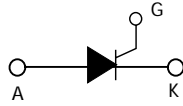
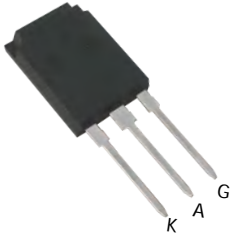
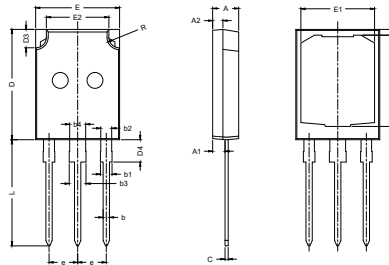


# STYN8110 thru STYN22110

## Discrete Thyristors(SCRS)



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

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

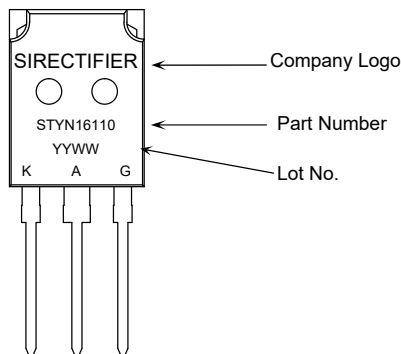
Symbol	Test Conditions	Maximum Ratings	Unit
$I_{TRMS}$ $I_{TAVM}$	$V_J = T_{VJM}$ $T_C = 85^\circ C$ ; 180° sine	110 70	A
$I_{TSM}$	$T_{VJ} = 45^\circ C$ $V_R = 0$ t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1100 1190	A
	$T_{VJ} = T_{VJM}$ $V_R = 0$ t=10ms(50Hz), sine t=8.3ms(60Hz), sine	935 1010	
$I^2t$	$T_{VJ} = 45^\circ C$ $V_R = 0$ 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, $t_p = 200\mu s$ $V_D = 2/3V_{DRM}$ $I_G = 0.3A$ diG/dt=0.3A/us repetitive, $I_T = 330A$	150	A/us
	non repetitive, $I_T = 110A$	500	
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ ; $R_{GK} = \infty$ ; method 1 (linear voltage rise) $V_{DR} = 2/3V_{DRM}$	1000	V/us
$P_{GM}$	$T_{VJ} = T_{VJM}$ $I_T = I_{TAVM}$ $t_p = 30\mu s$ $t_p = 300\mu s$	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

# 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
$V_T$	$I_T=110A; T_{VJ}=25^{\circ}C$	1.37	V
$V_{TO}$	For power-loss calculations only ( $T_{VJ}=125^{\circ}C$ )	0.82	V
$r_T$		5.2	m $\Omega$
$V_{GT}$	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	1.5 1.6	V
$I_{GT}$	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$ $T_{VJ}=125^{\circ}C$	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	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 <sup>2</sup>

### 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

### Standard applicable to Power Semiconductors

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

### Package: TO-247P

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

### Product Reliability

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



Part Number	Package	Shipping	Marking Code
STYN16110	TO-247P	30pcs / Tube	STYN16110

# STYN8110 thru STYN22110

## Discrete Thyristors(SCRS)

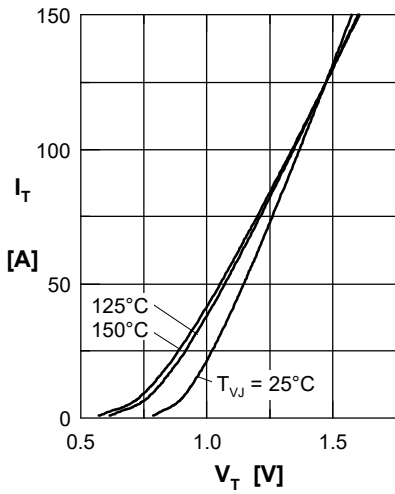


Fig. 1 Forward characteristics

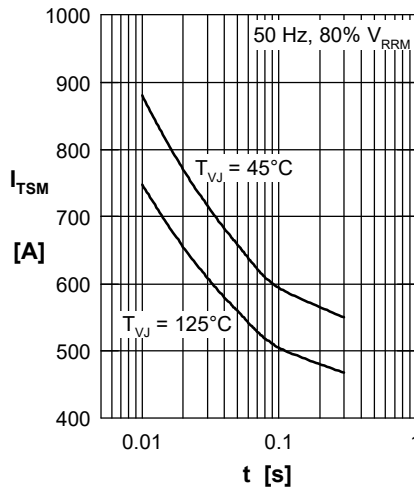


Fig. 2 Surge overload current

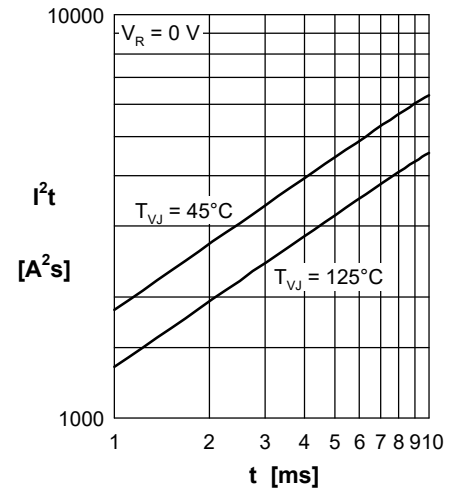


Fig. 3  $I^2t$  versus time (1-10 ms)

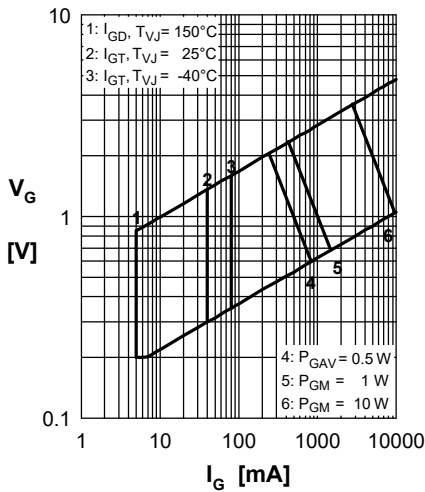


Fig. 4 Gate trigger characteristics

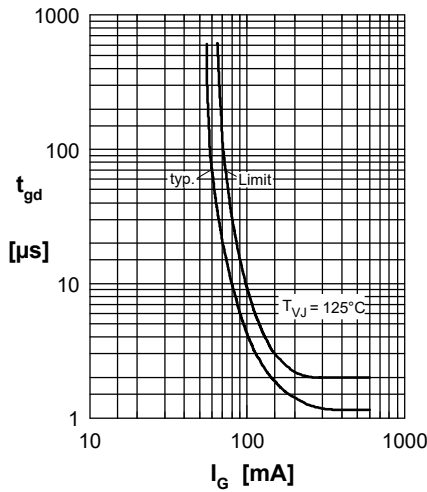


Fig. 5 Gate controlled delay time

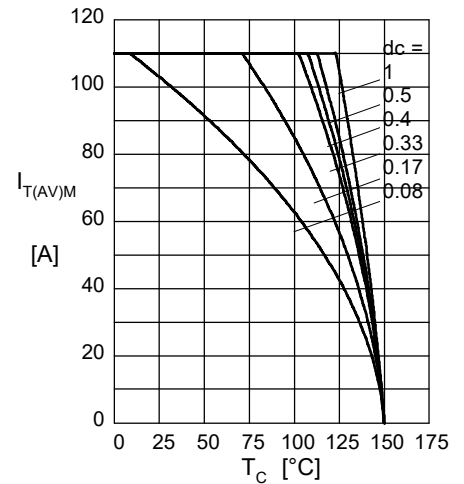


Fig. 6 Max. forward current at case temperature

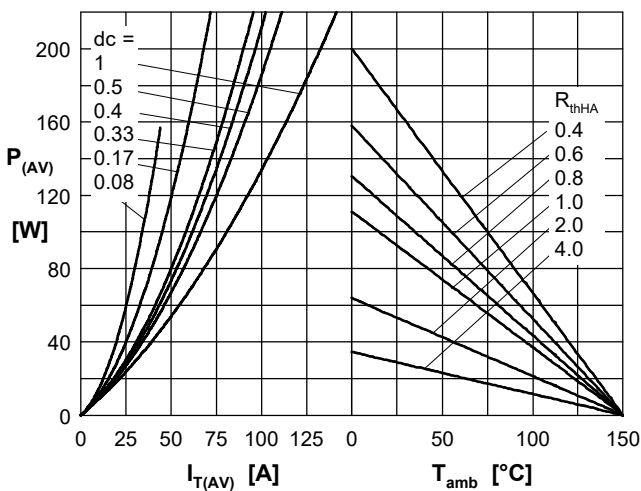


Fig. 7a Power dissipation versus direct output current  
Fig. 7b and ambient temperature

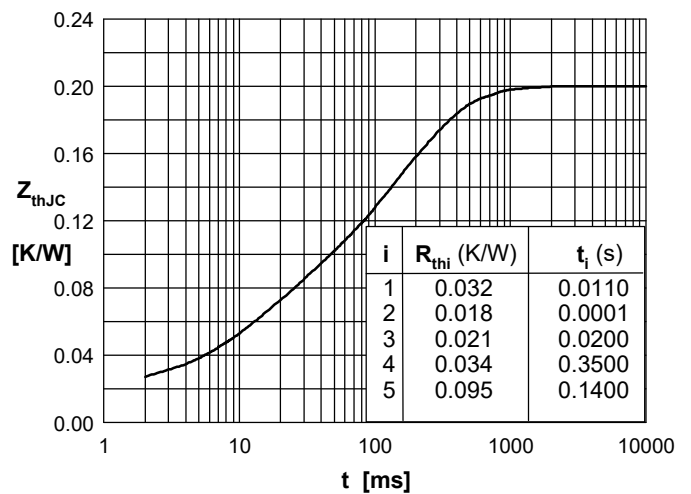


Fig. 8 Transient thermal impedance