

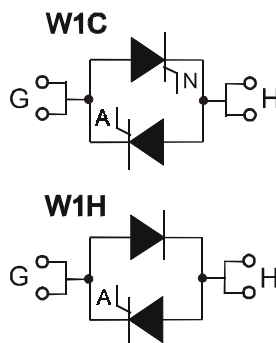
## Single Phase AC Controller Modules

**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 <sup>2</sup> s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	10620	A <sup>2</sup> s
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	9100	A <sup>2</sup> s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	8720	A <sup>2</sup> 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/ $\mu\text{s}$
	$V_D=2/3V_{DRM}$ $I_G=0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.45\text{A}/\mu\text{s}$	500	A/ $\mu\text{s}$
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$ , method 1 (linear voltage rise)	1000	V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $t_p=30\mu\text{s}$	≤ 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.
<b>Weight</b>	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

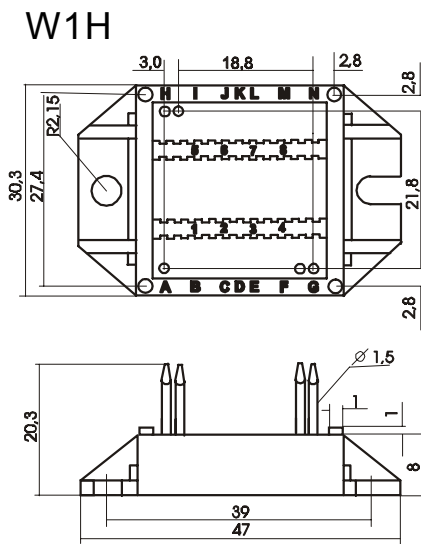
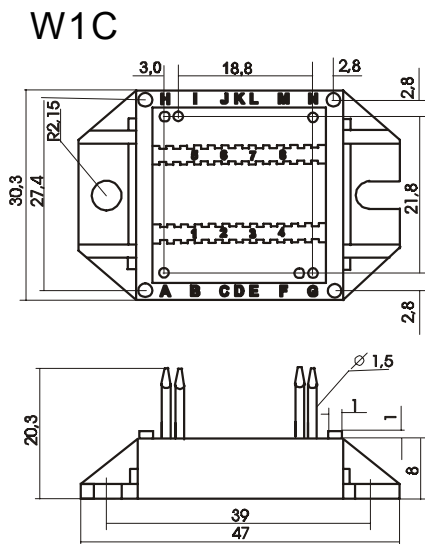
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

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

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$ , $V_R = V_{RRM}$ , $V_D = V_{DRM}$	$\leq 5$ mA
$V_T$	$I_T = 200$ A, $T_{VJ} = 25^{\circ}\text{C}$	$\leq 1.57$ V
$V_{TO}$	For power-loss calculations only	0.85 V
$r_T$		3.7 m $\Omega$
$V_{GT}$	$V_D = 6$ V $T_{VJ} = 25^{\circ}\text{C}$	$\leq 1.5$ V
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq 1.6$ V
$I_{GT}$	$V_D = 6$ V $T_{VJ} = 25^{\circ}\text{C}$	$\leq 100$ mA
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq 200$ mA
$V_{GD}$	$T_{VJ} = 125^{\circ}\text{C}$ $V_D = 2/3 V_{DRM}$	$\leq 0.2$ V
$I_{GD}$	$T_{VJ} = 125^{\circ}\text{C}$ $V_D = 2/3 V_{DRM}$	$\leq 10$ mA
$I_L$	$T_{VJ} = 25^{\circ}\text{C}$ , $t_p = 10\mu\text{s}$ $I_G = 0.45$ A, $di_G/dt = 0.45$ A/ $\mu\text{s}$	$\leq 450$ mA
$I_H$	$T_{VJ} = 25^{\circ}\text{C}$ , $V_D = 6$ V, $R_{GK} = \infty$	$\leq 200$ mA
$t_{gd}$	$T_{VJ} = 25^{\circ}\text{C}$ , $V_D = 1/2 V_{DRM}$ $I_G = 0.45$ A, $di_G/dt = 0.45$ A/ $\mu\text{s}$	$\leq 2$ $\mu\text{s}$
$R_{thJC}$	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 <sup>2</sup>

### Package style and outline

Dimensions in mm (1mm = 0.0394")



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