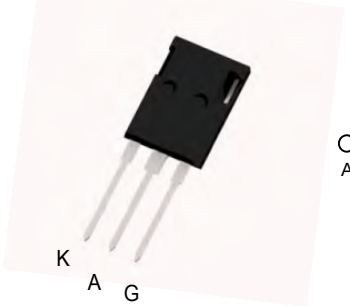
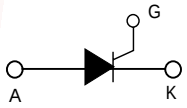
STYN8110 thru STYN22110

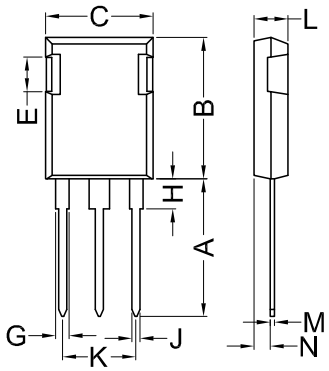
Discrete Thyristors(SCRs)





	V_{RRM} V	V_{RSM} V
STYN8110	800	900
STYN12110	1200	1300
STYN16110	1600	1700
STYN18110	1800	1900
STYN20110	2000	2100
STYN22110	2200	2300

Dimensions TO-247P



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
E	4.32	5.49	0.170	0.216
F	5.4	6.3	0.212	0.248
G	1.65	2.13	0.065	0.084
H	3.80	4.5	0.149	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.1	0.426	0.437
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}	$T_{VJ}=T_{VJM}$ $T_C=85^oC$; 180° sine		110 70	A
I_{TSM}	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1100 1190	A
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	935 1010	
i^2t	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	6050 5890	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	4370 4250	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ f=50Hz, t_p=200us $V_D=2/3V_{DRM}$ I_G=0.3A di_G/dt=0.3A/us	repetitive, I_T=330A non repetitive, I_T=110A	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}			-40...+150 125 -40...+150	°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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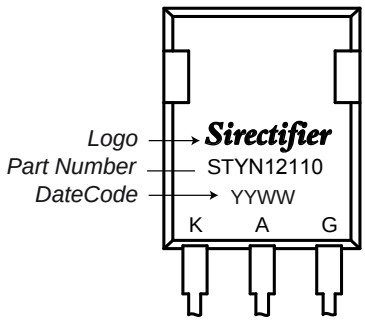
STYN8110 thru STYN22110

Discrete Thyristors(SCRs)

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=110A; T_{VJ}=25°C	1.37	V
V_{TO}	For power-loss calculations only (T_{VJ}=125°C)	0.82	V
r_T		5.2	mΩ
V_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C	1.5 1.6	V
I_{GT}	V_D=6V; T_{VJ}=25°C T_{VJ}=-40°C T_{VJ}=125°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°C; t_p=10us; I_G=0.3A; di_G/dt=0.3A/us	150	mA
I_H	T_{VJ}=25°C; V_D=6V; R_{GK}=∞	100	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	0.2	K/W
R_{thCH}	DC current	0.15	K/W
a	Max. acceleration, 50 Hz	50	m/s^2

Product Marking



Features / Advantages:

- Thyristor for line frequency
- Glass passivated chip

Package: TO-247P

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

Applications:

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

Standard applicable to Power Semiconductors

- IEC191-1/
- IEC747-
- IEC747-
- IEC68-2-..
- IUL94-V

Product Reliability

- IEC147-
- IEC68-2-1
- IEC68-2-2
- IEC68-2-2
- CECC50000-4.4.

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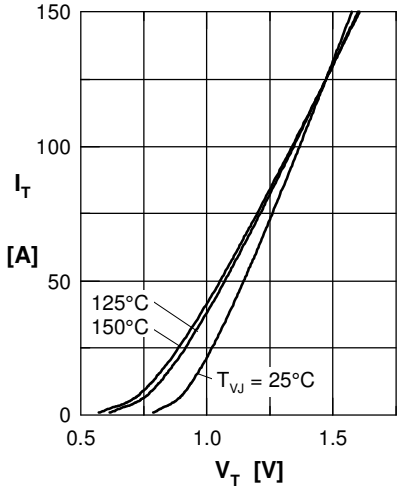


Fig. 1 Forward characteristics

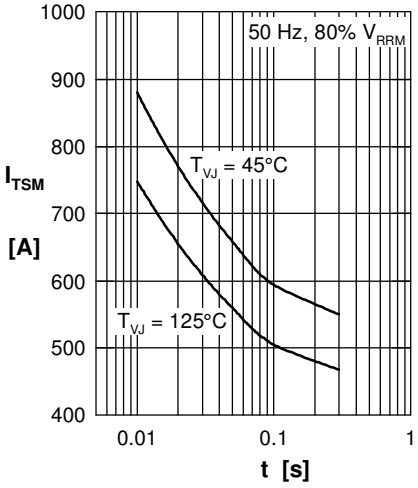


Fig. 2 Surge overload current

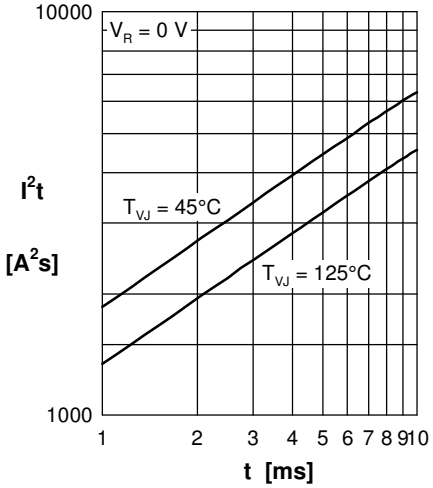


Fig. 3 I^2t versus time (1-10 ms)

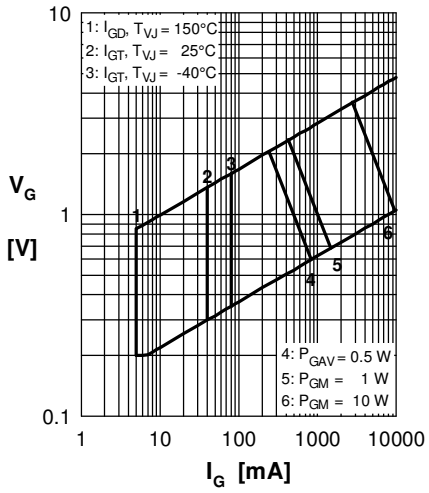


Fig. 4 Gate trigger characteristics

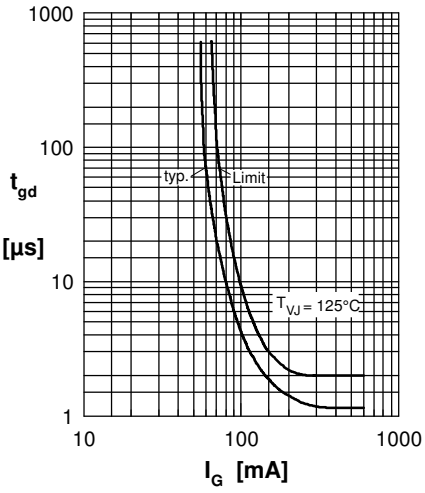


Fig. 5 Gate controlled delay time

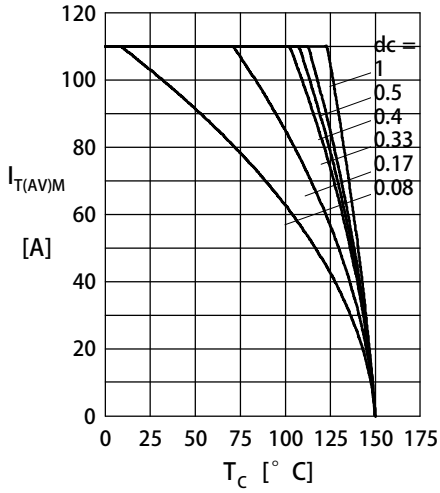


Fig. 6 Max. forward current at case temperature

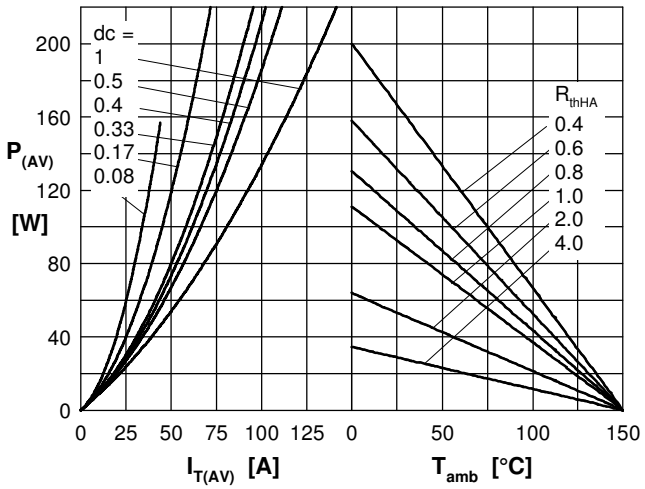
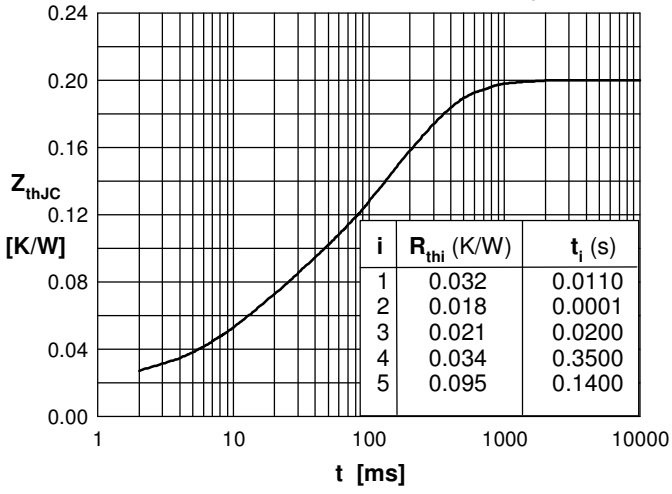


Fig. 7a Power dissipation versus direct output current
Fig. 7b and ambient temperature



i	R_{thi} (K/W)	t_i (s)
1	0.032	0.0110
2	0.018	0.0001
3	0.021	0.0200
4	0.034	0.3500
5	0.095	0.1400

Fig. 8 Transient thermal impedance

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