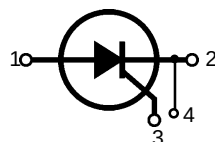


Phase Control Thyristors

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



$$V_{RRM} = 1200-1600 \text{ V}$$

$$I_{T(RMS)} = 260 \text{ A}$$

$$I_{T(AV)M} = 164 \text{ A}$$

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}	$T_{VJ} = 45^{\circ}\text{C};$	$t = 10\text{ ms (50 Hz), sine}$	3100	A
	$V_R = 0$	$t = 8.3\text{ ms (60 Hz), sine}$	3270	A
	$T_{VJ} = T_{VJM}$	$t = 10\text{ ms (50 Hz), sine}$	2600	A
	$V_R = 0$	$t = 8.3\text{ ms (60 Hz), sine}$	2800	A
I^2t	$T_{VJ} = 45^{\circ}\text{C}$	$t = 10\text{ ms (50 Hz), sine}$	48 000	A^2s
	$V_R = 0$	$t = 8.3\text{ ms (60 Hz), sine}$	45 000	A^2s
	$T_{VJ} = T_{VJM}$	$t = 10\text{ ms (50 Hz), sine}$	33 800	A^2s
	$V_R = 0$	$t = 8.3\text{ ms (60 Hz), sine}$	32 000	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $f = 50\text{ Hz}, t_p = 200\mu\text{s}$ $V_D = 1/2 V_{DRM}$ $I_G = 0.5\text{ A}$ $di_G/dt = 0.5\text{ A}/\mu\text{s}$	repetitive, $I_T = 500\text{ A}$	150	$\text{A}/\mu\text{s}$
		non repetitive, $I_T = I_{T(AV)M}$	500	$\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM};$ $R_{GK} = \infty; \text{method 1 (linear voltage rise)}$	$V_{DR} = 2/3 V_{DRM}$	1000	$\text{V}/\mu\text{s}$
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	$^{\circ}\text{C}$
T_{VJM}			125	$^{\circ}\text{C}$
T_{stg}			-40...+125	$^{\circ}\text{C}$
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

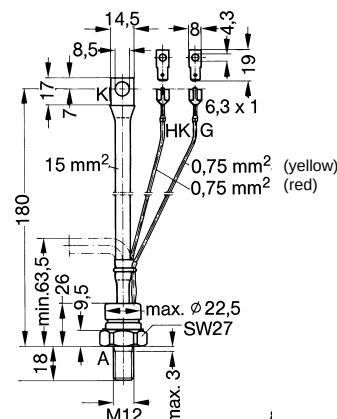
Applications

- 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