Three Phase AC Controller Modules

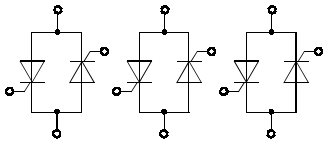
PSUT 45
PSUH 45

I_{RMS} = 3 x 44 A
V_{RRM} = 800-1600 V

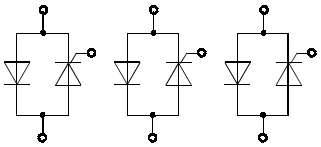
Preliminary Data Sheet

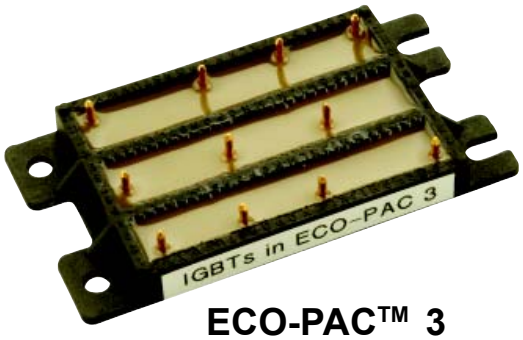
V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
900	800	PSUT 45/08 PSUH 45/08
1300	1200	PSUT 45/12 PSUH 45/12
1500	1400	PSUT 45/14 PSUH 45/14
1700	1600	PSUT 45/16 PSUH 45/16

W3C



W3H





ECO-PAC™ 3

Symbol	Test Conditions		Maximum Ratings	
I_{RMS}	T_C = 85 °C, 50-400 Hz (per phase)		44	A
I_{TRMS}	$T_{VJ} = T_{VJM}$		32	A
I_{TAVM}	T_C = 85 °C;	180° sine, per thyristor	20	A
I_{TSM}	T_{VJ} = 45 °C	t = 10 ms (50 Hz), sine	320	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	350	A
	T_{VJ} = 125 °C	t = 10 ms (50 Hz), sine	290	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	320	A
$\int i^2 dt$	T_{VJ} = 45 °C	t = 10 ms (50 Hz), sine	510	A²s
	V_R = 0	t = 8.3 ms (60 Hz), sine	500	A²s
	T_{VJ} = 125 °C	t = 10 ms (50 Hz), sine	420	A²s
	V_R = 0	t = 8.3 ms (60 Hz), sine	420	A²s
$(di/dt)_{cr}$	T_{VJ} = 125 °C	repetitive, I_T = 20 A	150	A/µs
	f=50Hz, t_P=200µs			
	V_D=2/3V_{DRM}			
	I_G=0.3 A	non repetitive, $I_T = I_{TAVM}$	500	A/µs
	di_G/dt=0.3A/µs			
$(dv/dt)_{cr}$	T_{VJ} = 125 °C	V_D=2/3V_{DRM}	1000	V/µs
	R_{GK}= ∞, method 1 (linear voltage rise)			
P_{GM}	T_{VJ} = 125 °C	t_P=30µs	≤ 10	W
	$I_T = I_{TAVM}$	t_P=300µs	≤ 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 min	2500	V~
	I_{ISOL} ≤ 1 mA	t = 1 s	3000	V~
M_d	Mounting torque (M4)		1.5 - 2.0	Nm
			14 - 18	lb.in.
Weight	typ.		46	g

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

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

POWERSEM GmbH, Walpersdorfer Str. 53
D - 91126 Schwabach
Phone: 09122 - 9764 - 0 FAX: 09122 - 9764 - 20

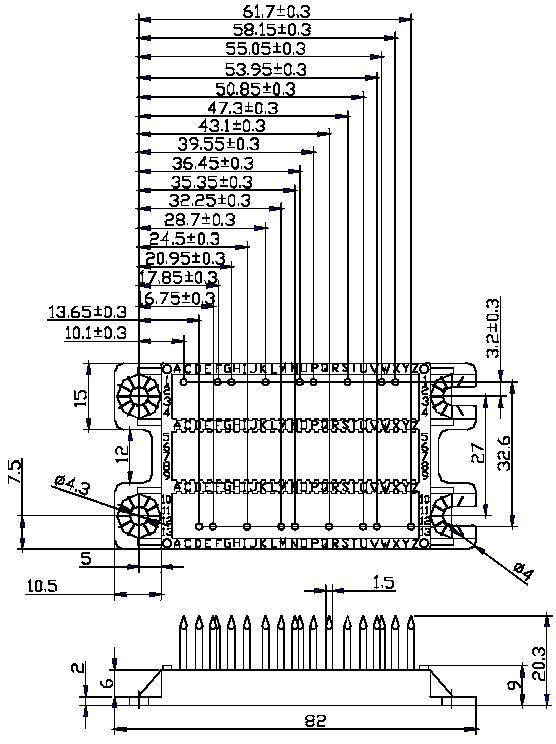
© 2005 POWERSEM reserves the right to change limits, test conditions and dimensions

Symbol	Test Conditions		Characteristic Value		
I_D, I_R	T_{VJ} = 125°C,	$V_R = V_{RRM}$, $V_D = V_{DRM}$	≤	5	mA
V_T	I_T = 45 A,	T_{VJ} = 25 °C	≤	1.45	V
V_{TO}	For power-loss calculations only			0.85	V
r_T				13	mΩ
V_{GT}	V_D=6V	T_{VJ}= 25°C	≤	1.0	V
		T_{VJ}=-40°C	≤	1.2	V
I_{GT}	V_D=6V	T_{VJ}= 25°C	≤	65	mA
		T_{VJ}=-40°C	≤	80	mA
V_{GD}	T_{VJ}= 125°C	V_D=2/3V_{DRM}	≤	0.2	V
I_{GD}	T_{VJ}= 125°C	V_D=2/3V_{DRM}	≤	5	mA
I_L	T_{VJ}= 25°C, t_P=10µs,		≤	150	mA
	I_G=0.3A, di_G/dt=0.3A/µs				
I_H	T_{VJ}= 25°C, V_D=6V, R_{GK}= ∞		≤	100	mA
t_{gd}	T_{VJ}= 25°C, V_D=1/2V_{DRM}		≤	2	µs
	I_G=0.3A, di_G/dt=0.3A/µs				
t_q	T_{VJ}= T_{VJM}; I_T=20A; t_p=200µs;di/dt=-10A/µs			150	µs
	V_R=100V; dv/dt=15V/µs; V_D=2/3V_{DRM}				
R_{thJC}	per thyristor; DC			1.3	K/W
	per module			0.217	K/W
R_{thJH}	per thyristor; DC			1.5	K/W
	per module			0.25	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/s²

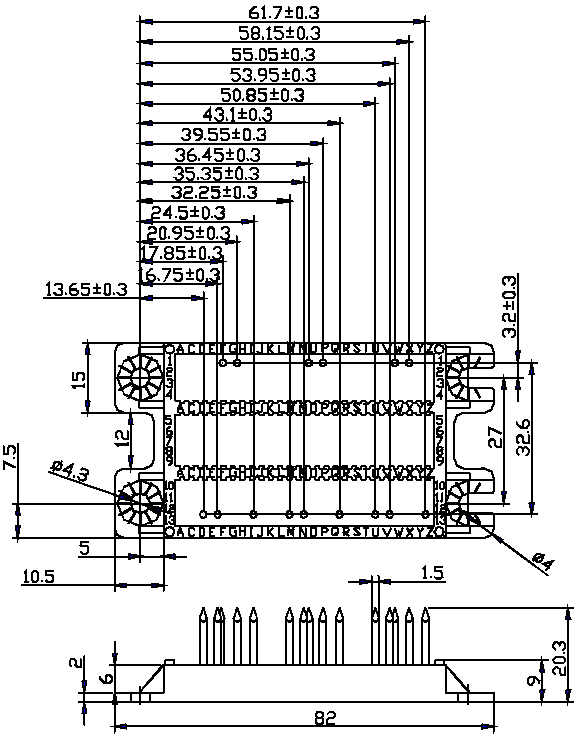
Package style and outline

Dimensions in mm (1mm = 0.0394")

W3C



W3H



POWERSEM GmbH, Walpersdorfer Str. 53
D - 91126 Schwabach
Phone: 09122 - 9764 - 0 FAX: 09122 - 9764 - 20

© 2005 POWERSEM reserves the right to change limits, test conditions and dimensions