

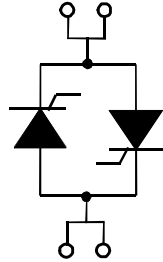
### Single Phase AC Controller Subassemblies

### PSW1C142

$I_{RMS} = 130 \text{ A}$   
 $V_{RRM} = 800-1800 \text{ V}$

Preliminary Data Sheet

$V_{RSM}$ $V_{DSM}$ (V)	$V_{RRM}$ $V_{DRM}$ (V)	Type
900	800	PSW1C 142/08
1300	1200	PSW1C 142/12
1500	1400	PSW1C 142/14
1700	1600	PSW1C 142/16
1900	1800	PSW1C 142/18



Symbol	Test Conditions	Maximum Ratings
$I_{RMS}$	$T_C = 85^\circ\text{C}; 50-400 \text{ Hz}$ (per single controller)	130 A
$I_{TRMS}$		90 A
$I_{TAVM}$	$T_C = 85^\circ\text{C}; 180^\circ$ sine, per thyristor	58 A
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1150 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1230 A
	$T_{VJ} = 125^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1000 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1070 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	6600 A <sup>2</sup> s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	6280 A <sup>2</sup> s
	$T_{VJ} = 125^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	5000 A <sup>2</sup> s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	4750 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ repetitive, $I_T = 60 \text{ A}$ $f=50\text{Hz}, t_p=200\mu\text{s}$	150 A/ $\mu\text{s}$
	$V_D=2/3V_{DRM}$ $I_G=0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.45\text{A}/\mu\text{s}$	500 A/ $\mu\text{s}$
	$T_{VJ} = 125^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$ , method 1 (linear voltage rise)	1000 V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = 125^\circ\text{C}$ $t_p=30\mu\text{s}$	$\leq 10 \text{ W}$
	$I_T=I_{TAVM}$ $t_p=300\mu\text{s}$	$\leq 5 \text{ W}$
$P_{GAVM}$		0.5 W
$V_{RGM}$		10 V
$T_{VJ}$		-40... + 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
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$ , $V_R = V_{RRM}$ , $V_D = V_{DRM}$	$\leq 5$ mA
$V_T$	$I_T = 200$ A, $T_{VJ} = 25^{\circ}\text{C}$	$\leq 1.75$ V
$V_{TO}$	For power-loss calculations only	0.85 V
$r_T$		5.2 m $\Omega$
$V_{GT}$	$V_D = 6\text{V}$ , $T_{VJ} = 25^{\circ}\text{C}$	$\leq 1.5$ V
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq 1.6$ V
$I_{GT}$	$V_D = 6\text{V}$ , $T_{VJ} = 25^{\circ}\text{C}$	$\leq 100$ mA
	$T_{VJ} = -40^{\circ}\text{C}$	$\leq 200$ mA
$V_{GD}$	$T_{VJ} = 125^{\circ}\text{C}$ , $V_D = 2/3 V_{DRM}$	$\leq 0.2$ V
$I_{GD}$	$T_{VJ} = 125^{\circ}\text{C}$ , $V_D = 2/3 V_{DRM}$	$\leq 10$ mA
$I_L$	$T_{VJ} = 25^{\circ}\text{C}$ , $t_p = 10\mu\text{s}$	$\leq 450$ mA
	$I_G = 0.45\text{A}$ , $di_G/dt = 0.45\text{A}/\mu\text{s}$	
$I_H$	$T_{VJ} = 25^{\circ}\text{C}$ , $V_D = 6\text{V}$ , $R_{GK} = \infty$	$\leq 200$ mA
$t_{gd}$	$T_{VJ} = 25^{\circ}\text{C}$ , $V_D = 1/2 V_{DRM}$	$\leq 2$ $\mu\text{s}$
	$I_G = 0.45\text{A}$ , $di_G/dt = 0.45\text{A}/\mu\text{s}$	
$R_{thJC}$	per thyristor; DC	0.7 K/W
	per module	0.35 K/W
<b>a</b>	Max. allowable acceleration	50 m/s <sup>2</sup>

### Package style and outline

Dimensions in mm (1mm = 0.0394")

