

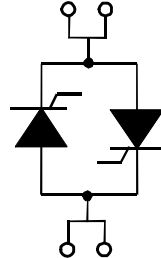
Single Phase AC Controller Subassemblies

PSW1C176

$I_{RMS} = 175 \text{ A}$
 $V_{RRM} = 800-1800 \text{ V}$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
900	800	PSW1C 176/08
1300	1200	PSW1C 176/12
1500	1400	PSW1C 176/14
1700	1600	PSW1C 176/16
1800	1700	PSW1C 176/18



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 ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	10620 A ² s
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	9100 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	8720 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$ repetitive, $I_T = 80 \text{ A}$ $f=50\text{Hz}$, $t_p=200\mu\text{s}$	150 A/ μs
	$V_D=2/3V_{DRM}$ $I_G=0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.45\text{A}/\mu\text{s}$	500 A/ μs
	$T_{VJ} = 125 \text{ }^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, 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... + 150 °C
T_{VJM}		150 °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
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$	≤ 5 mA
V_T	$I_T = 200$ A, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.57 V
V_{TO}	For power-loss calculations only	0.85 V
r_T		3.7 m Ω
V_{GT}	$V_D = 6\text{V}$, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^{\circ}\text{C}$	≤ 1.6 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	$T_{VJ} = 25^{\circ}\text{C}$, $t_p = 10\mu\text{s}$	≤ 450 mA
	$I_G = 0.45\text{A}$, $di_G/dt = 0.45\text{A}/\mu\text{s}$	
I_H	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 6\text{V}$, $R_{GK} = \infty$	≤ 200 mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 1/2 V_{DRM}$	≤ 2 μs
	$I_G = 0.45\text{A}$, $di_G/dt = 0.45\text{A}/\mu\text{s}$	
R_{thJC}	per thyristor; DC	0.5 KW
	per module	0.25 KW
a	Max. allowable acceleration	50 m/s ²

Package style and outline

Dimensions in mm (1mm = 0.0394")

