

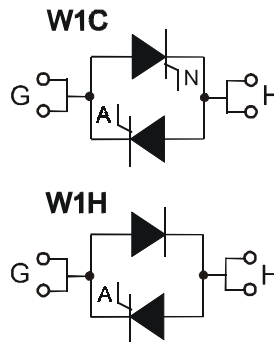
Single Phase AC Controller Modules

PSW1C175
PSW1H175

$I_{RMS} = 175 \text{ A}$
 $V_{RRM} = 600-1600 \text{ V}$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type	
700	600	PSW1C 175/06	PSW1H 175/06
900	800	PSW1C 175/08	PSW1H 175/08
1300	1200	PSW1C 175/12	PSW1H 175/12
1500	1400	PSW1C 175/14	PSW1H 175/14
1700	1600	PSW1C 175/16	PSW1H 175/16



Symbol	Test Conditions	Maximum Ratings	
I_{RMS}	$T_C = 85 \text{ }^\circ\text{C}$; 50-400 Hz (per single controller)	175	A
I_{TRMS}		125	A
I_{TAVM}	$T_C = 85 \text{ }^\circ\text{C}$; 180° sine	80	A
I_{TSM}	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	1500	A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1600	A
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	1350	A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1450	A
$\int i^2 dt$	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	11250	A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	10620	A ² s
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	9100	A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	8720	A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$ repetitive, $I_T = 80 \text{ A}$ f=50Hz, $t_p=200\mu\text{s}$	150	A/ μs
	$V_D=2/3V_{DRM}$ $I_G=0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.45\text{A}/\mu\text{s}$	500	A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, 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... + 150	°C
T_{VJM}		150	°C
T_{stg}		-40... + 125	°C
V_{ISOL}	50/60 Hz, RMS t = 1 min	2500	V~
	$I_{ISOL} \leq 1 \text{ mA}$ t = 1 s	3000	V~
M_d	Mounting torque (M4)	1.5 - 1.8	Nm
		14 - 16	lb.in.
Weight	typ.	16	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
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$	≤ 5 mA
V_T	$I_T = 200$ A, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.57 V
V_{TO}	For power-loss calculations only	0.85 V
r_T		3.7 m Ω
V_{GT}	$V_D = 6\text{V}$, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^{\circ}\text{C}$	≤ 1.6 V
I_{GT}	$V_D = 6\text{V}$, $T_{VJ} = 25^{\circ}\text{C}$	≤ 100 mA
	$T_{VJ} = -40^{\circ}\text{C}$	≤ 200 mA
V_{GD}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3V_{DRM}$	≤ 0.2 V
I_{GD}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3V_{DRM}$	≤ 10 mA
I_L	$T_{VJ} = 25^{\circ}\text{C}$, $t_p = 10\mu\text{s}$	≤ 450 mA
	$I_G = 0.45\text{A}$, $di_G/dt = 0.45\text{A}/\mu\text{s}$	
I_H	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 6\text{V}$, $R_{GK} = \infty$	≤ 200 mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 1/2V_{DRM}$	≤ 2 μs
	$I_G = 0.45\text{A}$, $di_G/dt = 0.45\text{A}/\mu\text{s}$	
R_{thJC}	per thyristor; DC	0.5 K/W
	per module	0.25 K/W
R_{thJH}	per thyristor; sine 180° el	0.65 K/W
	per module	0.33 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")

