

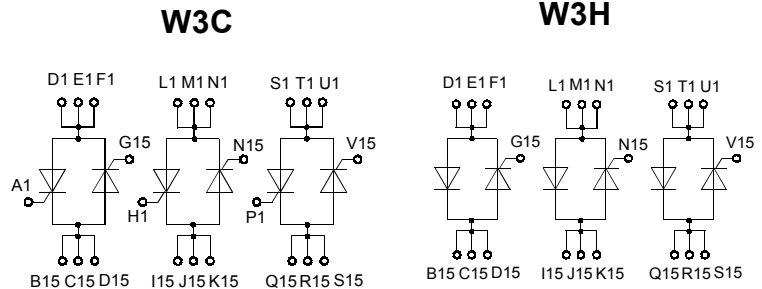
## Three Phase AC Controller Modules

**PSUT 90**  
**PSUH 90**

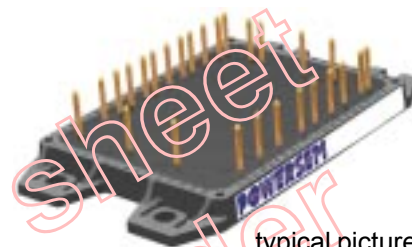
**$I_{RMS} = 3 \times 90 \text{ A}$**   
 **$V_{RRM} = 800-1800 \text{ V}$**

Preliminary Data Sheet

$V_{RSM}$ $V_{DSM}$ (V)	$V_{RRM}$ $V_{DRM}$ (V)	Type
900	800	PSUT 90/08 PSUH 90/08
1300	1200	PSUT 90/12 PSUH 90/12
1500	1400	PSUT 90/14 PSUH 90/14
1700	1600	PSUT 90/16 PSUH 90/16
1900	1800	PSUT 90/18 PSUH 90/18



Symbol	Test Conditions	Maximum Ratings
$I_{RMS}$	$T_C = 85^\circ\text{C}$ ; 50-400 Hz (per phase)	90 A
$I_{TRMS}$		64 A
$I_{TAVM}$	$T_C = 85^\circ\text{C}$ ; 180° sine, per Thyristor	40 A
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$ t = 10 ms (50 Hz), sine	1000 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1100 A
	$T_{VJ} = 125^\circ\text{C}$ t = 10 ms (50 Hz), sine	900 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1000 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ t = 10 ms (50 Hz), sine	5000 A <sup>2</sup> s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	5200 A <sup>2</sup> s
	$T_{VJ} = 125^\circ\text{C}$ t = 10 ms (50 Hz), sine	4050 A <sup>2</sup> s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	4150 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ repetitive, $I_T = 60 \text{ A}$ f=50Hz, $t_p=200\mu\text{s}$	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/ $\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ $V_D = 2/3V_{DRM}$ $R_{GK} = \infty$ , 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... + 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 (M5)	3 Nm
		26 lb.in.
<b>Weight</b>	typ.	86 g



typical picture, for pin configuration see outline drawing

### Features

- Thyristor controller for AC (circuit W3C 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 Release applied

### Applications

- Switching and control of three phase AC circuits
- Light and temperature control
- Softstart AC motor controller
- Solid state switches

### Advantages

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

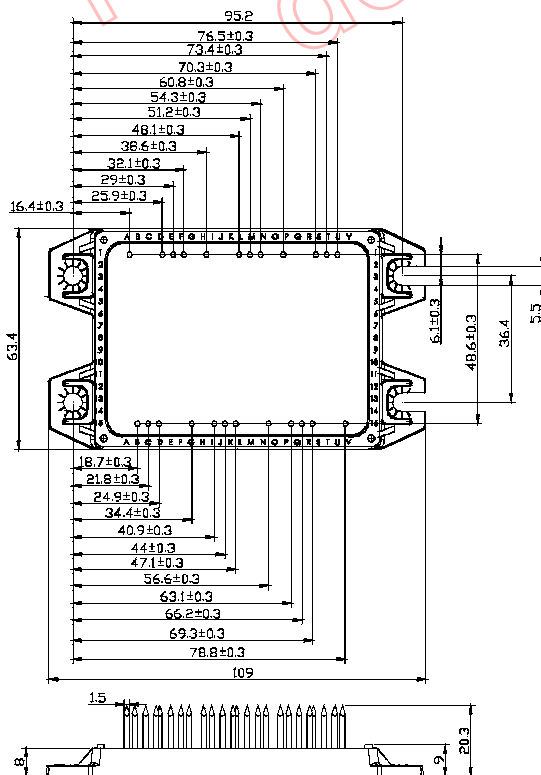
Data according to IEC 60747 refer to a single thyristor unless otherwise stated

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$ , $V_R = V_{RRM}$ , $V_D = V_{DRM}$	$\leq 5$ 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 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
$V_{GD}$	$T_{VJ} = 125^{\circ}\text{C}$ , $V_D = 2/3V_{DRM}$	$\leq 0.2$ V
$I_{GD}$	$T_{VJ} = 125^{\circ}\text{C}$ , $V_D = 2/3V_{DRM}$	$\leq 10$ 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
$t_{gd}$	$T_{VJ} = 25^{\circ}\text{C}$ , $V_D = 1/2V_{DRM}$	$\leq 2$ $\mu\text{s}$
	$I_G = 0.45\text{A}$ , $di_G/dt = 0.45\text{A}/\mu\text{s}$	
$R_{thJC}$	per thyristor; DC	0.73 K/W
	per module	0.122 K/W
$R_{thJK}$	per thyristor; sine $180^{\circ}$ el	typ. 0.82 K/W
	per module	typ. 0.137 K/W
$d_s$	Creeping distance on surface (pin to heatsink)	min. 11.2 mm
$d_A$	Strike distance in air (pin to heatsink)	min. 11.2 mm
$a$	Max. allowable acceleration	50 m/s <sup>2</sup>

### Package style and outline

Dimensions in mm (1mm = 0.0394")

#### W3C



#### W3H

