

# TO-92 Plastic-Encapsulate Thyristors

## **XL1225**

Silicon Controlled Rectifier

### Features

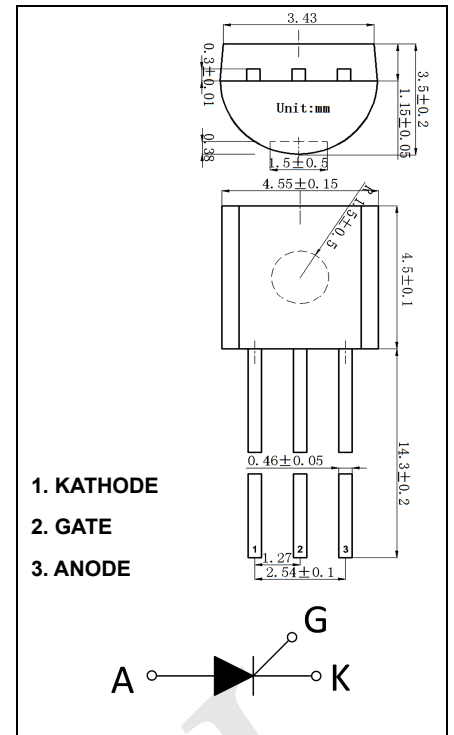
- Intended for low-cost high-volume applications.

### Applications

- Applied to high Voltage control circuit.

### Description

Thyristor in a TO-92 Plastic Package.



### Maximum Ratings ( $T_a=25^\circ\text{C}$ unless otherwise noted)

| Symbol                   | Parameter                          | Test Conditions  | Value     | Unit             |
|--------------------------|------------------------------------|--|-----------|------------------|
| $V_{DRM}$ ,<br>$V_{RRM}$ | Repetitive peak off-state voltages | $T_j = 40$ to $125^\circ\text{C}$ ( $r_{gk} = 1\text{k}\Omega$ ) | 400       | V                |
| $I_{T(RMS)}$             | RMS on-state current               | $T_C = 40^\circ\text{C}$   | 0.8       | A                |
| $I_{T(AV)}$              | Average on-state current           | Half cycle = 180 $T_C = 40^\circ\text{C}$                        | 0.5       | V                |
| $V_{GRM}$                | Peak Reverse Gate Voltage          | $I_{GR} = 10\mu\text{A}$   | 1.0       | A                |
| $I_{GM}$                 | Peak gate current                  | 10 $\mu\text{s}$ Max   | 0.1       | A                |
| $P_{GM}$                 | Peak gate power                    | 20ms Max   | 150       | mW               |
| $T_j$                    | Junction Temperature               |  | -40 ~ 125 | $^\circ\text{C}$ |
| $T_{stg}$                | Storage Temperature                |  | -55 ~ 150 | $^\circ\text{C}$ |
| $T_{SLD}$                | Soldering Temperature              | 6mm from case 10s Max  | 250       | $^\circ\text{C}$ |

### Electrical Characteristics ( $T_a=25^\circ\text{C}$ unless otherwise specified)

| Symbol      | Parameter                         | Test Conditions   | Min | Typ | Max  | Unit          |
|-------------|-----------------------------------|---|-----|-----|------|---------------|
| $I_{DRM}$   | Repetitive peak off-state current | $V_{DRM}$ ( $R_{GK} = 1\text{k}\Omega$ ), $T_j = 125^\circ\text{C}$ |     |     | 0.1  | mA            |
| $I_{RRM}$   | Repetitive peak off-state current | $V_{DRM}$ ( $R_{GK} = 1\text{k}\Omega$ ), $T_j = 25^\circ\text{C}$  |     |     | 1    | $\mu\text{A}$ |
| $V_T$       | Repetitive peak on-state voltage  | $I_T = 0.4\text{A}$   |     |     | 1.4  | V             |
|             |                                   | $I_T = 0.8\text{A}$   |     |     | 2.2  |               |
| $V_{T(TO)}$ | On state threshold voltage        | $T_j = 125^\circ\text{C}$   |     |     | 0.95 | V             |
| $R_t$       | On state slops resistance         | $T_j = 125^\circ\text{C}$   |     |     | 600  | m             |
| $I_{GT}$    | Gate trigger current              | $V_D = 7.0\text{V}$   |     |     | 200  | $\mu\text{A}$ |
| $V_{GT}$    | Gate trigger voltage              | $V_D = 7.0\text{V}$   |     |     | 0.8  | V             |
| $I_H$       | Holding current                   | $R_{GK} = 1\text{k}\Omega$  |     |     | 5    | mA            |
| $I_L$       | Latching current                  | $R_{GK} = 1\text{k}\Omega$  |     |     | 6    | mA            |

# Electrical Characteristic Curve

