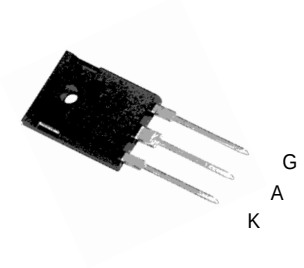
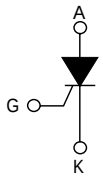
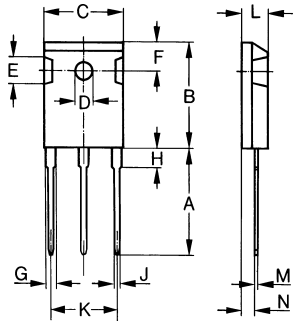
# STYN230 thru STYN830

## Discrete Thyristors(SCRs)




Dimensions TO-247AD




| Dim. | Millimeter Min. | Max. | Inches 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 |

| Symbol | Test Conditions | | Maximum Ratings STYN230~830 / STYN1030~1630 | Unit |
|---|---|---|---|---|
| $I_{TRMS}$<br>$I_{TAVM}$ | $T_{VJ}=T_{VJM}$<br>$T_C=85^oC$; $180^o$ sine | | 30<br>19 | A |
| $I_{TSM}$ | $T_{VJ}=45^oC$<br>$V_R=0$ | t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | 160<br>180 | A |
| | $T_{VJ}=T_{VJM}$<br>$V_R=0$ | t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine | 140<br>160 | |
| $i^2t$ | $T_{VJ}=45^oC$<br>$V_R=0$ | t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | 128<br>134 | $A^2s$ |
| | $T_{VJ}=T_{VJM}$<br>$V_R=0$ | t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine | 100<br>105 | |
| $(di/dt)_{cr}$ | $T_{VJ}=T_{VJM}$<br>f=50Hz, $t_p$=200us<br>$V_D=2/3V_{DRM}$<br>$I_G$=0.15A<br>$di_G/dt$=0.15A/us | repetitive, $I_T$=40A<br><br><br>non repetitive, $I_T=I_{TAVM}$ | 100<br><br><br>500 | A/us |
| $(dv/dt)_{cr}$ | $T_{VJ}=T_{VJM}$; $V_{DR}=2/3V_{DRM}$<br>$R_{GK}=\infty$; method 1 (linear voltage rise) | | 500 | V/us |
| $P_{GM}$ | $T_{VJ}=T_{VJM}$<br>$I_T=I_{TAVM}$ | $t_p$=30us<br>$t_p$=300us | 5<br>2.5 | W |
| $P_{GAV}$ | | | 0.5 | W |
| $V_{RGM}$ | | | 10 | V |
| $T_{VJ}$<br>$T_{VJM}$<br>$T_{stg}$ | | | -40...+125<br>125<br>-40...+125 | $^oC$ |
| $M_d$<br>$F_c$ | Mounting torque (M3)<br>Mounting force with clip | | 0.8...1.2<br>20...120 | Nm<br>N |
| Weight | | | 6 | g |

Sirectifier®

# STYN230 thru STYN830

## Discrete SCRs (Thyristors)

| Symbol | Test Conditions | Characteristic Values | Unit |
|---|---|---|---|
| $I_R$, $I_D$ | $T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$ | 5 | mA |
| $V_T$ | $I_T$=20A; $T_{VJ}=25^oC$ | 1.6 | V |
| $V_{TO}$ | For power-loss calculations only ($T_{VJ}=125^oC$) | 0.85 | V |
| $r_T$ | | 27 | mΩ |
| $V_{GT}$ | $V_D$=6V; $T_{VJ}=25^oC$<br>$T_{VJ}=-40^oC$ | 1.5<br>2.5 | V |
| $I_{GT}$ | $V_D$=6V; $T_{VJ}=25^oC$<br>$T_{VJ}=-40^oC$ | 25<br>50 | mA |
| $V_{GD}$ | $T_{VJ}=T_{VJM}$; $V_D=2/3V_{DRM}$ | 0.2 | V |
| $I_{GD}$ | | 3 | mA |
| $I_L$ | $T_{VJ}=25^oC$; $t_p$=10us;<br>$I_G$=0.1A; $di_G/dt$=0.1A/us | 75 | mA |
| $I_H$ | $T_{VJ}=25^oC$; $V_D$=6V; $R_{GK}=\infty$ | 50 | mA |
| $t_{gd}$ | $T_{VJ}=25^oC$; $V_D=1/2V_{DRM}$<br>$I_G$=0.1A; $di_G/dt$=0.1A/us | 2 | us |
| $R_{thJC}$ | DC current | 1.0 | K/W |
| $R_{thJH}$ | DC current | typ. 0.25 | K/W |
| a | Max. acceleration, 50 Hz | 50 | $m/s^2$ |