POWERSEM

ECO-PAC™ 1

Single Phase AC Controller Modules

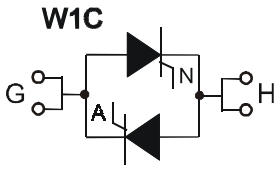
PSW1C175 **PSW1H175**

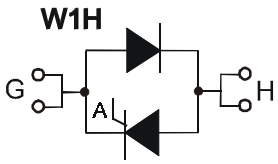
I_{RMS} = 175 A

V_{RRM} = 600-1600 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 °C; 50-400 Hz (per single controller)		175	A
I_{TRMS}			125	A
I_{TAVM}	T_C = 85 °C;	180° sine	80	A
I_{TSM}	T_{VJ} = 45 °C	t = 10 ms (50 Hz), sine	1500	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1600	A
	T_{VJ} = 125 °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 °C	t = 10 ms (50 Hz), sine	11250	A²s
	V_R = 0	t = 8.3 ms (60 Hz), sine	10620	A²s
	T_{VJ} = 125 °C	t = 10 ms (50 Hz), sine	9100	A²s
	V_R = 0	t = 8.3 ms (60 Hz), sine	8720	A²s
$(di/dt)_{cr}$	T_{VJ} = 125 °C	repetitive, I_T = 80 A	150	A/µs
	f=50Hz, t_P=200µs			
	V_D=2/3V_{DRM}			
	I_G=0.45 A	non repetitive, I_T = I_{TAVM}	500	A/µs
	di_G/dt=0.45A/µs			
$(dv/dt)_{cr}$	T_{VJ} = 125 °C	V_D=2/3V_{DRM}	1000	V/µs
	R_{GK}= ∞, method 1 (linear voltage rise)			
P_{GM}	T_{VJ} = 125 °C	t_P=30µs	≤ 10	W
	I_T =I_{TAVM}	t_P=300µs	≤ 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} ≤ 1 mA	t = 1 s	3000	V~
M_d	Mounting torque (M4)		1.5 - 1.8	Nm
			14 - 16	lb.in.
Weight	typ.		16	g

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

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

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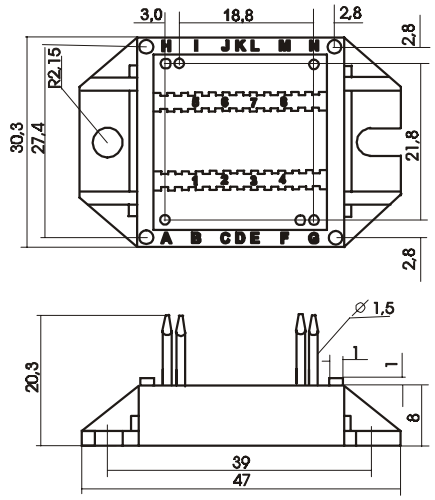
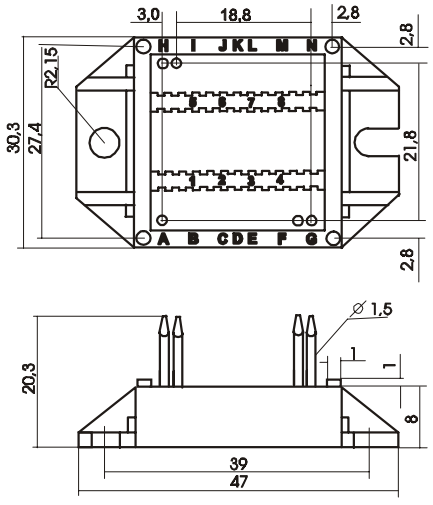
Symbol	Test Conditions		Characteristic Value		
I_D, I_R	T_{VJ} = 125°C,	$V_R = V_{RRM}$, $V_D = V_{DRM}$	≤	5	mA
V_T	I_T = 200 A,	T_{VJ} = 25 °C	≤	1.57	V
V_{TO}	For power-loss calculations only			0.85	V
r_T				3.7	mΩ
V_{GT}	V_D=6V	T_{VJ}= 25°C	≤	1.5	V
		T_{VJ}=-40°C	≤	1.6	V
I_{GT}	V_D=6V	T_{VJ}= 25°C	≤	100	mA
		T_{VJ}=-40°C	≤	200	mA
V_{GD}	T_{VJ}= 125°C	V_D=2/3V_{DRM}	≤	0.2	V
I_{GD}	T_{VJ}= 125°C	V_D=2/3V_{DRM}	≤	10	mA
I_L	T_{VJ}= 25°C, t_P=10µs		≤	450	mA
	I_G=0.45A, di_G/dt=0.45A/µs				
I_H	T_{VJ}= 25°C, V_D=6V, R_{GK}= ∞		≤	200	mA
t_{gd}	T_{VJ}= 25°C, V_D=1/2V_{DRM}		≤	2	µs
	I_G=0.45A, di_G/dt=0.45A/µs				
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/s²

Package style and outline
Dimensions in mm (1mm = 0.0394“)

W1C



W1H



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