

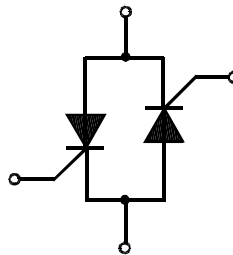
Single Phase AC Controller Subassemblies

PSW1C50

$I_{RMS} = 50 \text{ A}$
 $V_{RRM} = 800-1600 \text{ V}$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
900	800	PSW1C 50/08
1300	1200	PSW1C 50/12
1500	1400	PSW1C 50/14
1700	1600	PSW1C 50/16



Symbol	Test Conditions	Maximum Ratings
I_{RMS}	$T_C = 85^\circ\text{C}$; 50-400Hz (per phase)	50 A
I_{TRMS}	$T_{VJ} = T_{VJM}$	36 A
I_{TAVM}	$T_C = 85^\circ\text{C}$; 180° sine	23 A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ t = 10 ms (50 Hz), sine	520 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	570 A
	$T_{VJ} = 125^\circ\text{C}$ t = 10 ms (50 Hz), sine	460 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	500 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ t = 10 ms (50 Hz), sine	1350 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1350 A ² s
	$T_{VJ} = 125^\circ\text{C}$ t = 10 ms (50 Hz), sine	1050 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1030 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ repetitive, $I_T = 150 \text{ A}$ f=50Hz, $t_p=200\mu\text{s}$ $V_D=2/3V_{DRM}$	150 A/ μs
	$I_G=0.3 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.5 \text{ A}/\mu\text{s}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000 V/ μs
P_{GM}	$T_{VJ} = 125^\circ\text{C}$ $t_p=30\mu\text{s}$	$\leq 10 \text{ W}$
	$I_T = I_{TAVM}$ $t_p=300\mu\text{s}$	$\leq 5 \text{ W}$
P_{GAVM}		0.5 W
V_{RGM}		10 V
T_{VJ}		-40... + 125 °C
T_{VJM}		125 °C
T_{stg}		-40... + 125 °C
Weight	typ.	8 g

Features

- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

Applications

- Solid state relays

Advantages

- 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, I_R	$T_{VJ} = 125^\circ\text{C}, V_R = V_{RRM}, V_D = V_{DRM}$	$\leq 5 \text{ mA}$
V_T	$I_T = 80 \text{ A}, T_{VJ} = 25^\circ\text{C}$	$\leq 1.65 \text{ V}$
V_{TO}	For power-loss calculations only	0.85 V
r_T		$11 \text{ m}\Omega$
V_{GT}	$V_D = 6\text{V}, T_{VJ} = 25^\circ\text{C}$	$\leq 1.0 \text{ V}$
	$T_{VJ} = -40^\circ\text{C}$	$\leq 1.6 \text{ V}$
I_{GT}	$V_D = 6\text{V}, T_{VJ} = 25^\circ\text{C}$	$\leq 100 \text{ mA}$
	$T_{VJ} = -40^\circ\text{C}$	$\leq 150 \text{ mA}$
V_{GD}	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3V_{DRM}$	$\leq 0.2 \text{ V}$
I_{GD}	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3V_{DRM}$	$\leq 5 \text{ mA}$
I_L	$T_{VJ} = 25^\circ\text{C}, t_p = 10\mu\text{s}, V_D = 6\text{V}$ $I_G = 0.3\text{A}, di_G/dt = 0.3\text{A}/\mu\text{s}$	$\leq 200 \text{ mA}$
I_H	$T_{VJ} = 25^\circ\text{C}, V_D = 6\text{V}, R_{GK} = \infty$	$\leq 150 \text{ mA}$
t_{gd}	$T_{VJ} = 25^\circ\text{C}, V_D = 1/2V_{DRM}$ $I_G = 0.3\text{A}, di_G/dt = 0.3\text{A}/\mu\text{s}$	$\leq 2 \mu\text{s}$
t_q	$T_{VJ} = T_{VJM}; I_T = 20\text{A}; t_p = 200\mu\text{s}; di/dt = -10\text{A}/\mu\text{s}$ $V_R = 100\text{V}; dv/dt = 15\text{V}/\mu\text{s}; V_D = 2/3V_{DRM}$	typ. $150 \mu\text{s}$
R_{thJC}	per Thyristor; DC	1.1 K/W
	per module	0.55 K/W
a	Max. allowable acceleration	50 m/s^2

Package style and outline

Dimensions in mm (1mm = 0.0394")

