

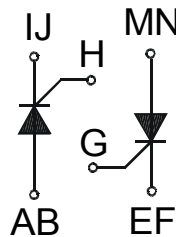
Single Phase AC Controller Modules

PSW1C70

$I_{TRMS} = 72 \text{ A}$
 $V_{RRM} = 600-1200 \text{ V}$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
700	600	PSW1C 70/06
900	800	PSW1C 70/08
1300	1200	PSW1C 70/12



Symbol	Test Conditions	Maximum Ratings
I_{TRMS}	$T_{VJ} = T_{VJM}$	72 A
I_{TAVM}	$T_C = 75 \text{ }^\circ\text{C}; 180^\circ \text{ sine}$	53 A
I_{TAVM}	$T_C = 85 \text{ }^\circ\text{C}; 180^\circ \text{ sine}$	45 A
I_{TSM}	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	1100 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1200 A
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	990 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1090 A
$\int i^2 dt$	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	6050 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	5970 A ² s
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	4900 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	4930 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$ repetitive, $I_T = 150 \text{ A}$ f=50Hz, $t_p=200\mu\text{s}$ $V_D=2/3V_{DRM}$	150 A/ μs
	$I_G=0.5 \text{ A}$ non repetitive, $I_T = I_{TAVM}$	500 A/ μs
	$di_G/dt=0.5\text{A}/\mu\text{s}$	
$(dv/dt)_{cr}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000 V/ μs
P_{GM}	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $t_p=30\mu\text{s}$	$\leq 10 \text{ W}$
	$I_T = I_{TAVM}$ $t_p=300\mu\text{s}$	$\leq 5 \text{ W}$
P_{GAVM}		0.5 W
V_{RGM}		10 V
T_{VJ}		-40... + 125 $^\circ\text{C}$
T_{VJM}		125 $^\circ\text{C}$
T_{stg}		-40... + 125 $^\circ\text{C}$
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.	18 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

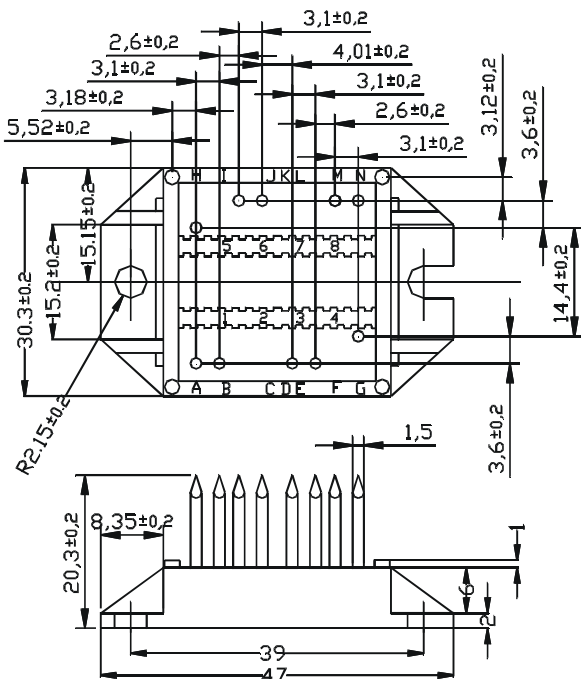
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

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

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$	≤ 10 mA
V_T	$I_T = 150$ A, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.48 V
V_{TO}	For power-loss calculations only	0.85 V
r_T		4.6 m Ω
V_{GT}	$V_D = 6\text{V}$, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^{\circ}\text{C}$	≤ 1.9 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}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3 V_{DRM}$	≤ 0.2 V
I_{GD}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3 V_{DRM}$	≤ 10 mA
I_L	$T_{VJ} = 25^{\circ}\text{C}$, $t_p = 30\mu\text{s}$, $V_D = 6\text{V}$ $I_G = 0.1\text{A}$, $di_G/dt = 0.1\text{A}/\mu\text{s}$	≤ 100 mA
I_H	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 6\text{V}$, $R_{GK} = \infty$	≤ 80 mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 1/2 V_{DRM}$ $I_G = 0.1\text{A}$, $di_G/dt = 0.1\text{A}/\mu\text{s}$	≤ 2 μs
t_q	$T_{VJ} = T_{VJM}$; $I_T = 50\text{A}$; $t_p = 200\mu\text{s}$; $-di/dt = 10\text{A}/\mu\text{s}$	typ. 100 μs
	$V_R = 100\text{V}$; $dv/dt = 10\text{V}/\mu\text{s}$; $V_D = 2/3 V_{DRM}$	
R_{thJC}	per thyristor; DC	0.62 KW
	per module	0.31 KW
R_{thJK}	per thyristor; sine 180° el	typ. 0.78 KW
	per module	typ. 0.39 KW
d_s	Creeping distance on surface	6.6 mm
d_A	Creeping distance in air	9.7 mm
a	Max. allowable acceleration	50 m/s ²

Package style and outline

Dimensions in mm (1mm = 0.0394")



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