

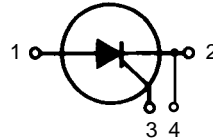
# Phase Control Thyristor

# 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 <sup>2</sup> s
		$t = 8.3 \text{ ms (60 Hz), sine}$ 793800 A <sup>2</sup> s
	$T_{VJ} = T_{VJM}; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$ 551250 A <sup>2</sup> s
		$t = 8.3 \text{ ms (60 Hz), sine}$ 661250 A <sup>2</sup> 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/ $\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}; R_{GK} = \infty; \text{method 1 (linear voltage rise)}$	$V_{DR} = 2/3 V_{DRM}$ 1000 V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = T_{VJM}; I_T = I_{TAVM}$	$t_p = 30 \mu\text{s}$ 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
$I_{R'}, I_D$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq 50$ mA
$V_T$	$I_T = 3.14 I_{TAVM}; T_{VJ} = 25^\circ\text{C}$	$\leq 1.95$ 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; $T_{VJ} = 25^\circ\text{C}$	$\leq 2.5$ V
$I_{GT}$	$V_D = 12$ V; $T_{VJ} = 25^\circ\text{C}$	$\leq 280$ mA
$V_{GD}$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	$\leq 0.25$ V
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10$ $\mu\text{s}$ $I_G = 2$ A; $di_G/dt = 2$ A/ $\mu\text{s}$	$\leq 1.5$ A
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 12$ V; $R_{GK} = \infty$	$\leq 0.75$ A
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = 500$ V $I_G = 2$ A; $di_G/dt = 2$ A/ $\mu\text{s}$	$\leq 2.0$ $\mu\text{s}$
$t_q$	$T_{VJ} = T_{VJM}; I_T = 630$ A; $t_p = 200$ $\mu\text{s}$ ; $di/dt = -10$ A/ $\mu\text{s}$ typ. $V_R = 100$ V; $dv/dt = 50$ V/ $\mu\text{s}$ ; $V_D = 2/3 V_{DRM}$	150 $\mu\text{s}$
$R_{thJC}$		0.035 K/W

### Dimensions in mm (1 mm = 0.0394")

