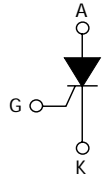
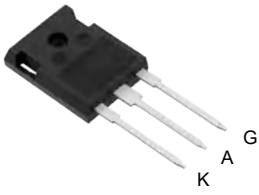


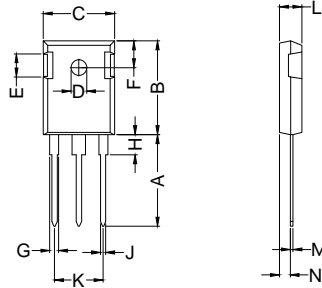
# STYN655

## Discrete Thyristors(SCRs)



K=Cathode, A=Anode, G=Cate

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	0.620	0.640
∅D	3.15	3.65	0.124	0.144
E	4.32	5.49	0.170	0.216
F	5.40	6.30	0.213	0.248
G	1.65	2.18	0.065	0.086
H	3.80	4.50	0.150	0.177
J	1.00	1.40	0.039	0.055
K	10.80	11.10	0.425	0.437
L	4.70	5.30	0.185	0.209
M	0.40	0.80	0.016	0.031
N	1.50	2.49	0.059	0.098

	V <sub>RRM</sub> V	V <sub>RSM</sub> V
<b>STYN655</b>	600	700

Symbol	Test Conditions	Maximum Ratings	Unit
<b>I<sub>TRMS</sub></b> <b>I<sub>TAVM</sub></b>	T <sub>VJ</sub> =T <sub>VJM</sub> T <sub>C</sub> =85°C; 180° sine	55 35	A
<b>I<sub>TSM</sub></b>	T <sub>VJ</sub> =45°C V <sub>R</sub> =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	300 320	A
	T <sub>VJ</sub> =T <sub>VJM</sub> V <sub>R</sub> =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	270 290	
<b>i<sup>2</sup>t</b>	T <sub>VJ</sub> =45°C V <sub>R</sub> =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	450 440	A <sup>2</sup> s
	T <sub>VJ</sub> =T <sub>VJM</sub> V <sub>R</sub> =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	365 355	
<b>(di/dt)<sub>cr</sub></b>	T <sub>VJ</sub> =T <sub>VJM</sub> f=50Hz, t <sub>p</sub> =200us V <sub>D</sub> =2/3V <sub>DRM</sub> I <sub>G</sub> =0.3A di <sub>G</sub> /dt=0.3A/us	repetitive, I <sub>T</sub> =40A 150	A/us
		non repetitive, I <sub>T</sub> =I <sub>TAVM</sub> 500	
<b>(dv/dt)<sub>cr</sub></b>	T <sub>VJ</sub> =T <sub>VJM</sub> ; R <sub>GK</sub> =∞; method 1 (linear voltage rise)	V <sub>DR</sub> =2/3V <sub>DRM</sub> 1000	V/us
<b>P<sub>GM</sub></b>	T <sub>VJ</sub> =T <sub>VJM</sub> I <sub>T</sub> =I <sub>TAVM</sub>	t <sub>p</sub> =30us 5 t <sub>p</sub> =300us	W
<b>P<sub>GAV</sub></b>		0.5	W
<b>V<sub>RGM</sub></b>		10	V
<b>T<sub>VJ</sub></b> <b>T<sub>VJM</sub></b> <b>T<sub>stg</sub></b>		-40...+125 125 -40...+125	°C
<b>M<sub>d</sub></b> <b>F<sub>c</sub></b>	Mounting torque (M3) Mounting force with clip	0.8...1.2 20...120	Nm N
<b>Weight</b>	typical	6	g

**Sirectifier**<sup>®</sup>

# STYN655

## 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
$V_T$	$I_T=55A; T_{VJ}=25^{\circ}C$	1.6	V
$V_{TO}$	For power-loss calculations only ( $T_{VJ}=125^{\circ}C$ )	0.9	V
$r_T$		15	m $\Omega$
$V_{GT}$	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	1.0 1.2	V
$I_{GT}$	$V_D=6V; T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$ $T_{VJ}=125^{\circ}C$	65 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	0.62	K/W
$R_{thJH}$	DC current	0.82	K/W
$a$	Max. acceleration, 50 Hz	50	m/s <sup>2</sup>

### Features / Advantages:

- Thyristor for line frequency
- Glass passivated chip
- Long-term stability

### Applications:

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

### Package:

- TO-247AD
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0



### ORDERING INFORMATION

Part Number	Package	Shipping	Marking Code
STYN655	TO-247AD	30pcs / Tube	STYN655

**Sirectifier®**

# STYN655

## Discrete Thyristors(SCRs)

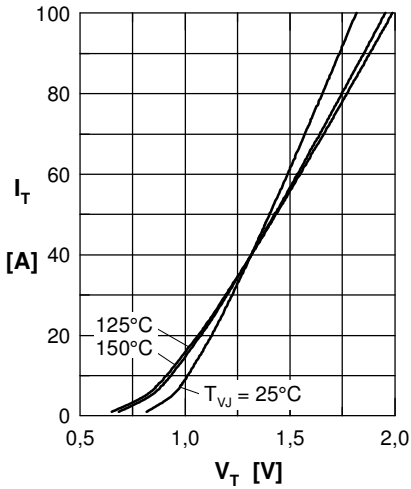


Fig. 1 Forward characteristics

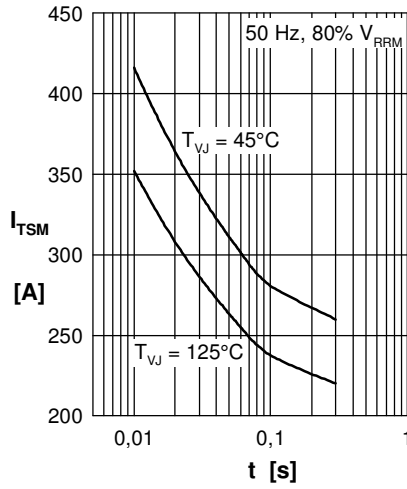


Fig. 2 Surge overload current

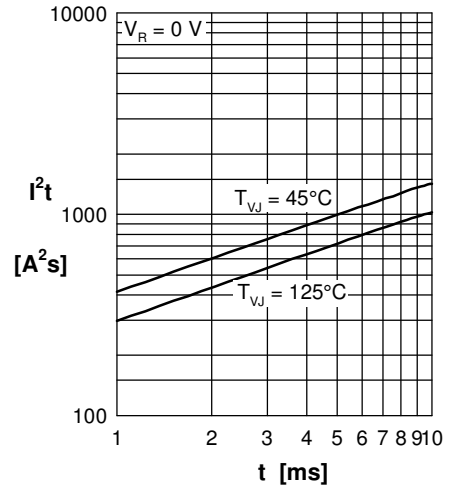


Fig. 3  $I^2t$  versus time (1-10 ms)

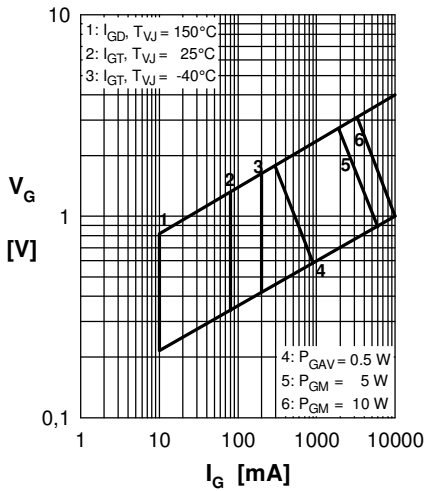


Fig. 4 Gate trigger characteristics

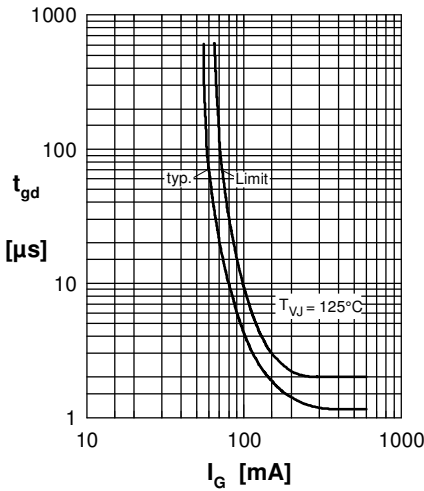


Fig. 5 Gate controlled delay time

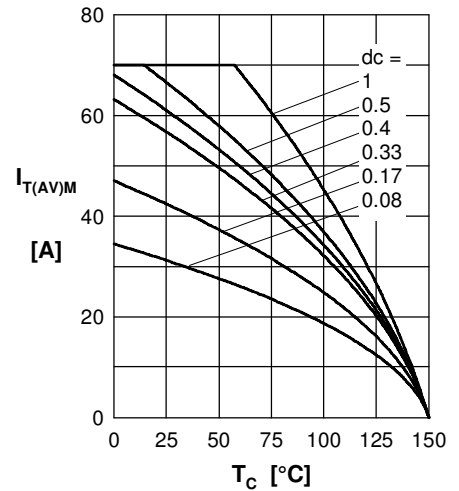


Fig. 6 Max. forward current at case temperature

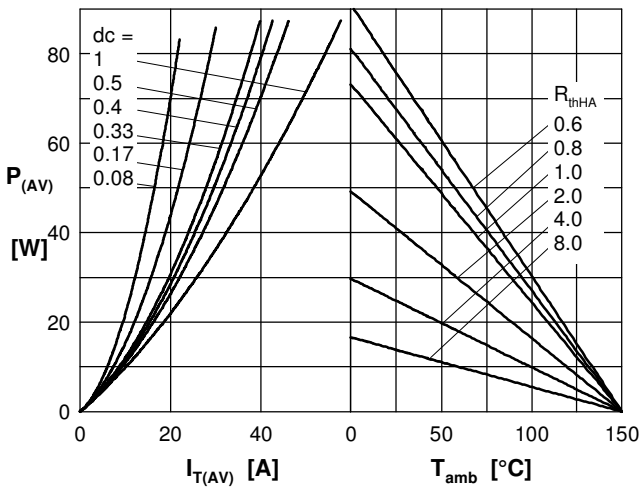


Fig. 7a Power dissipation versus direct output current  
Fig. 7b and ambient temperature

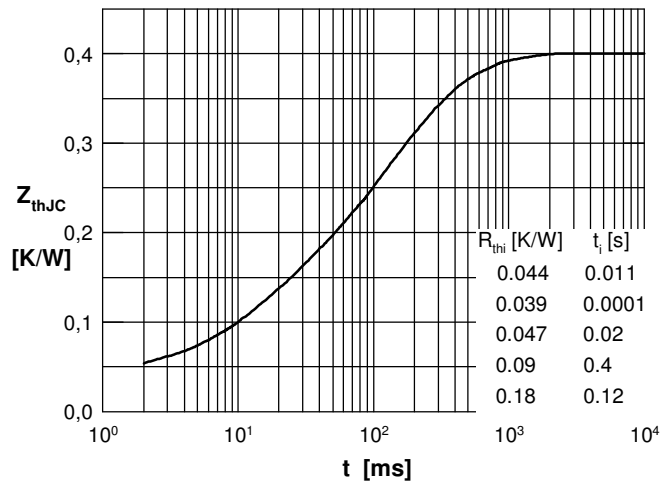


Fig. 8 Transient thermal impedance junction to case