

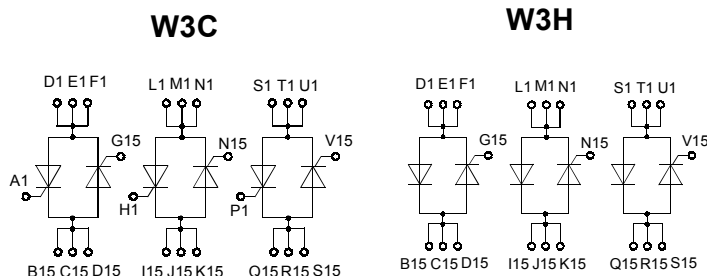
Three Phase AC Controller Modules

**PSUT 90
PSUH 90**

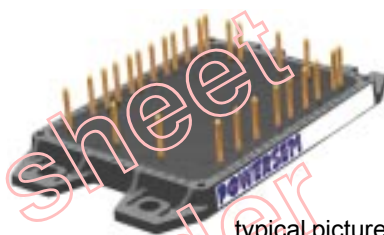
**$I_{RMS} = 3 \times 90 \text{ A}$
 $V_{RRM} = 800-1800 \text{ V}$**

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}	$T_C = 85 \text{ °C}$; 50-400 Hz (per phase)	90 A
I_{TRMS}		64 A
I_{TAVM}	$T_C = 85 \text{ °C}$; 180° sine, per Thyristor	40 A
I_{TSM}	$T_{VJ} = 45 \text{ °C}$ t = 10 ms (50 Hz), sine	1000 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1100 A
	$T_{VJ} = 125 \text{ °C}$ t = 10 ms (50 Hz), sine	900 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1000 A
$\int i^2 dt$	$T_{VJ} = 45 \text{ °C}$ t = 10 ms (50 Hz), sine	5000 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	5200 A ² s
	$T_{VJ} = 125 \text{ °C}$ t = 10 ms (50 Hz), sine	4050 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	4150 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125 \text{ °C}$ repetitive, $I_T = 60 \text{ A}$ f=50Hz, $t_p=200\mu s$	150 A/ μs
	$V_D = 2/3V_{DRM}$ $I_G = 0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt = 0.45 \text{ A}/\mu s$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = 125 \text{ °C}$ $V_D = 2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000 V/ μs
	P_{GM} $T_{VJ} = 125 \text{ °C}$ $t_p = 30\mu s$	$\leq 10 \text{ W}$
P_{GAVM}	$I_T = I_{TAVM}$ $t_p = 300\mu s$	$\leq 5 \text{ W}$
		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 N m
		26 lb.in.
Weight	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

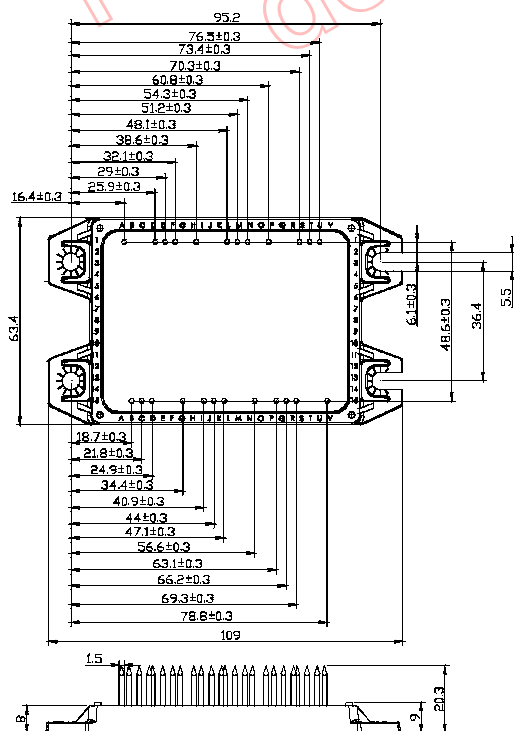
Data according to IEC 60747 refer to a single thyristor unless otherwise stated

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$	≤ 5 mA
V_T	$I_T = 200$ A, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.75 V
V_{TO}	For power-loss calculations only	0.85 V
r_T		5 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	0.73 K/W
	per module	0.122 K/W
R_{thJK}	per thyristor; sine 180° 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 ²

Package style and outline

Dimensions in mm (1mm = 0.0394")

W3C



W3H

