

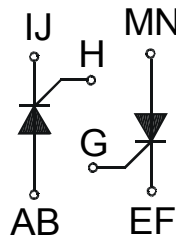
Single Phase AC Controller Modules

PSW1C25

$I_{TRMS} = 26 \text{ A}$
 $V_{RRM} = 600-1600 \text{ V}$

Preliminary Data Sheet

| V_{RSM} V_{DSM} (V) | V_{RRM} V_{DRM} (V) | Type |
|-------------------------------|-------------------------------|-------------|
| 700 | 600 | PSW1C 25/06 |
| 900 | 800 | PSW1C 25/08 |
| 1300 | 1200 | PSW1C 25/12 |



| Symbol | Test Conditions | Maximum Ratings | Features |
|----------------|--|----------------------|---|
| I_{TRMS} | $T_{VJ} = T_{VJM}$ | 26 A | <ul style="list-style-type: none"> • 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 |
| I_{TAVM} | $T_C = 75 \text{ °C}; 180^\circ \text{ sine}$ | 19 A | |
| I_{TAVM} | $T_C = 85 \text{ °C}; 180^\circ \text{ sine}$ | 17 A | |
| I_{TSM} | $T_{VJ} = 45 \text{ °C}$ t = 10 ms (50 Hz), sine | 250 A | |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 270 A | |
| | $T_{VJ} = 125 \text{ °C}$ t = 10 ms (50 Hz), sine | 200 A | |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 220 A | |
| $\int i^2 dt$ | $T_{VJ} = 45 \text{ °C}$ t = 10 ms (50 Hz), sine | 310 A ² s | |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 300 A ² s | |
| | $T_{VJ} = 125 \text{ °C}$ t = 10 ms (50 Hz), sine | 200 A ² s | |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 200 A ² s | |
| $(di/dt)_{cr}$ | $T_{VJ} = 125 \text{ °C}$ repetitive, $I_T = 48 \text{ A}$ f=50Hz, $t_p=200\mu s$ | 150 A/ μs | |
| | $V_D=2/3V_{DRM}$ $I_G=0.2 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ | 500 A/ μs | |
| | $di_G/dt=0.2A/\mu s$ | | |
| $(dv/dt)_{cr}$ | $T_{VJ} = 125 \text{ °C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise) | 1000 V/ μs | |
| P_{GM} | $T_{VJ} = 125 \text{ °C}$ $t_p=30\mu s$ | ≤ 10 W | |
| | $I_T = I_{TAVM}$ $t_p=300\mu s$ | ≤ 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 | 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 |
|------------|--|------------------------|
| $I_{D,R}$ | $T_{VJ} = 125^{\circ}\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$ | ≤ 3 mA |
| V_T | $I_T = 30$ A, $T_{VJ} = 25^{\circ}\text{C}$ | ≤ 1.6 V |
| V_{TO} | For power-loss calculations only | 0.90 V |
| r_T | | 18.0 m Ω |
| V_{GT} | $V_D = 6$ V, $T_{VJ} = 25^{\circ}\text{C}$ | ≤ 2.5 V |
| | $T_{VJ} = -40^{\circ}\text{C}$ | ≤ 3.5 V |
| I_{GT} | $V_D = 6$ V, $T_{VJ} = 25^{\circ}\text{C}$ | ≤ 30 mA |
| | $T_{VJ} = -40^{\circ}\text{C}$ | ≤ 50 mA |
| V_{GD} | $T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3 V_{DRM}$ | ≤ 0.2 V |
| I_{GD} | $T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3 V_{DRM}$ | ≤ 1 mA |
| I_L | $T_{VJ} = 25^{\circ}\text{C}$, $t_p = 10\mu\text{s}$, $V_D = 6$ V $I_G = 0.09$ A, $di_G/dt = 0.09$ A/ μs | ≤ 100 mA |
| I_H | $T_{VJ} = 25^{\circ}\text{C}$, $V_D = 6$ V, $R_{GK} = \infty$ | ≤ 80 mA |
| t_{gd} | $T_{VJ} = 25^{\circ}\text{C}$, $V_D = 1/2 V_{DRM}$ $I_G = 0.09$ A, $di_G/dt = 0.09$ A/ μs | ≤ 2 μs |
| t_q | $T_{VJ} = T_{VJM}$; $I_T = 16$ A; $t_p = 300\mu\text{s}$; $-di/dt = 20$ A/ μs $V_R = 100$ V; $dv/dt = 20$ V/ μs ; $V_D = 2/3 V_{DRM}$ | typ. 60 μs |
| R_{thJC} | per thyristor; DC | 1.42 K/W |
| | per module | 0.71 K/W |
| R_{thJK} | per thyristor; sine 180° el | typ. 1.75 K/W |
| | per module | typ. 0.88 K/W |
| 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")

