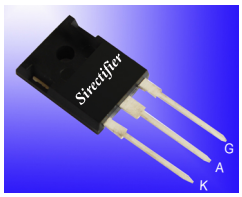
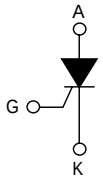
# STYN8110 thru STYN22110

## Thyristor Discretes (SCRs)

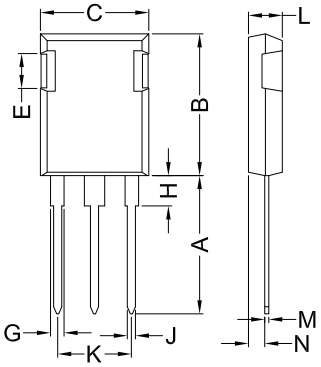



K=Cathode, A=Anode, G=Cate

| | $V_{RRM}$ V | $V_{RSM}$ V |
|---|---|---|
| **STYN8110** | 800 | 900 |
| **STYN10110** | 1000 | 1100 |
| **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 |
| 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 | Unit |
|---|---|---|---|---|
| $I_{TRMS}$<br>$I_{TAVM}$ | $T_{VJ}=T_{VJM}$<br>$T_C=85^oC$; 180° sine | | 110<br>70 | A |
| $I_{TSM}$ | $T_{VJ}=45^oC$<br>$V_R=0$ | t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | 720<br>780 | A |
| | $T_{VJ}=T_{VJM}$<br>$V_R=0$ | t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine | 610<br>660 | |
| $i^2t$ | $T_{VJ}=45^oC$<br>$V_R=0$ | t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | 2590<br>2530 | $A^2s$ |
| | $T_{VJ}=T_{VJM}$<br>$V_R=0$ | t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine | 1860<br>1810 | |
| $(di/dt)_{cr}$ | $T_{VJ}=T_{VJM}$<br>f=50Hz, $t_p$=200us<br>$V_D=2/3V_{DRM}$<br>$I_G$=0.3A<br>$di_G/dt$=0.3A/us | repetitive, $I_T=110A$<br><br><br>non repetitive, $I_T=I_{TAVM}$ | 150<br><br><br>500 | A/us |
| $(dv/dt)_{cr}$ | $T_{VJ}=T_{VJM}$;<br>$R_{GK}=\infty$; method 1 (linear voltage rise) | $V_{DR}=2/3V_{DRM}$ | 1000 | V/us |
| $P_{GM}$ | $T_{VJ}=T_{VJM}$<br>$I_T=I_{TAVM}$ | $t_p$=30us<br>$t_p$=300us | 10<br>5 | W |
| $P_{GAV}$ | | | 0.5 | W |
| $V_{RGM}$ | | | 10 | V |
| $T_{VJ}$<br>$T_{VJM}$<br>$T_{stg}$ | | | -40...+140<br>140<br>-40...+125 | °C |
| $M_d$<br>$F_c$ | Mounting torque (M3)<br>Mounting force with clip | | 0.8...1.2<br>20...120 | Nm<br>N |
| **Weight** | typical | | 6 | g |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# STYN8110 thru STYN22110

## Thyristor Discretes (SCRs)

| Symbol | Test Conditions | Characteristic Values | | Unit |
|---|---|---|---|---|
| | | STYN8110-16110 | STYN18110-22110 | |
| $I_R$, $I_D$ | $T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$; $V_D=V_{DRM}$ | 5 | | mA |
| $V_T$ | $I_T$=110A; $T_{VJ}$=25°C | 1.60 | 1.90 | V |
| $V_{TO}$ | For power-loss calculations only ($T_{VJ}$=125°C) | 0.90 | | V |
| $r_T$ | | 6.40 | | mΩ |
| $V_{GT}$ | $V_D$=6V; $T_{VJ}$=25°C<br>$T_{VJ}$=-40°C | 1.5<br>1.6 | | V |
| $I_{GT}$ | $V_D$=6V; $T_{VJ}$=25°C<br>$T_{VJ}$=-40°C | 100<br>200 | | mA |
| $V_{GD}$ | $T_{VJ}=T_{VJM}$; $V_D$=2/3$V_{DRM}$ | 0.2 | | V |
| $I_{GD}$ | | 10 | | mA |
| $I_L$ | $T_{VJ}$=25°C; $t_p$=10us;<br>$I_G$=0.3A; $di_G/dt$=0.3A/us | 450 | | mA |
| $I_H$ | $T_{VJ}$=25°C; $V_D$=6V; $R_{GK}$=∞ | 100 | | mA |
| $t_{gd}$ | $T_{VJ}$=25°C; $V_D$=1/2$V_{DRM}$<br>$I_G$=0.3A; $di_G/dt$=0.3A/us | 2 | | us |
| $R_{thJC}$ | DC current | 0.20 | | K/W |
| $R_{thJH}$ | DC current | typ. 0.25 | | K/W |
| a | Max. acceleration, 50 Hz | 50 | | $m/s^2$ |


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