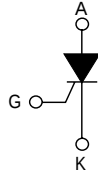
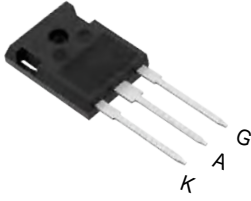
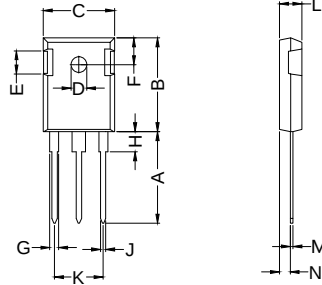


# STYN1230

## Discrete SCRs (Thyristors)



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 |
| ØD   | 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 |

|          | $V_{RRM}/V_{DRM}$<br>V | $V_{RSM}/V_{DSM}$<br>V |
|----------|------------------------|------------------------|
| STYN1230 | 1200                   | 1300                   |

| Symbol                             | Test Conditions                                                                                         |                                                 | Maximum Ratings                 | Unit        |
|------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------|-------------|
| $I_{TRMS}$<br>$I_{TAVM}$           | $T_{VJ}=T_{VJM}$<br>$T_C=85^{\circ}C$ ; 180° sine                                                       |                                                 | 30<br>19                        | A           |
| $I_{TSM}$                          | $T_{VJ}=45^{\circ}C$<br>$V_R=0$                                                                         | $t=10ms$ (50Hz), sine<br>$t=8.3ms$ (60Hz), sine | 200<br>215                      | A           |
|                                    | $T_{VJ}=T_{VJM}$<br>$V_R=0$                                                                             | $t=10ms$ (50Hz), sine<br>$t=8.3ms$ (60Hz), sine | 180<br>195                      |             |
| $i^2t$                             | $T_{VJ}=45^{\circ}C$<br>$V_R=0$                                                                         | $t=10ms$ (50Hz), sine<br>$t=8.3ms$ (60Hz), sine | 200<br>195                      | $A^2s$      |
|                                    | $T_{VJ}=T_{VJM}$<br>$V_R=0$                                                                             | $t=10ms$ (50Hz), sine<br>$t=8.3ms$ (60Hz), sine | 162<br>158                      |             |
| $(di/dt)_{cr}$                     | $T_{VJ}=T_{VJM}$<br>$f=50Hz$ , $t_p=200\mu s$<br>$V_D=2/3V_{DRM}$<br>$I_G=0.3A$<br>$di_G/dt=0.3A/\mu s$ | repetitive, $I_T=40A$                           | 150                             | A/ $\mu s$  |
|                                    |                                                                                                         | non repetitive, $I_T=I_{TAVM}$                  | 500                             |             |
| $(dv/dt)_{cr}$                     | $T_{VJ}=T_{VJM}$ ;<br>$R_{GK}=\infty$ ; method 1 (linear voltage rise)                                  | $V_{DR}=2/3V_{DRM}$                             | 1000                            | V/ $\mu s$  |
| $P_{GM}$                           | $T_{VJ}=T_{VJM}$<br>$I_T=I_{TAVM}$                                                                      | $t_p=30\mu s$<br>$t_p=300\mu s$                 | 10<br>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 | $^{\circ}C$ |
| $M_d$<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           |

**Sirectifier®**

# STYN1030

## Discrete SCRs (Thyristors)

| Symbol     | Test Conditions                                                                | Characteristic Values<br>STYN1030~1830 / STYN2030~2230 | Unit             |
|------------|--------------------------------------------------------------------------------|--------------------------------------------------------|------------------|
| $I_R, I_D$ | $T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$                                     | 10                                                     | mA               |
| $V_T$      | $I_T=30A; T_{VJ}=25^{\circ}C$                                                  | 1.75 / 1.95                                            | V                |
| $V_{TO}$   | For power-loss calculations only ( $T_{VJ}=125^{\circ}C$ )                     | 1.1                                                    | V                |
| $r_T$      |                                                                                | 40                                                     | m $\Omega$       |
| $V_{GT}$   | $V_D=6V; T_{VJ}=25^{\circ}C$<br>$T_{VJ}=-40^{\circ}C$                          | 1.0<br>1.2                                             | V                |
| $I_{GT}$   | $V_D=6V; T_{VJ}=25^{\circ}C$<br>$T_{VJ}=-40^{\circ}C$<br>$T_{VJ}=125^{\circ}C$ | 65<br>80<br>50                                         | mA               |
| $V_{GD}$   | $T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$                                               | 0.2                                                    | V                |
| $I_{GD}$   |                                                                                | 5                                                      | mA               |
| $I_L$      | $T_{VJ}=25^{\circ}C; t_p=10\mu s;$<br>$I_G=0.3A; di_G/dt=0.3A/\mu s$           | 150                                                    | mA               |
| $I_H$      | $T_{VJ}=25^{\circ}C; V_D=6V; R_{GK}=\infty$                                    | 100                                                    | mA               |
| $t_{gd}$   | $T_{VJ}=25^{\circ}C; V_D=1/2V_{DRM}$<br>$I_G=0.3A; di_G/dt=0.3A/\mu s$         | 2                                                      | $\mu s$          |
| $R_{thJC}$ | 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

### Package: TO-247AD

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

### Applications:

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

### Product Reliability

- IEC147-4
- IEC68-2-14
- IEC68-2-20
- IEC68-2-27
- CECC50000-4.4.3



## ORDERING INFORMATION

| Part Number | Package  | Shipping     | Marking Code |
|-------------|----------|--------------|--------------|
| STYN1230    | TO-247AD | 30pcs / Tube | STYN1230     |

**Packing:** 30pcs per tube, 20 tubes per box (=600pcs) , 6 boxes per carton (=3600pcs)

**Sirectifier®**