

LSCR90 (Chip Size: 12.4×12.4 mm)

90A Thyristor High Voltage, Phase Control SCR Chip

Features

- 150 °C maximum operating junction temperature

Applications

Typical usage is in input rectification crowbar (soft start) and AC switch motor control, UPS, welding, and battery charge.

Description

LSCR90 high voltage series of silicon controlled rectifiers are specifically designed for medium power switching, and phase control applications. The glass passivation technology used, has reliable operation up to 150 °C junction temperature.



| MAJOR RATINGS AND CHARACTERISTICS | | | | |
|--|-------------------|---------------------------------------|-------------|-------|
| PARAMETER | SYMBOL | TEST CONDITIONS | VALUES | UNITS |
| Peak repetitive reverse voltage | V_{RRM}/V_{DRM} | | 1600 | V |
| On-state voltage | V_T | 80 A, $T_J = 125\text{ °C}$, typical | 1.4 | |
| Average rectified forward current | $I_{T(AV)}$ | | 90 | A |
| Maximum continuous RMS on-state current | I_{RMS} | | 126 | |
| Non-repetitive peak surge current | I_{TSM} | | 1620 | |
| Maximum operating junction and storage temperature range | T_J, T_{Stg} | | -40 to +125 | °C |

| ABSOLUTE MAXIMUM RATINGS | | | | | | |
|--|-------------------|---|-------------------------------------|------|------|------------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | TYP. | MAX. | UNITS |
| Maximum average on-state current | $I_{T(AV)}$ | $T_C = 113\text{ °C}$, 180° conduction half sine wave | | - | 90 | A |
| Maximum continuous RMS on-state current as AC switch | $I_{T(RMS)}$ | | | - | 126 | |
| Peak, one-cycle non-repetitive surge current | I_{TSM} | 10 ms sine pulse, rated V_{RRM} applied | Initial $T_J = T_{J\text{maximum}}$ | - | 1620 | |
| | | 10 ms sine pulse, no voltage reapplied | | - | 1000 | |
| Rate of rise of turned-on current | di/dt | $T_J = 125\text{ °C}$, $V_R = 1000\text{ V}$, $I_T = 100\text{ A}$, $I_{gt} = 450\text{ mA}$, $V_{GT} = 2.5\text{ V}$ | | - | 500 | A/ μ s |
| Holding current | I_H | Anode supply = 6 V, resistive load, $T_J = 25\text{ °C}$ | | - | 200 | mA |
| Latching current | I_L | | | - | 400 | |
| Reverse and direct leakage current | I_{RRM}/I_{DRM} | $T_J = 25\text{ °C}$ | | 50 | 200 | μ A |
| | | $T_J = 125\text{ °C}$ | | 10 | 60 | mA |
| Required DC gate voltage to trigger | V_{GT} | $T_J = 25\text{ °C}$ | Anode supply = 6 V resistive load | - | 1.5 | V |
| Required DC gate to trigger | I_{GT} | $T_J = 25\text{ °C}$ | Anode supply = 6 V resistive load | 30 | 60 | mA |
| DC gate voltage not to trigger | V_{GD} | $T_J = 125\text{ °C}$, $V_{DRM} = 80\%$ rated value | | - | 0.20 | V |
| DC gate current not to trigger | I_{GD} | | | - | 5 | mA |