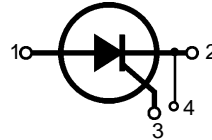


Phase Control Thyristors

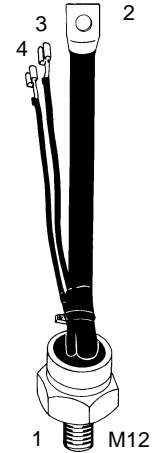
$V_{RRM} = 1200-1600 \text{ V}$
 $I_{T(RMS)} = 260 \text{ A}$
 $I_{T(AV)M} = 164 \text{ A}$

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 t = 8.3 ms (60 Hz), sine	3100 A 3270 A
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	2600 A 2800 A
I^2t	$T_{VJ} = 45^{\circ}\text{C}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	48 000 A ² s 45 000 A ² s
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	33 800 A ² s 32 000 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 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/ μs
		non repetitive, $I_T = I_{T(AV)M}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	$V_{DR} = 2/3 V_{DRM}$	1000 V/ μs
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

Data according to IEC 60747

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

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

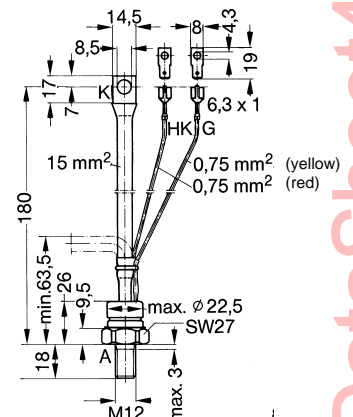
Applications

- 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")



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 Ω
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 μs
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 μs
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 ²

Accessories:

Nut M12 DIN 439/SW27

Lock washer A12 DIN 128