

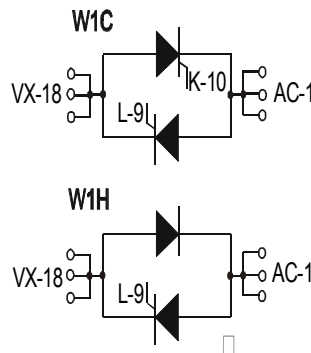
Single Phase AC Controller Modules

PSW1C205
PSW1H205

$I_{RMS} = 230 \text{ A}$
 $V_{RRM} = 600-1600 \text{ V}$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type	
700	600	PSW1C 205/06	PSW1H 205/06
900	800	PSW1C 205/08	PSW1H 205/08
1300	1200	PSW1C 205/12	PSW1H 205/12
1500	1400	PSW1C 205/14	PSW1H 205/14
1700	1600	PSW1C 205/16	PSW1H 205/16



Symbol	Test Conditions	Maximum Ratings	
I_{RMS}	$T_C = 85 \text{ }^\circ\text{C}$; 50-400 Hz (per single controller)	230	A
I_{TRMS}		180	A
I_{TAVM}	$T_C = 85 \text{ }^\circ\text{C}$; 180° sine	105	A
I_{TSM}	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	2250	A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	2400	A
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	2000	A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	2150	A
$\int i^2 dt$	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	25300	A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	23900	A ² s
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	20000	A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	19100	A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$ repetitive, $I_T = 250 \text{ A}$ f=50Hz, $t_p=200\mu\text{s}$	150	A/ μs
	$V_D=2/3V_{DRM}$ $I_G=0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.45A/\mu\text{s}$	500	A/ μs
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000	V/ μs
P_{GM}	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $t_p=30\mu\text{s}$	≤ 10	W
	$I_T=I_{TAVM}$ $t_p=300\mu\text{s}$	≤ 5	W
P_{GAVM}		0.5	W
V_{RGM}		10	V
T_{VJ}		-40... + 125	°C
T_{VJM}		125	°C
T_{stg}		-40... + 125	°C
V_{ISOL}	50/60 Hz, RMS t = 1 min	3000	V~
	$I_{ISOL} \leq 1 \text{ mA}$ t = 1 s	3600	V~
M_d	Mounting torque (M4)	1.5 - 2.0	Nm
		14 - 18	lb.in.
Weight	typ.	24	g

Features

- Thyristor controller for AC (circuit W1C acc. to IEC) for mains frequency □
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- UL registered, E 148688

Applications

- Switching and control of single and three phase AC circuits
- Light and temperature control
- Softstart AC motor controller
- Solid state switches

Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

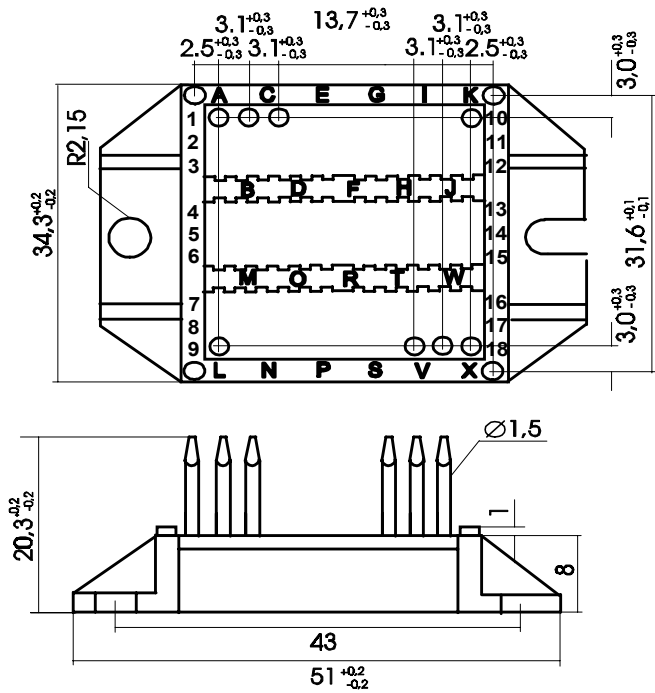
Data according to IEC 60747 refer to a single thyristor unless otherwise stated

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM} \leq$	5 mA
V_T	$I_T = 300\text{ A}$, $T_{VJ} = 25^{\circ}\text{C}$	$\leq 1.5\text{ V}$
V_{TO}	For power-loss calculations only	0.8 V
r_T		2.4 m Ω
V_{GT}	$V_D = 6\text{V}$, $T_{VJ} = 25^{\circ}\text{C}$	$\leq 1.5\text{ V}$
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq 1.6\text{ V}$
I_{GT}	$V_D = 6\text{V}$, $T_{VJ} = 25^{\circ}\text{C}$	$\leq 150\text{ mA}$
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq 200\text{ mA}$
V_{GD}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3V_{DRM}$	$\leq 0.2\text{ V}$
I_{GD}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3V_{DRM}$	$\leq 10\text{ mA}$
I_L	$T_{VJ} = 25^{\circ}\text{C}$, $t_p = 10\mu\text{s}$	$\leq 450\text{ mA}$
	$I_G = 0.45\text{A}$, $di_G/dt = 0.45\text{A}/\mu\text{s}$	
I_H	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 6\text{V}$, $R_{GK} = \infty$	$\leq 200\text{ mA}$
	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 1/2V_{DRM}$	$\leq 2\mu\text{s}$
t_{gd}	$I_G = 0.45\text{A}$, $di_G/dt = 0.45\text{A}/\mu\text{s}$	
R_{thJC}	per thyristor; DC	0.26 K/W
	per module	0.13 K/W
R_{thJK}	per thyristor; sine 180° el	0.46 K/W
	per module	0.23 K/W
d_s	Creeping distance on surface	11.2 mm
d_A	Creeping distance in air	17.0 mm
a	Max. allowable acceleration	50 m/s ²

Package style and outline

Dimensions in mm (1mm = 0.0394")

W1C



W1H

