

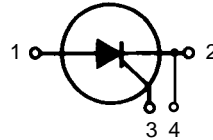
Phase Control Thyristor

CS 630

$I_{TRMS} = 1400 \text{ A}$
 $I_{TAVM} = 630 \text{ A}$
 $V_{RRM} = 1200 - 1600$

V

| V_{RSM} | V_{RRM} | Type |
|-----------|-----------|--------------|
| V_{DSM} | V_{DRM} | |
| V | V | |
| 1200 | 1200 | CS 630-12io1 |
| 1400 | 1400 | CS 630-14io1 |
| 1600 | 1600 | CS 630-16io1 |



| Symbol | Test Conditions | Maximum Ratings |
|----------------|--|--|
| I_{TRMS} | $T_C = 85^\circ\text{C}; 180^\circ \text{ sine}$ | 1400 A |
| I_{TAVM} | | 630 A |
| I_{TSM} | $T_{VJ} = 45^\circ\text{C}; V_R = 0$ | $t = 10 \text{ ms (50 Hz), sine}$ 11500 A |
| | | $t = 8.3 \text{ ms (60 Hz), sine}$ 12600 A |
| | $T_{VJ} = T_{VJM}; V_R = 0$ | $t = 10 \text{ ms (50 Hz), sine}$ 10500 A |
| | | $t = 8.3 \text{ ms (60 Hz), sine}$ 11500 A |
| $\int i^2 dt$ | $T_{VJ} = 45^\circ\text{C}; V_R = 0$ | $t = 10 \text{ ms (50 Hz), sine}$ 661250 A ² s |
| | | $t = 8.3 \text{ ms (60 Hz), sine}$ 793800 A ² s |
| | $T_{VJ} = T_{VJM}; V_R = 0$ | $t = 10 \text{ ms (50 Hz), sine}$ 551250 A ² s |
| | | $t = 8.3 \text{ ms (60 Hz), sine}$ 661250 A ² s |
| $(di/dt)_{cr}$ | $T_{VJ} = T_{VJM}; f = 5 \text{ Hz}, t_p = 200 \text{ ms}; V_D = 0.67 V_{DRM}; I_G = 2 \text{ A}; di_G/dt = 2 \text{ A}/\mu\text{s}$ | repetitive, $I_T = 2500 \text{ A}$ 320 A/ μs |
| $(dv/dt)_{cr}$ | $T_{VJ} = T_{VJM}; R_{GK} = \infty; \text{method 1 (linear voltage rise)}$ | $V_{DR} = 2/3 V_{DRM}$ 1000 V/ μs |
| P_{GM} | $T_{VJ} = T_{VJM}; I_T = I_{TAVM}$ | $t_p = 30 \mu\text{s}$ 120 W |
| | | $t_p = 500 \mu\text{s}$ 60 W |
| | | $t_p = 10 \text{ ms}$ 16 W |
| V_{RGM} | | 10 V |
| T_{VJ} | | -40...+125 °C |
| T_{VJM} | | 125 °C |
| T_{stg} | | -40...+ 50 °C |
| M_d | Mounting force | 16.0 .. 19.0 kN |
| Weight | | 210 g |

Features

- Thyristor for line frequency
- International standard package
- Long-term stability of blocking voltages
- Gate and auxiliary cathode pin connection
- Amplifying gate

Typical Applications

- DC Motor control
- Power converter
- AC power controller

Data according to DIN/IEC 747-6
 IXYS reserves the right to change limits, test conditions and dimensions

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| Symbol | Test Conditions | Characteristic Values |
|------------|--|--------------------------|
| I_R, I_D | $T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$ | ≤ 50 mA |
| V_T | $I_T = 3.14 I_{TAVM}; T_{VJ} = 25^\circ\text{C}$ | ≤ 1.95 V |
| V_{T0} | For power-loss calculations only ($T_{VJ} = 125^\circ\text{C}$) | 1.05 V |
| r_T | | 0.45 mW |
| V_{GT} | $V_D = 12$ V; $T_{VJ} = 25^\circ\text{C}$ | ≤ 2.5 V |
| I_{GT} | $V_D = 12$ V; $T_{VJ} = 25^\circ\text{C}$ | ≤ 280 mA |
| V_{GD} | $T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$ | ≤ 0.25 V |
| I_L | $T_{VJ} = 25^\circ\text{C}; t_p = 10$ μs $I_G = 2$ A; $di_G/dt = 2$ A/ μs | ≤ 1.5 A |
| I_H | $T_{VJ} = 25^\circ\text{C}; V_D = 12$ V; $R_{GK} = \infty$ | ≤ 0.75 A |
| t_{gd} | $T_{VJ} = 25^\circ\text{C}; V_D = 500$ V $I_G = 2$ A; $di_G/dt = 2$ A/ μs | ≤ 2.0 μs |
| t_q | $T_{VJ} = T_{VJM}; I_T = 630$ A; $t_p = 200$ μs ; $di/dt = -10$ A/ μs typ. $V_R = 100$ V; $dv/dt = 50$ V/ μs ; $V_D = 2/3 V_{DRM}$ | 150 μs |
| R_{thJC} | | 0.035 K/W |

Dimensions in mm (1 mm = 0.0394")
