

Three Phase AC Controller Modules

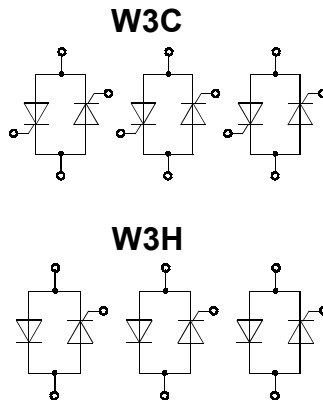
PSUT 85
PSUH 85

$$I_{RMS} = 3 \times 82 \text{ A}$$

$$V_{RRM} = 800-1200 \text{ V}$$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
900	800	PSUT 85/08 PSUH 85/08
1300	1200	PSUT 85/12 PSUH 85/12



ECO-PAC™ 3

Symbol	Test Conditions	Maximum Ratings
I_{RMS}	$T_C = 85^\circ\text{C}$, 50-400 Hz (per phase)	82 A
I_{TRMS}	$T_{VJ} = T_{VJM}$	58 A
I_{TAVM}	$T_C = 85^\circ\text{C}$; 180° sine, per thyristor	37 A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1000 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1100 A
	$T_{VJ} = 125^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	900 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	990 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	5000 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	5020 A ² s
	$T_{VJ} = 125^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	4050 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	4060 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ repetitive, $I_T = 150 \text{ A}$ $f=50\text{Hz}$, $t_p=200\mu\text{s}$	150 A/ μs
	$V_D=2/3V_{DRM}$ $I_G=0.5 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.5\text{A}/\mu\text{s}$	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}	$T_{VJ} = 125^\circ\text{C}$ $t_p=30\mu\text{s}$	$\leq 10 \text{ W}$
	$I_T = I_{TAVM}$ $t_p=300\mu\text{s}$	$\leq 5 \text{ W}$
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 $t = 1 \text{ min}$	2500 V~
	$I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3000 V~
M_d	Mounting torque (M4)	1.5 - 2.0 Nm
		14 - 18 lb.in.
Weight	typ.	46 g

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 single and 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

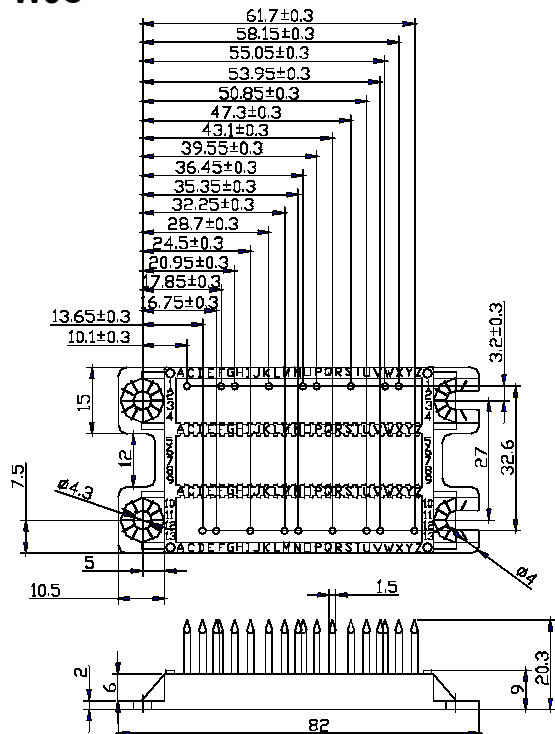
Data according to IEC 60747 refer to a single thyristor unless otherwise stated

Symbol	Test Conditions	Characteristic Value
I_D, I_R	$T_{VJ} = 125^\circ\text{C}, V_R = V_{RRM}, V_D = V_{DRM}$	$\leq 10 \text{ mA}$
V_T	$I_T = 150 \text{ A}, T_{VJ} = 25^\circ\text{C}$	$\leq 1.48 \text{ V}$
V_{TO}	For power-loss calculations only	0.85 V
r_T		$5.0 \text{ m}\Omega$
V_{GT}	$V_D = 6\text{V}, T_{VJ} = 25^\circ\text{C}$	$\leq 1.5 \text{ V}$
	$T_{VJ} = -40^\circ\text{C}$	$\leq 1.9 \text{ V}$
I_{GT}	$V_D = 6\text{V}, T_{VJ} = 25^\circ\text{C}$	$\leq 100 \text{ mA}$
	$T_{VJ} = -40^\circ\text{C}$	$\leq 200 \text{ mA}$
V_{GD}	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3 V_{DRM}$	$\leq 0.2 \text{ V}$
I_{GD}	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3 V_{DRM}$	$\leq 10 \text{ mA}$
I_L	$T_{VJ} = 25^\circ\text{C}, t_p = 30\mu\text{s}, V_D = 6\text{V}$ $I_G = 0.1\text{A}, di_G/dt = 0.1\text{A}/\mu\text{s}$	$\leq 100 \text{ mA}$
I_H	$T_{VJ} = 25^\circ\text{C}, V_D = 6\text{V}, R_{GK} = \infty$	$\leq 80 \text{ mA}$
t_{gd}	$T_{VJ} = 25^\circ\text{C}, V_D = 1/2 V_{DRM}$ $I_G = 0.1\text{A}, di_G/dt = 0.1\text{A}/\mu\text{s}$	$\leq 2 \mu\text{s}$
t_q	$T_{VJ} = T_{VJM}, I_T = 50\text{A}; t_p = 200\mu\text{s}; di/dt = -10\text{A}/\mu\text{s}$ $V_R = 100\text{V}; dv/dt = 10\text{V}/\mu\text{s}; V_D = 2/3 V_{DRM}$	typ. $100 \mu\text{s}$
R_{thJC}	per thyristor; DC	0.8 K/W
	per module	0.133 K/W
R_{thJH}	per tyristor; DC	0.9 K/W
	per module	0.15 K/W
d_s	Creepage distance on surface (Pin to heatsink)	11.2 mm
d_A	Strike distance in air (Pin to heatsink)	11.2 mm
a	Max. allowable acceleration	50 m/s^2

Package style and outline

Dimensions in mm (1mm = 0.0394")

W3C



W3H

