

Thyristors, SCRs

(SCR = Silicon Controlled Rectifier)

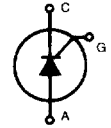
Phase Control Thyristors

Thyristors are very rugged devices. Compared to all other controlled semi-conductor components, they feature the highest current capacity per chip area, especially at high voltage. They are mainly used as control devices in 50 and 60 Hz AC mains equipment.

Principal applications are static converter circuits for speed control of DC-drives, or switching and control functions for temperature, lighting, soft-start, etc. in single-phase and three-phase AC switch configurations (see also page 75). Phase

control thyristors are designed for optimal forward conduction and reverse blocking characteristics, due to only moderate requirements for turn-on and turn-off parameters.

Phase Control Thyristors



$I_{TAV} = 16 - 60 \text{ A}$

Type	V_{RRM} V_{DRM}	I_{TAV} $T_C = 85^\circ\text{C}$	I_{TRMS}	I_{TSM} 45°C 10 ms	$\frac{dv}{dt}$ C	V_{TO}	r_T	T_{VJM}	R_{thJC}	R_{thCH}	Fig. No.	Package style
► New	V	A	A	A	V/μs	V	m	°C	K/W	K/W		Outline drawings on page 91-100
CS 8-08 io2 CS 8-12 io2	800 1200	16	25	250	1000	1.0	18	125	1.5	1.0	21	Fig. 3 TO-220 AB Weight = 4 g
CS 19-08 ho1 CS 19-12 ho1	800 1200	19	29	160	500	0.85	27.0	125	1.0	0.25	3	
CS 19-08 ho1S CS 19-12 ho1S	800 1200	19	29	160	500	0.85	27.0	125	1.0	0.25	5a	
► CS 19-08 ho1C ► CS 19-12 ho1C	800 1200	13	35	100	500	0.87	29	125	1.7	0.6	83	
CS 20-12 io1 CS 20-14 io1 CS 20-16 io1	1200 1400 1600	19	30	200	1000	1.1	40	125	0.62	0.2	6	Fig. 5a TO-263 AB Weight = 2 g
► CS 20-22 moF1	2200	18		200	2500			125	0.92	0.15	85	
CS 23-08 io2 CS 23-12 io2 CS 23-16 io2	800 1200 1600	25	50	450	1000	1.0	10	125	1.0	0.6	22	
► CS 29-08 io1C ► CS 29-12 io1C	800 1200	23	35	200	500	0.82	16.5	150	1.2	0.6	83	Fig. 6 TO-247 AD Weight = 6 g
CS 30-12 io1 CS 30-14 io1 CS 30-16 io1	1200 1400 1600	31	49	300	1000	0.9	15	125	0.62	0.2	6	
CS 45-08 io1 CS 45-12 io1 CS 45-16 io1	800 1200 1600	48 $T_C = 75^\circ\text{C}$	75	520	1000	0.85	11	125	0.62	0.2		
CS 45-16 io1R *	1600	48	75	520	1000	0.85	11	125	0.62	0.2	7	Fig. 83 ISOPLUS220™ Weight = 2 g
CS 35-08 io4 CS 35-12 io4 CS 35-14 io4	800 1200 1400	63	120	1200	1000	0.85	3.5	125	0.4	0.2	23	
Fig. 21 TO-64 Weight = 6 g		Fig. 22 TO-208 AA (TO-48) Weight = 12 g		Fig. 23 TO-208 AC (TO-65) Weight = 20 g		Fig. 7 ISOPLUS247™ DCB isolated package Weight = 5 g						Fig. 85 ISOPLUS i4-PAC™ Weight = 9 g
 M 5		 M 6		 1/4"-28 UNF-2A								

* isolated 2500 V_{RMS}

A = Anode, C = Cathode, G = Gate

Data according to IEC 60747 and refer to a single diode unless otherwise stated.