

Three Phase AC Controller Modules

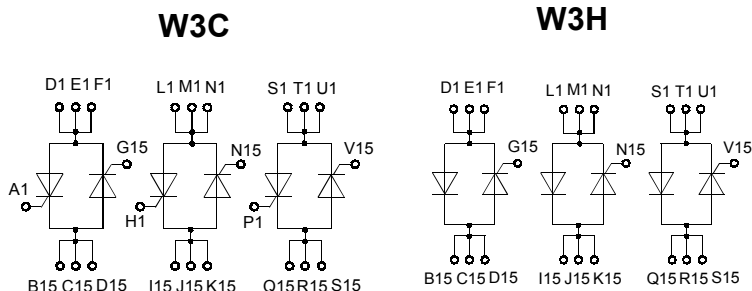
PSUT 230
PSUH 230

$$I_{RMS} = 3 \times 200 \text{ A}$$

$$V_{RRM} = 800-1800 \text{ V}$$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type	
900	800	PSUT 230/08	PSUH 230/08
1300	1200	PSUT 230/12	PSUH 230/12
1500	1400	PSUT 230/14	PSUH 230/14
1700	1600	PSUT 230/16	PSUH 230/16
1900	1800	PSUT 230/18	PSUH 230/18



Symbol	Test Conditions	Maximum Ratings	
I_{RMS}	$T_C = 85^\circ\text{C}$; 50-400 Hz (per phase)	200	A
I_{TRMS}		144	A
I_{TAVM}	$T_C = 85^\circ\text{C}$; 180° sine	90	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	2250	A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	2400	A
	$T_{VJ} = 125^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	2000	A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	2150	A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	25300	A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	23900	A ² s
	$T_{VJ} = 125^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	20000	A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	19100	A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ repetitive, $I_T = 250 \text{ A}$ $f=50\text{Hz}$, $t_p=200\mu\text{s}$	150	A/ μs
$(dv/dt)_{cr}$	$V_D = 2/3V_{DRM}$ $I_G = 0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt = 0.45 \text{ A}/\mu\text{s}$	500	A/ μs
	$T_{VJ} = 125^\circ\text{C}$ $V_D = 2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000	V/ μs
P_{GM}	$T_{VJ} = 125^\circ\text{C}$ $t_p = 30\mu\text{s}$	≤ 10	W
	$I_T = I_{TAVM}$ $t_p = 300\mu\text{s}$	≤ 5	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 $t = 1 \text{ min}$	2500	V~
	$I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3000	V~
M_d	Mounting torque (M5)	3	Nm
		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

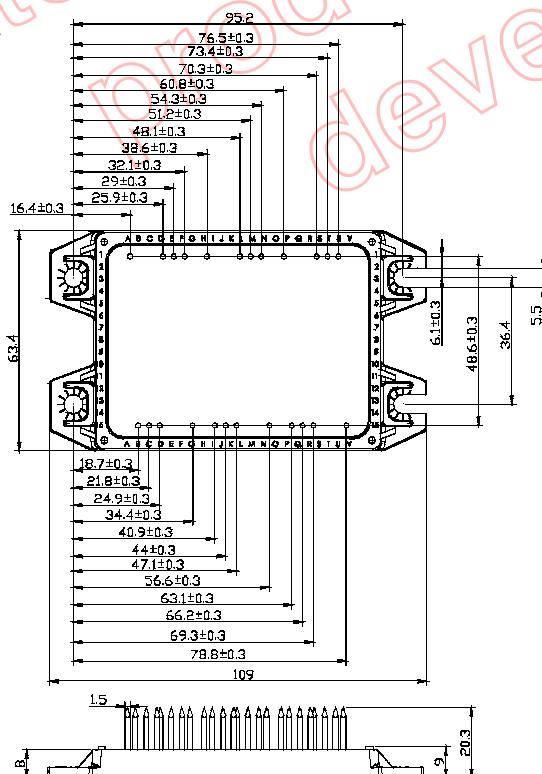
Data according to IEC 60747 refer to a single thyristor unless otherwise stated

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	$I_T = 300$ A, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.5 V
V_{TO}	For power-loss calculations only	0.85 V
r_T		2.5 m Ω
V_{GT}	$V_D = 6$ V, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^{\circ}\text{C}$	≤ 1.6 V
I_{GT}	$V_D = 6$ V, $T_{VJ} = 25^{\circ}\text{C}$	≤ 150 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
	$I_G = 0.45$ A, $di_G/dt = 0.45$ A/ μs	
I_H	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 6$ V, $R_{GK} = \infty$	≤ 200 mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 1/2 V_{DRM}$	≤ 2 μs
	$I_G = 0.45$ A, $di_G/dt = 0.45$ A/ μs	
R_{thJC}	per thyristor; DC	0.3 K/W
	per module	0.05 K/W
R_{thJK}	per thyristor; sine 180° el	0.49 K/W
	per module	0.082 K/W
d_s	Creepage 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

