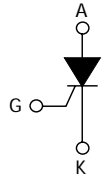
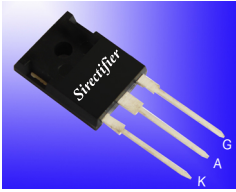
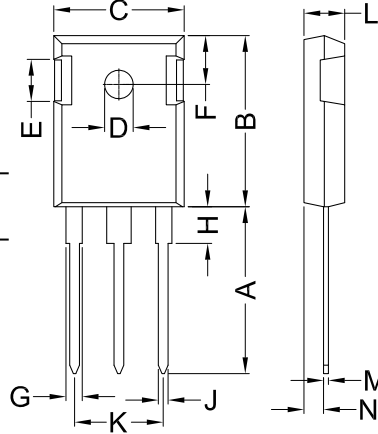


# STYN265 thru STYN1865

## Thyristor Discretes (SCRs)



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

K=Cathode, A=Anode, G=Cate

	VRRM	VRSM
	V	V
STYN265	200	300
STYN665	600	700
STYN865	800	900
STYN1065	1000	1100
STYN1265	1200	1300
STYN1665	1600	1700
STYN1865	1800	1900

Symbol	Test Conditions	Maximum Ratings	Unit
		STYN265~865 / STYN1065~1865	
$I_{TRMS}$ $I_{TAVM}$	$T_{VJ}=T_{VJM}$ $T_C=85^{\circ}C$ ; 180° sine	65 41	A
$I_{TSM}$	$T_{VJ}=45^{\circ}C$ $V_R=0$ t=10ms (50Hz), sine t=8.3ms (60Hz), sine	520 560	A
	$T_{VJ}=T_{VJM}$ $V_R=0$ t=10ms(50Hz), sine t=8.3ms(60Hz), sine	460 500	
$i^2t$	$T_{VJ}=45^{\circ}C$ $V_R=0$ t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1350 1300	A <sup>2</sup> s
	$T_{VJ}=T_{VJM}$ $V_R=0$ t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1050 1030	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ f=50Hz, $t_p=200\mu s$ $V_D=2/3V_{DRM}$ $I_G=0.15A$ $di_G/dt=0.15A/\mu s$ repetitive, $I_T=65A$	150	A/ $\mu s$
	non repetitive, $I_T=I_{TAVM}$	500	
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$ ; $R_{GK}=\infty$ ; method 1 (linear voltage rise) $V_{DR}=2/3V_{DRM}$	1000	V/ $\mu s$
$P_{GM}$	$T_{VJ}=T_{VJM}$ $I_T=I_{TAVM}$ $t_p=30\mu s$ $t_p=300\mu s$	10 5	W
		0.5	
$P_{GAV}$		10	W
$V_{RGM}$		10	V
$T_{VJ}$ $T_{VJM}$ $T_{stg}$		-40...+140 140 -40...+125	$^{\circ}C$
$M_d$ $F_c$	Mounting torque (M3) Mounting force with clip	0.8...1.2 20...120	Nm N
Weight	typical	6	g

# STYN265 thru STYN1865

## Thyristor Discretes (SCRs)

Symbol	Test Conditions	Characteristic Values		Unit
		STYN265~865	STYN1065~1865	
$I_R, I_D$	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	5		mA
$V_T$	$I_T=65A; T_{VJ}=25^{\circ}C$	1.50	1.60	V
$V_{TO}$	For power-loss calculations only ( $T_{VJ}=125^{\circ}C$ )	0.85		V
$r_T$		11		$m\Omega$
$V_{GT}$	$V_D=6V;$ $T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	1.5 1.6		V
$I_{GT}$	$V_D=6V;$ $T_{VJ}=25^{\circ}C$ $T_{VJ}=-40^{\circ}C$	100 200		mA
$V_{GD}$	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.2		V
$I_{GD}$		10		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	typ.	0.82	K/W
$a$	Max. acceleration, 50 Hz	50		$m/s^2$

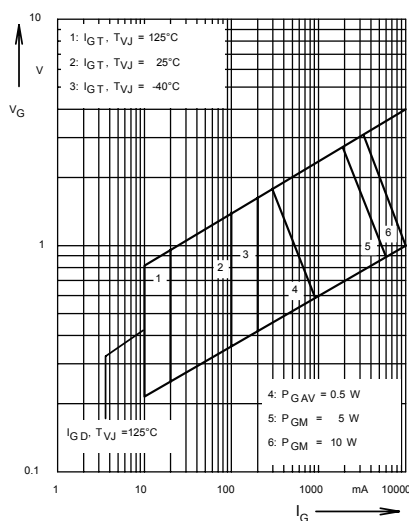


Fig. 1 Gate trigger range

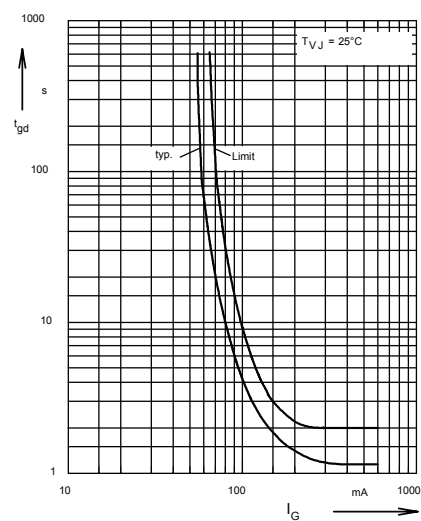


Fig. 2 Gate controlled delay time  $t_{gd}$

**Sirectifier**<sup>®</sup>

# STYN265 thru STYN1865

## Thyristor Discretes (SCRs)

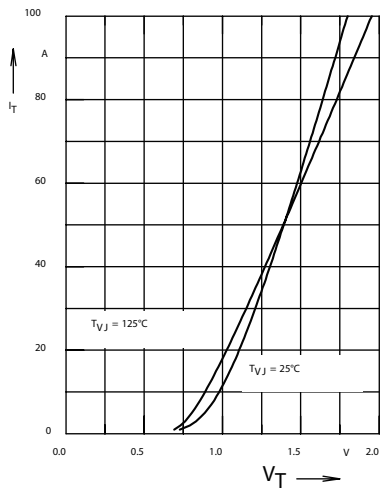


Fig. 3 Forward characteristics

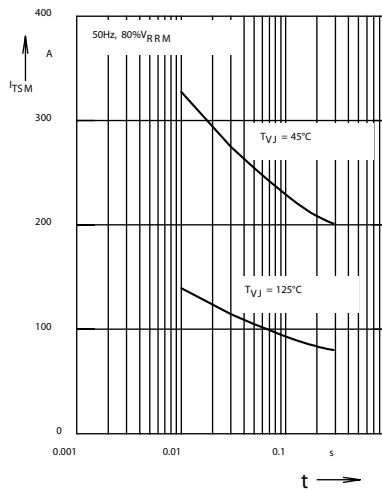


Fig. 4 Surge overload current  
 $I_{TSM}$ : crest value,  $t$ : duration

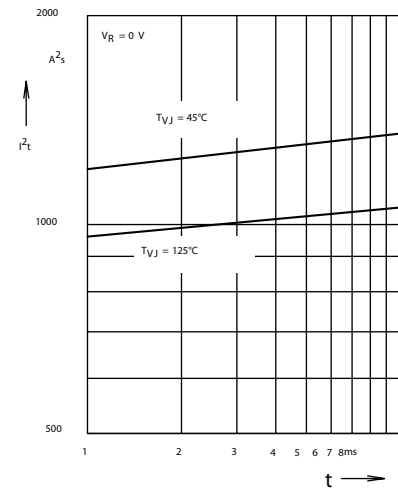


Fig. 5  $I^2t$  versus time (1-10 ms)

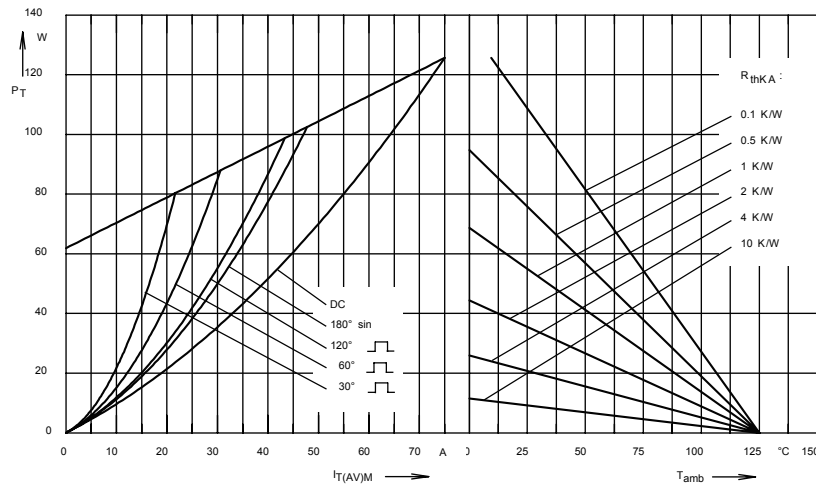


Fig. 6 Power dissipation versus forward current and ambient temperature

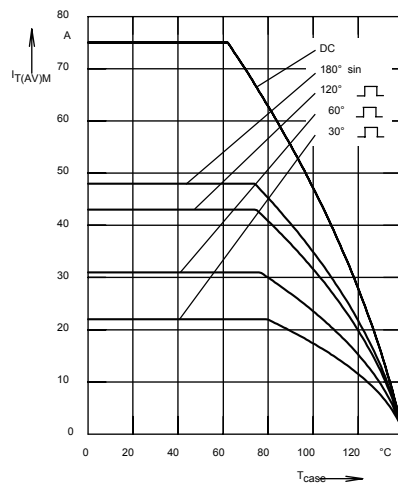


Fig. 7 Max. forward current at case temperature

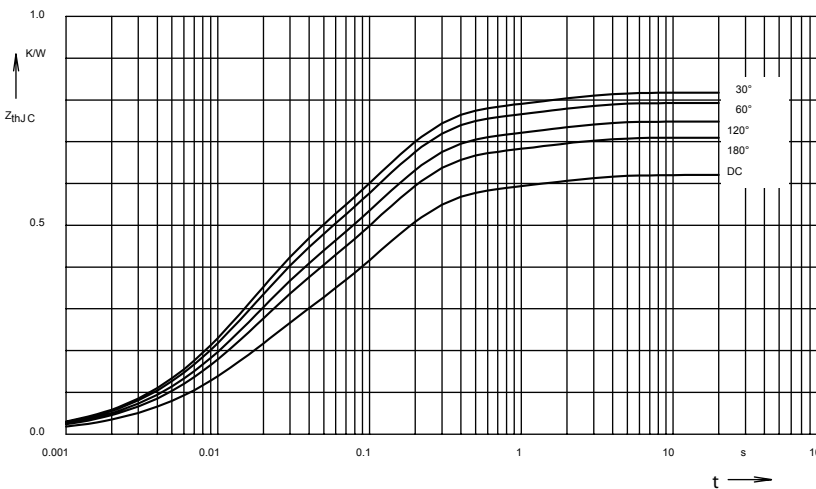


Fig. 8 Transient thermal impedance junction to case

$R_{thJC}$  for various conduction angles  $d$ :

$d$	$R_{thJC}$ (K/W)
DC	0.62
180	0.71
120	0.748
60	0.793
30	0.817

Constants for  $Z_{thJC}$  calculation:

$i$	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.206	0.013
2	0.362	0.118
3	0.052	1.488

