Three Phase AC Controller Modules

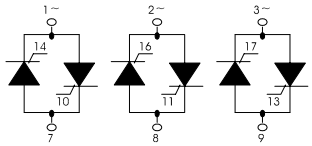
PSUT 40

I_{RMS} = 3 x 40A
V_{RRM} = 400-1600 V

Preliminary Data Sheet

V_{RSM} V_{DSM}	V_{RRM} V_{DRM}	Type
500	400	PSUT 40/04
900	800	PSUT 40/08
1300	1200	PSUT 40/12
1500	1400	PSUT 40/14
*1700	*1600	PSUT 40/16

* Delivery on request



Symbol	Test Conditions			Maximum Ratings	
I_{RMS}	T_C = 85 °C, 50-400 Hz (per phase)			40	A
I_{TRMS}	$T_{VJ} = T_{VJM}$			29	A
I_{TAVM}	T_C = 85 °C	180° sine		18	A
I_{TSM}	T_{VJ} = 45°C	t = 10 ms	(50 Hz), sine	400	A
	V_R = 0	t = 8.3 ms	(60 Hz), sine	450	A
	$T_{VJ} = T_{VJM}$	t = 10 ms	(50 Hz), sine	360	A
	V_R = 0	t = 8.3 ms	(60 Hz), sine	390	A
$\int i^2 dt$	T_{VJ} = 45°C	t = 10 ms	(50 Hz), sine	800	A^2 s
	V_R = 0	t = 8.3 ms	(60 Hz), sine	850	A^2 s
	$T_{VJ} = T_{VJM}$	t = 10 ms	(50 Hz), sine	650	A^2 s
	V_R = 0	t = 8.3 ms	(60 Hz), sine	640	A^2 s
$(di/dt)_{cr}$	$T_{VJ} = T_{JVM}$	repetitive, I_T = 150 A		100	A/µs
	f = 50Hz, t_P = 200µs				
	V_D = 2/3 V_{DRM}				
	I_G = 0.3 A	non repetitive, $I_T = I_{TAVM}$		500	A/µs
	di_G/dt = 0.3 A/µs				
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$	V_{DR} = 2/3 V_{DRM}		1000	V/µs
	R_{GK} = ∞, method 1 (linear voltage rise)				
P_{GM}	$T_{VJ} = T_{VJM}$	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 ~
	$I_{ISOL} \leq$ 1 mA	t = 1 s		3000	V ~
M_d	Mounting torque		(M5)	5	Nm
	Terminal connection torque		(M3)	1.5	Nm
			(M5)	5	Nm
Weight	typ.			220	g

Features

- Thyristor controller for AC (circuit W3C acc. to IEC) for mains frequency
- Isolation voltage 3000 V~
- Planar glasspassivated chips
- Package with metal base plate
- UL registered E 148688

Applications

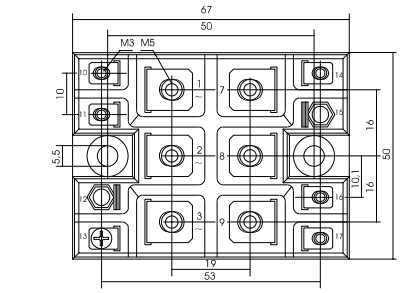
- Switching and control of three phase AC circuits
- Light and temperature control
- Softstart AC motor controller
- Solid state switches

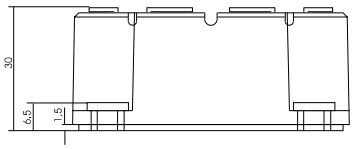
Advantages

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

Package, stil and outline

Dimensions in mm (1mm = 0.0394“)





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Symbol	Test Conditions			Characteristic Value	
I_D, I_R	$T_{VJ} = T_{VJM}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$		≤	5	mA
V_T	I_T = 80A, T_{VJ} = 25°C		≤	1.65	V
V_{TO}	For power-loss calculations only ($T_{VJ} = T_{VJM}$)			0.85	V
r_T				15	mΩ
V_{GT}	V_D = 6V	T_{VJ} = 25°C	≤	1.0	V
		T_{VJ} = -40°C	≤	1.6	V
I_{GT}	V_D = 6V	T_{VJ} = 25°C	≤	100	mA
		T_{VJ} = -40°C	≤	150	mA
V_{GD}	$T_{VJ} = T_{VJM}$	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}	$T_{VJ} = T_{VJM}$	V_D = 2/3 V_{DRM}	≤	5	mA
I_L	T_{VJ} = 25°C, t_P = 10µs		≤	200	mA
	I_G = 0.3A, di_G/dt = 0.3A/µs				
I_H	T_{VJ} = 25°C, V_D = 6V, R_{GK} = ∞		≤	150	mA
t_{gd}	T_{VJ} = 25°C, V_D = ½ V_{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, V_R = 100V			150	µs
	-di/dt = 10A/µs, dv/dt = 15V/µs, V_D = 2/3 V_{DRM}				
R_{thJC}	per thyristor; sine 180°el			1.43	K/W
	per module			0.238	K/W
R_{thJK}	per thyristor; sine 180° el			1.53	K/W
	per module			0.255	K/W
d_S	Creeping distance on surface			8.0	mm
d_A	Creeping distance in air			4.5	mm
a	Max. allowable acceleration			50	m/s^2

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