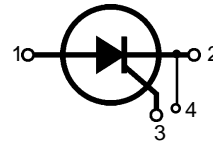


# Phase Control Thyristors

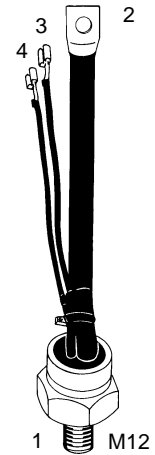
$V_{RRM} = 1200-1600 \text{ V}$   
 $I_{T(RMS)} = 260 \text{ A}$   
 $I_{T(AV)M} = 164 \text{ A}$

$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V	Type
1300	1200	CS 142-12io8
1700	1600	CS 142-16io8

Not for new application



TO-209AC  
(TO-94)



1 = Anode, 2 = Cathode,  
3 = Gate, 4 = Auxiliary Cathode

Symbol	Test Conditions	Maximum Ratings
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$	260 A
$I_{T(AV)M}$	$T_{case} = 85^{\circ}\text{C}; 180^{\circ}$ sine	140 A
	$T_{case} = 75^{\circ}\text{C}; 180^{\circ}$ sine	164 A
$I_{TSM}$	$T_{VJ} = 45^{\circ}\text{C}; V_R = 0$	t = 10 ms (50 Hz), sine 3100 A t = 8.3 ms (60 Hz), sine 3270 A
	$T_{VJ} = T_{VJM}; V_R = 0$	t = 10 ms (50 Hz), sine 2600 A t = 8.3 ms (60 Hz), sine 2800 A
$I^2t$	$T_{VJ} = 45^{\circ}\text{C}; V_R = 0$	t = 10 ms (50 Hz), sine 48 000 A <sup>2</sup> s t = 8.3 ms (60 Hz), sine 45 000 A <sup>2</sup> s
	$T_{VJ} = T_{VJM}; V_R = 0$	t = 10 ms (50 Hz), sine 33 800 A <sup>2</sup> s t = 8.3 ms (60 Hz), sine 32 000 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}; f = 50\text{Hz}; t_p = 200\mu\text{s}; V_D = 1/2 V_{DRM}; I_G = 0.5 \text{ A}; di_G/dt = 0.5 \text{ A}/\mu\text{s}$	repetitive, $I_T = 500 \text{ A}$ 150 A/ $\mu\text{s}$
	$T_{VJ} = T_{VJM}; R_{GK} = \infty; \text{method 1 (linear voltage rise)}$	non repetitive, $I_T = I_{T(AV)M}$ 500 A/ $\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}; V_{DR} = 2/3 V_{DRM}; R_{GK} = \infty; \text{method 1 (linear voltage rise)}$	1000 V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = T_{VJM}; t_p = 30 \mu\text{s}$	120 W
	$I_T = I_{T(AV)M}; t_p = 500 \mu\text{s}$	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...+125 °C
$M_d$	Mounting torque	16-20 Nm
		142-177 lb.in.
Weight		110 g

### Features

- Thyristor for line frequencies
- International standard package JEDEC TO-209AC
- Planar glassivated chip
- Long-term stability of blocking currents and voltages
- Gate and auxiliary cathode pin connection

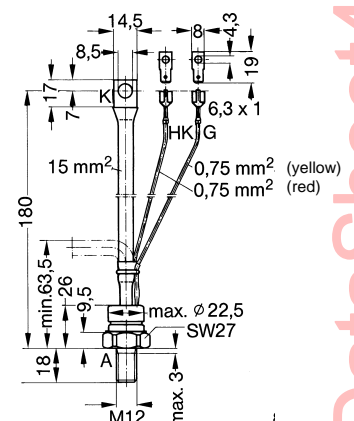
### Applications

- Motor control
- Power converter
- AC power controller

### Advantages

- Space and weight savings
- Simple mounting
- Improved temperature and power cycling

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



Data according to IEC 60747

IXYS reserves the right to change limits, test conditions and dimensions

Symbol	Test Conditions	Characteristic Values	
$I_R, I_D$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq$	15 mA
$V_T$	$I_T = 300 \text{ A}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.35 V
$V_{T0}$	For power-loss calculations only ( $T_{VJ} = 125^\circ\text{C}$ )		1.0 V
$r_T$			1.7 m $\Omega$
$V_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	$\leq$	2.5 V
	$T_{VJ} = -40^\circ\text{C}$	$\leq$	3.5 V
$I_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	$\leq$	150 mA
	$T_{VJ} = -40^\circ\text{C}$	$\leq$	200 mA
$V_{GD}$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	$\leq$	0.2 V
$I_{GD}$		$\leq$	10 mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.5 \text{ A}; di_G/dt = 0.5 \text{ A}/\mu\text{s}$	$\leq$	300 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	200 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.5 \text{ A}; di_G/dt = 0.5 \text{ A}/\mu\text{s}$	$\leq$	2 $\mu\text{s}$
$t_q$	$T_{VJ} = T_{VJM}; I_T = 50 \text{ A}, t_p = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 20 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$	typ.	150 $\mu\text{s}$
$R_{thJC}$	DC current		0.18 K/W
$R_{thJH}$	DC current		0.22 K/W
$d_s$	Creepage distance on surface		10.5 mm
$d_A$	Strike distance through air		10.5 mm
$a$	Max. acceleration, 50 Hz		50 m/s <sup>2</sup>

**Accessories:**

Nut M12 DIN 439/SW27

Lock washer A12 DIN 128