Phase Control Thyristors

V_{RRM} = 1200-1600 V
$I_{T(RMS)}$ = 160 A
$I_{T(AV)M}$ = 100 A

V_{RSM} V_{DSM}	V_{RRM} V_{DRM}	Type
V	V	
1300	1200	CS 72-12io8
1700	1600	CS 72-16io8

Not for new application

TO-209AC
(TO-94)
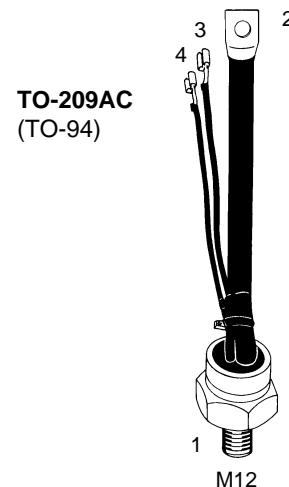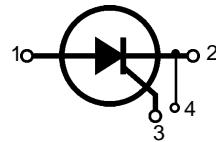
1 = Anode, 2 = Cathode,
3 = Gate, 4 = Auxiliary Cathode

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

Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$ $I_{T(AV)M}$	T_{VJ} = T_{VJM} T_{case} = 85°C; 180° sine T_{case} = 65°C; 180° sine		160 75 100	A A A
I_{TSM}	T_{VJ} = 45°C; V_R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	2000 2130	A A
	T_{VJ} = T_{VJM} V_R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1750 1850	A A
I^2t	T_{VJ} = 45°C V_R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	20 000 19 000	A²s A²s
	T_{VJ} = T_{VJM} V_R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	15 000 14 200	A²s A²s
$(di/dt)_{cr}$	T_{VJ} = T_{VJM} f = 50 Hz, t_P = 200 µs V_D = 1/2 V_{DRM} I_G = 0.5 A di_G/dt = 0.5 A/µs	repetitive, I_T = 225 A	100	A/µs
		non repetitive, I_T = $I_{T(AV)M}$	500	A/µs
$(dv/dt)_{cr}$	T_{VJ} = T_{VJM}; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	T_{VJ} = T_{VJM} I_T = $I_{T(AV)M}$	t_P = 30 µs t_P = 500 µs	30 15	W W
$P_{G(AV)}$			1	W
V_{RGM}			10	V
T_{VJ} T_{VJM} T_{stg}			-40...+125 125 -40...+125	°C °C °C
M_d	Mounting torque		16-20 142-177	Nm lb.in.
Weight			110	g

Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

Dimensions in mm (1 mm = 0.0394")

K — 15 mm²
0,75 mm² (yellow)
0,75 mm² (red)
HK G
6,3 x 1
max. ⌀ 22,5
SW27
A
M12
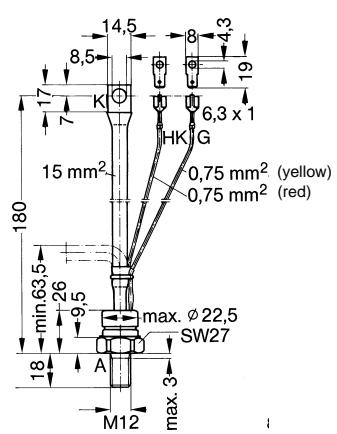
Symbol	Test Conditions	Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$	$\leq$	15	mA
V_T	I_T = 300 A; $T_{VJ} = 125°C$	$\leq$	1.78	V
V_{T0}	For power-loss calculations only ($T_{VJ} = 125°C$)		1.0	V
r_T			2.6	mΩ
V_{GT}	$V_D = 6$ V; $T_{VJ} = 25°C$	$\leq$	3.0	V
	$T_{VJ} = -40°C$	$\leq$	3.5	V
I_{GT}	$V_D = 6$ V; $T_{VJ} = 25°C$	$\leq$	150	mA
	$T_{VJ} = -40°C$	$\leq$	200	mA
V_{GD}	$T_{VJ} = T_{VJM}$; $V_D = 2/3\ V_{DRM}$	$\leq$	0.3	V
I_{GD}		$\leq$	3	mA
I_L	$T_{VJ} = 25°C$; $t_P = 10$ µs $I_G = 0.5$ A; $di_G/dt = 0.5$ A/µs	$\leq$	300	mA
I_H	$T_{VJ} = 25°C$; $V_D = 6$ V; $R_{GK} = \infty$	$\leq$	200	mA
t_{gd}	$T_{VJ} = 25°C$; $V_D = 1/2\ V_{DRM}$ $I_G = 0.5$ A; $di_G/dt = 0.5$ A/µs	$\leq$	2	µs
t_q	$T_{VJ} = T_{VJM}$; $I_T = 75$ A, $t_P = 300$ µs; $di/dt = -20$ A/µs $V_R = 100$ V; $dv/dt = 10$ V/µs; $V_D = 2/3\ V_{DRM}$	typ.	150	µs
R_{thJC}	DC current		0.36	K/W
R_{thJH}	DC current		0.46	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