

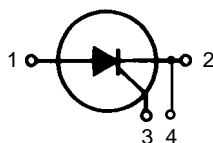
Phase Control Thyristor

CS 1250

$$\begin{aligned} I_{\text{TRMS}} &= 3000 \text{ A} \\ I_{\text{TAVM}} &= 1250 \text{ A} \\ V_{\text{RRM}} &= 1200 - 1600 \end{aligned}$$

V

V_{RSM}	V_{RRM}	Type
V_{DSM}	V_{DRM}	
V	V	
1200	1200	CS 1250 - 12io1
1400	1400	CS 1250 - 14io1
1600	1600	CS 1250 - 16io1



Symbol	Test Conditions	Maximum Ratings
I_{TRMS}	$T_{\text{C}} = 83^{\circ}\text{C}; 180^{\circ} \text{ sine}$	3000 A
I_{TAVM}		1250 A
I_{TSM}	$T_{\text{VJ}} = 45^{\circ}\text{C}; V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ 23000 A
		$t = 8.3 \text{ ms (60 Hz), sine}$ 25000 A
	$T_{\text{VJ}} = T_{\text{VJM}}; V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ 21000 A
		$t = 8.3 \text{ ms (60 Hz), sine}$ 23000 A
$\int i^2 dt$	$T_{\text{VJ}} = 45^{\circ}\text{C}; V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ 2645000 A ² s
		$t = 8.3 \text{ ms (60 Hz), sine}$ 2594000 A ² s
	$T_{\text{VJ}} = T_{\text{VJM}}; V_{\text{R}} = 0$	$t = 10 \text{ ms (50 Hz), sine}$ 2205000 A ² s
		$t = 8.3 \text{ ms (60 Hz), sine}$ 2195000 A ² s
$(di/dt)_{\text{cr}}$	$T_{\text{VJ}} = T_{\text{VJM}}; f = 5 \text{ Hz}; t_{\text{p}} = 200 \text{ ms}; V_{\text{D}} = 1/2 V_{\text{DRM}}; I_{\text{G}} = 2 \text{ A}; di_{\text{G}}/dt = 2 \text{ A}/\mu\text{s}$	repetitive, $I_{\text{T}} = 2500 \text{ A}$ 320 A/ μs
$(dv/dt)_{\text{cr}}$	$T_{\text{VJ}} = T_{\text{VJM}}; R_{\text{GK}} = \infty; \text{method 1 (linear voltage rise)}$	$V_{\text{DR}} = 2/3 V_{\text{DRM}}$ 1000 V/ μs
P_{GM}	$T_{\text{VJ}} = T_{\text{VJM}}; I_{\text{T}} = I_{\text{TAVM}}$	$t_{\text{p}} = 30 \mu\text{s}$ 120 W
		$t_{\text{p}} = 500 \mu\text{s}$ 60 W
		$t_{\text{p}} = 10 \text{ ms}$ 16 W
V_{RGM}		5 V
T_{VJ}		-40...+125 $^{\circ}\text{C}$
T_{VJM}		125 $^{\circ}\text{C}$
T_{stg}		-40...+ 50 $^{\circ}\text{C}$
M_{d}	Mounting force	24.0 .. 28.0 kN
Weight		600 g

Features

- Thyristor for line frequency
- International standard package
- Long-term stability of blocking voltages
- Gate and auxiliary cathode pin connection
- Amplifying gate

Typical Applications

- DC Motor control
- Power converter
- AC power controller

Data according to DIN/IEC 747-6

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

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IXYS Corporation
3540 Bassett Street, Santa Clara CA 95054
Phone: (408) 982-0700 Fax: 408-496-0670

IXYS Semiconductor GmbH
Edisonstr. 15, D-68623 Lampertheim, Germany
Phone: +49-6206-5030 Fax: +49-6206-503627

Symbol	Test Conditions	Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	\leq	60	mA
V_T	$I_T = 3.14 \times I_{TAVM}; T_{VJ} = 25^{\circ}\text{C}$	\leq	1.85	V
V_{T0}	For power-loss calculations only ($T_{VJ} = 125^{\circ}\text{C}$)		1.0	V
r_T			0.21	m Ω
V_{GT}	$V_D = 12 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$	\leq	3.0	V
I_{GT}	$V_D = 12 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$	\leq	300	mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	\leq	0.25	V
I_L	$T_{VJ} = 25^{\circ}\text{C}; t_p = 10 \mu\text{s}$ $I_G = 2 \text{ A}; di_G/dt = 2 \text{ A}/\mu\text{s}$	\leq	1.0	A
I_H	$T_{VJ} = 25^{\circ}\text{C}; V_D = 12 \text{ V}; R_{GK} = \infty$	\leq	0.3	A
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}; V_D = 500 \text{ V}$ $I_G = 2 \text{ A}; di_G/dt = 2 \text{ A}/\mu\text{s}$	\leq	2.5	μs
t_q	$T_{VJ} = T_{VJM}; I_T = 1250 \text{ A}, t_p = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s typ.}$ $V_R = 100 \text{ V}; dv/dt = 50 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$		150	μs
R_{thJC}	DC current		0.02	K/W

Dimensions in mm (1 mm = 0.0394")

