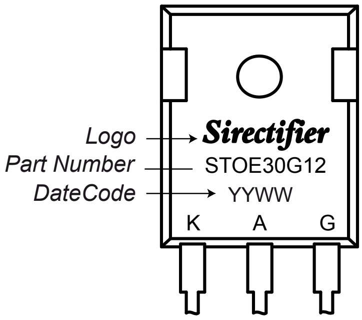
Symbol	Test Conditions	Characteristic Values	Unit
I_R, I_D	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$	5	mA
V_T	I_T=30A; T_{VJ}=25°C	1.28	V
V_{TO}	For power-loss calculations only (T_{VJ}=150°C)	0.86	V
r_T		15	mΩ
V_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C	1.3 1.6	V
I_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C T_{VJ}=125°C	28 50 25	mA
V_{GD}	$T_{VJ}=T_{VJM}$; $V_D=2/3V_{DRM}$	0.2	V
I_{GD}		1	mA
I_L	T_{VJ}=25°C; t_p=10us; I_G=0.3A; di_G/dt=0.3A/us	90	mA
I_H	T_{VJ}=25°C; V_D=6V; $R_{GK}=\infty$	60	mA
t_{gd}	T_{VJ}=25°C; $V_D=1/2V_{DRM}$ I_G=0.3A; di_G/dt=0.3A/us	2	us
R_{thJC}	DC current	0.50	K/W
R_{thJH}	DC current	0.25	K/W
a	Max. acceleration, 50 Hz	50	m/s^2

Product Marking



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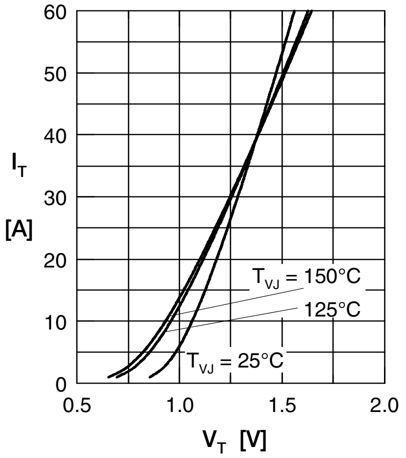


Fig. 1 Forward characteristics

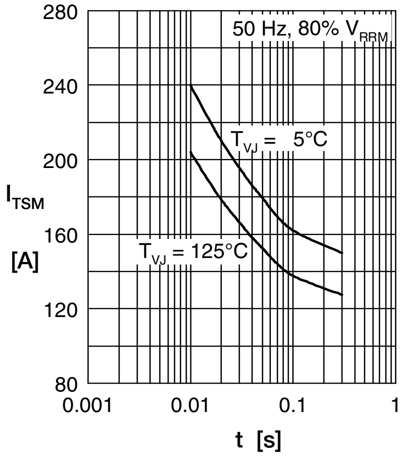


Fig. 2 Surge overload current
I_{TSM}: crest value, t: duration

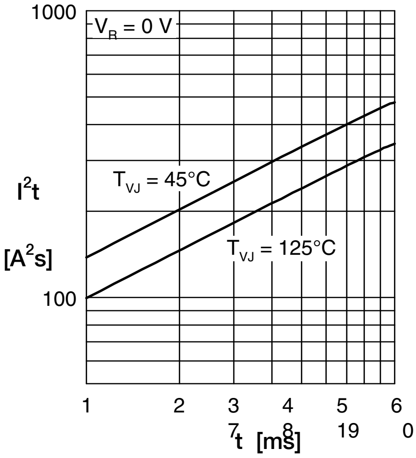


Fig. 3 I^2t versus time (1-10 s)

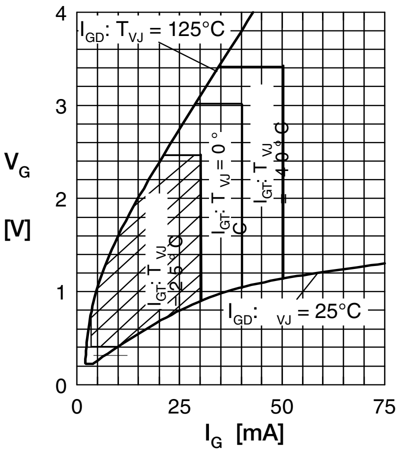


Fig. 4 Gate voltage & gate current
Triggering: A = no; B = possible; C = safe

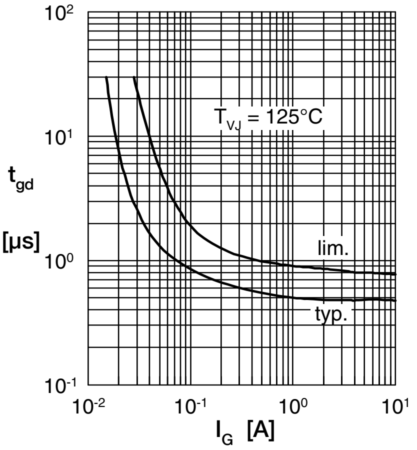


Fig. 5 Gate controlled delay time t_{gd}

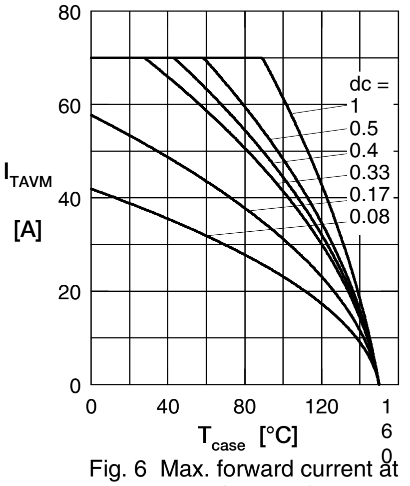


Fig. 6 Max. forward current at case temperature

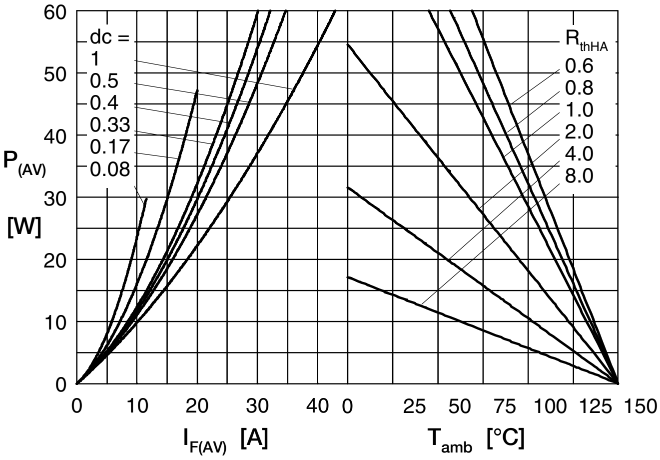
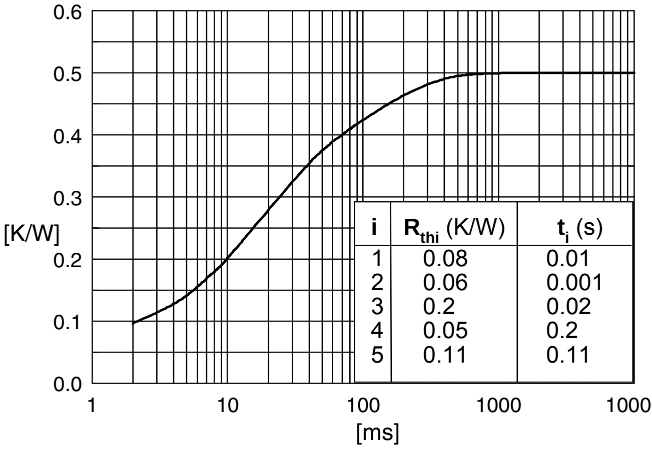


Fig. 7a Power dissipation versus direct output current
Fig. 7b and ambient temperature



i	R_{thi} (K/W)	t_i (s)
1	0.08	0.01
2	0.06	0.001
3	0.2	0.02
4	0.05	0.2
5	0.11	0.11

Fig. 7 Transient thermal impedance junction to case