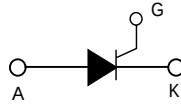
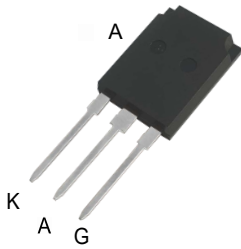


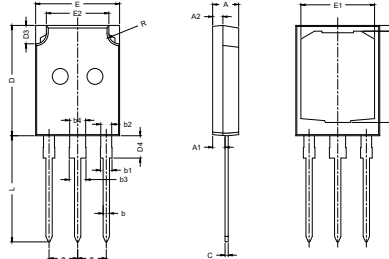
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High Efficiency Thyristor Discretes



A - Anode
K - Cathode
G - Gate

Dimensions TO-247P



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.85	5.10	D2	0.96	1.25
A1	2.31	2.51	D3	3.35	3.80
A2	1.85	2.10	D4	3.95	4.45
b	1.16	1.26	E	15.80	16.05
b1	/	2.25	E1	13.50	14.40
b2	1.96	2.15	E2	11.25	12.45
b3	/	3.25			
b4	2.96	3.15	e	5.44(BSC)	
c	0.59	0.66	L	19.80	20.25
D	20.85	21.10			
D1	17.15	17.75	R	1.90	2.10

$V_{RRM} = 1200V$
 $I_{TAV} = 80A$
 $V_T = 1.35V$

	V_{RRM} V	V_{RSM} V
STOE80G12	1200	1300

Symbol	Test Conditions		Maximum Ratings	Unit
I_{TRMS} I_{TAVM}	$T_{VJ}=T_{VJM}$ $T_C=85^{\circ}C$; 180° sine		126 80	A
I_{TSM}	$T_{VJ}=45^{\circ}C$ $V_R=0$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	900 970	A
	$T_{VJ}=T_{VJM}$ $V_R=0$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	765 825	
I^2t	$T_{VJ}=45^{\circ}C$ $V_R=0$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	4050 3920	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	$t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	2930 2830	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ $f=50Hz$, $t_p=200\mu s$ $V_D=2/3V_{DRM}$ $I_G=0.3A$ $di_G/dt=0.3A/\mu s$	repetitive, $I_T=240A$	150	A/ μs
		non repetitive, $I_T=80A$	500	
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$; $R_{GK}=\infty$; method 1 (linear voltage rise)	$V_{DR}=2/3V_{DRM}$	1000	V/ μs
P_{GM}	$T_{VJ}=T_{VJM}$ $I_T=I_{TAVM}$	$t_p=30\mu s$ $t_p=300\mu s$	10 5	W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ} T_{VJM} T_{stg}			-40...+150 125 -40...+150	$^{\circ}C$
M_d F_c	Mounting torque (M3) Mounting force with clip		0.8...1.2 20...120	Nm N
Weight	typical		6	g

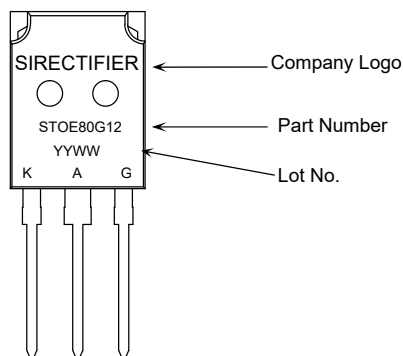
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Symbol	Test Conditions	Characteristic Values	Unit
I_R, I_D	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	5	mA
V_T	$I_T=80A; T_{VJ}=25^{\circ}C$	1.35	V
V_{TO}	For power-loss calculations only ($T_{VJ}=150^{\circ}C$)	0.88	V
r_T		6.3	m Ω
V_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	1.5 1.6	V
I_{GT}	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$ $T_{VJ}=125^{\circ}C$	40 80 50	mA
V_{GD}	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.2	V
I_{GD}		5	mA
I_L	$T_{VJ}=25^{\circ}C; t_p=10\mu s;$ $I_G=0.3A; di_G/dt=0.3A/\mu s$	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	0.2	K/W
R_{thCH}	DC current	0.25	K/W
a	Max. acceleration, 50 Hz	50	m/s ²

Product Marking



Features / Advantages:

- Thyristor for line frequency
- Glass passivated chip

Applications:

- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

Package: TO-247P

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0



Standard applicable to Power Semiconductors

- IEC191-1/4
- IEC747-1
- IEC747-6
- IEC68-2-...
- UL94-V0

Product Reliability

- IEC147-4
- IEC68-2-14
- IEC68-2-20
- IEC68-2-27
- CECC50000-4.4.3

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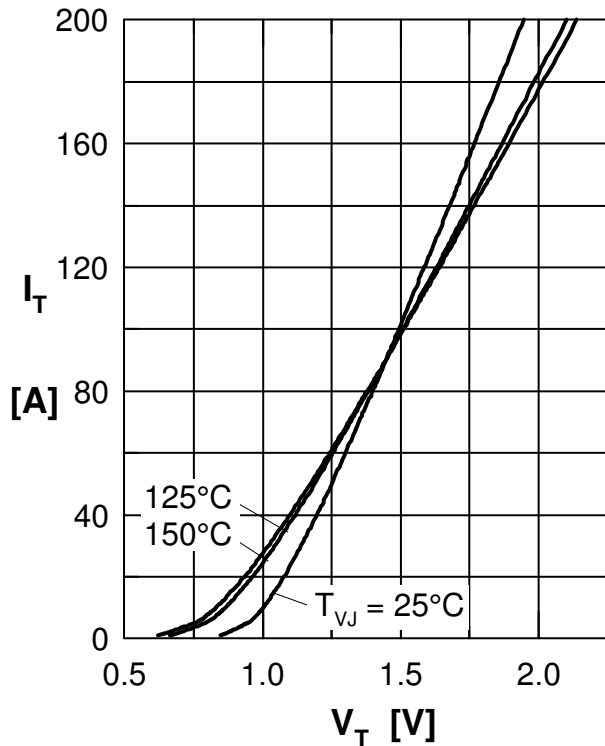


Fig. 1 Forward characteristics

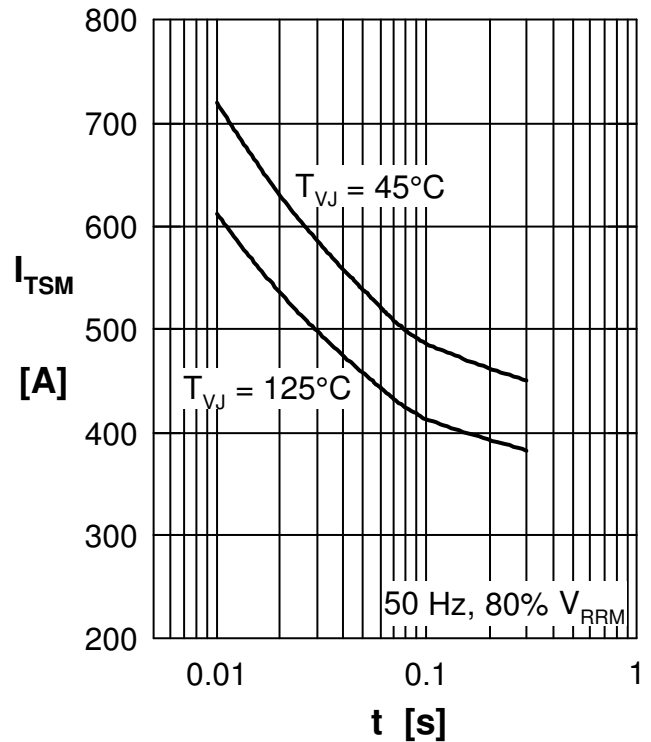


Fig. 2 Surge overload current

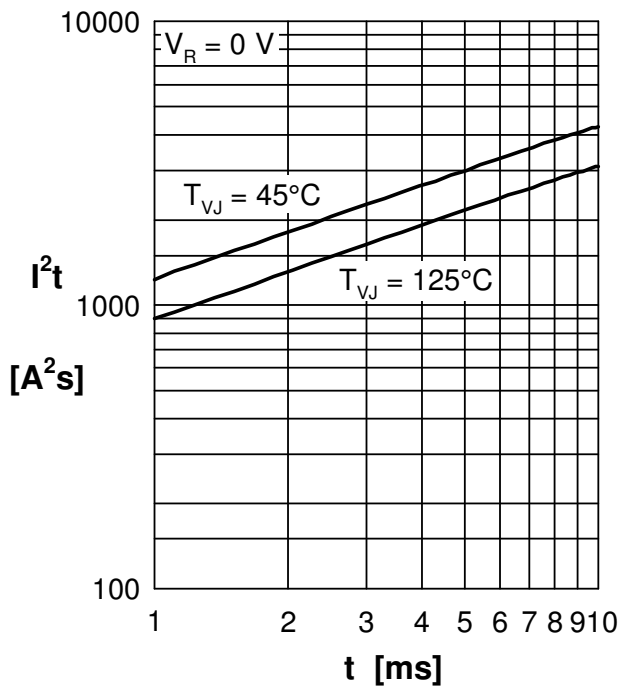


Fig. 3 I^2t versus time (1-10 ms)

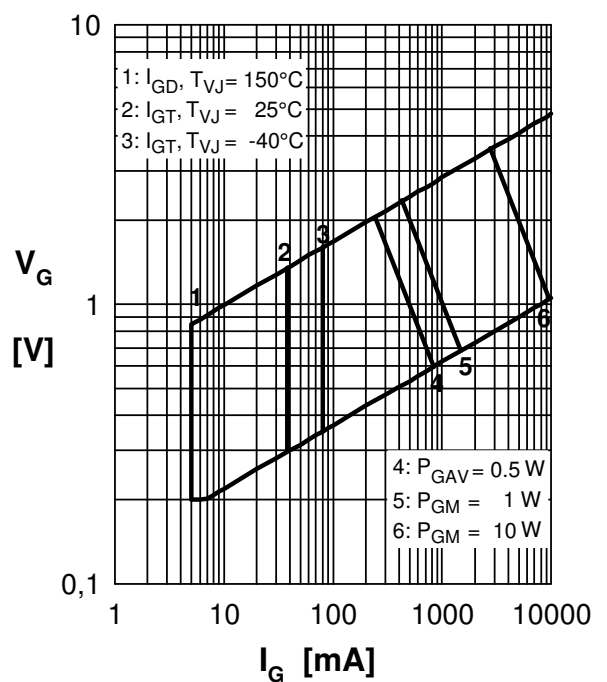


Fig. 4 Gate trigger characteristics

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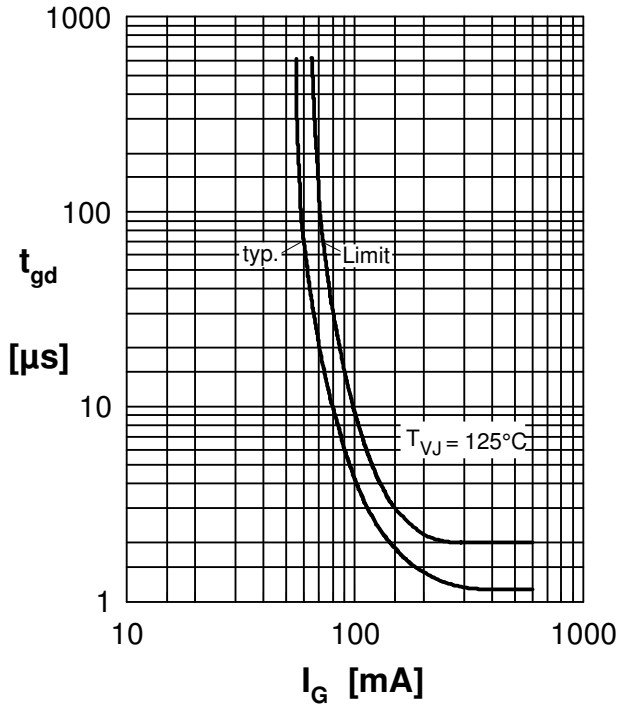


Fig. 5 Gate controlled delay time

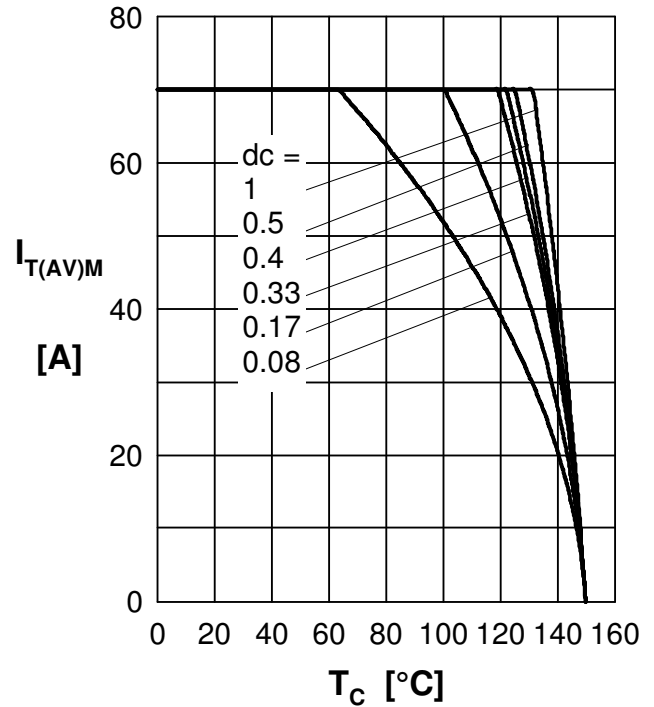


Fig. 6 Max. forward current at case temperature

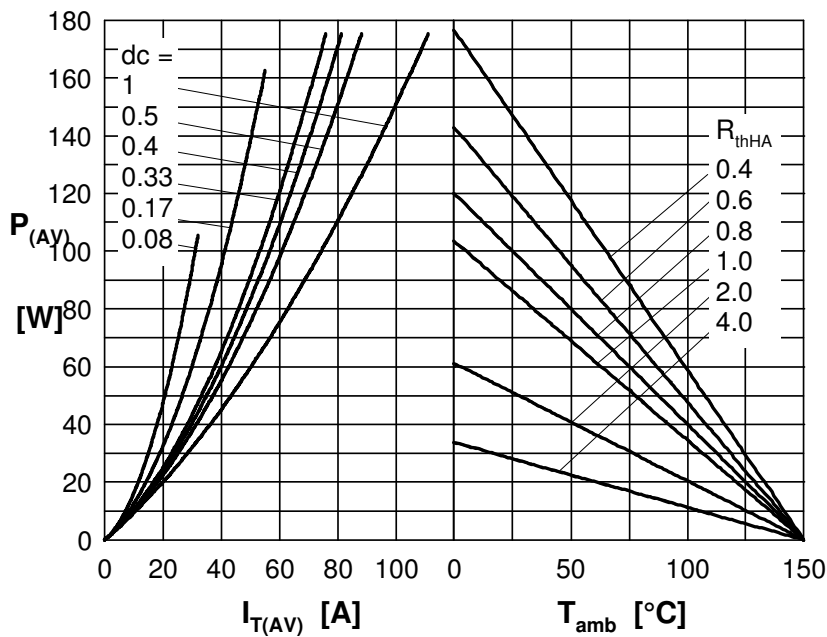


Fig. 7a Power dissipation versus direct output current
Fig. 7b and ambient temperature

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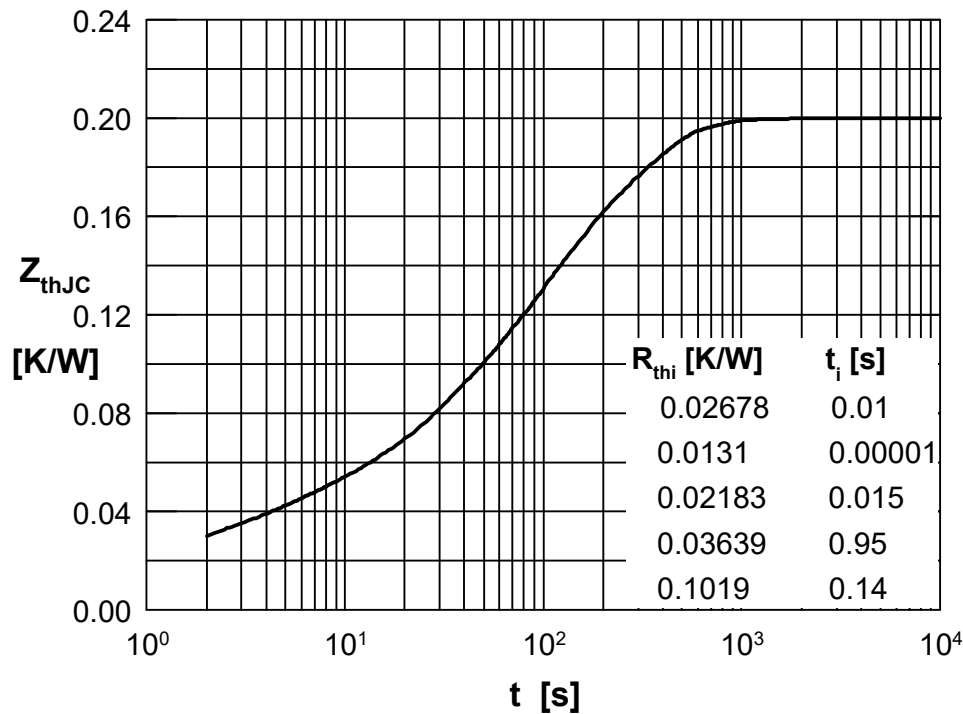


Fig. 8 Transient thermal impedance