

Three Phase AC Controller Modules

PSUT 50

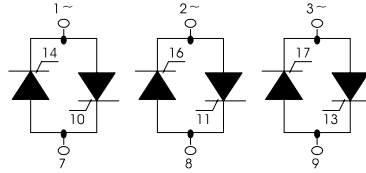
I_{RMS}
 V_{RRM}

= 3 x 50A
= 400-1600 V

Preliminary Data Sheet

V_{RSM} V_{DSM}	V_{RRM} V_{DRM}	Type
500	400	PSUT 50/04
900	800	PSUT 50/08
1300	1200	PSUT 50/12
1500	1400	PSUT 50/14
*1700	*1600	PSUT 50/16

* Delivery on request



Symbol	Test Conditions	Maximum Ratings
I_{RMS}	$T_C = 85^\circ C$, 50-400 Hz (per phase)	50 A
I_{TRMS}	$T_{VJ} = T_{VJM}$	36 A
I_{TAVM}	$T_C = 85^\circ C$ 180° sine	23 A
I_{TSM}	$T_{VJ} = 45^\circ C$ t = 10 ms (50 Hz), sine	520 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	560 A
	$T_{VJ} = T_{VJM}$ t = 10 ms (50 Hz), sine	460 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	500 A
$\int i^2 dt$	$T_{VJ} = 45^\circ C$ t = 10 ms (50 Hz), sine	1350 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1320 A ² s
	$T_{VJ} = T_{VJM}$ t = 10 ms (50 Hz), sine	1060 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	1050 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 150 A$ f = 50Hz, $t_p = 200\mu s$ $V_D = 2/3 V_{DRM}$	100 A/ μs
	$I_G = 0.3 A$ non repetitive, $I_T = I_{TAVM}$	500 A/ μs
	$di_G/dt = 0.3 A/\mu s$	
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000 V/ μs
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p = 30\mu s$	10 W
	$I_T = I_{TAVM}$ $t_p = 300\mu s$	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 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

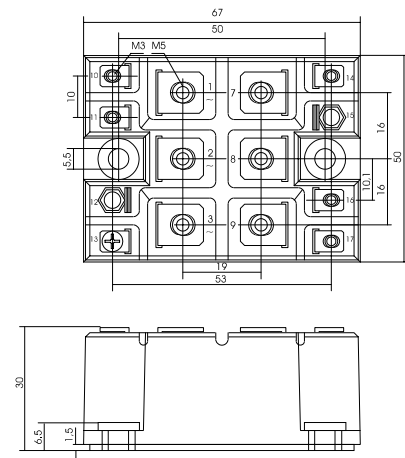
- Switching and control of three phase AC circuits
- Light and temperature control
- Softstart AC motor controller
- Solid state switches

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")



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	$I_T = 80A, T_{VJ} = 25^\circ C$	≤ 1.65 V	
V_{TO}	For power-loss calculations only ($T_{VJ} = T_{VJM}$)	0.85 V	
r_T		11 m Ω	
V_{GT}	$V_D = 6V$	$T_{VJ} = 25^\circ C$	≤ 1.0 V
		$T_{VJ} = -40^\circ C$	≤ 1.6 V
I_{GT}	$V_D = 6V$	$T_{VJ} = 25^\circ C$	≤ 100 mA
		$T_{VJ} = -40^\circ C$	≤ 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	$T_{VJ} = 25^\circ C, t_p = 10\mu s$	≤ 200 mA	
	$I_G = 0.3A, di_G/dt = 0.3A/\mu s$		
I_H	$T_{VJ} = 25^\circ C, V_D = 6V, R_{GK} = \infty$	≤ 150 mA	
t_{gd}	$T_{VJ} = 25^\circ C, V_D = 1/2 V_{DRM}$	≤ 2 μs	
	$I_G = 0.3A, di_G/dt = 0.3A/\mu s$		
t_q	$T_{VJ} = T_{VJM}, I_T = 20A, t_p = 200\mu s, V_R = 100V$	150 μs	
	$-di/dt = 10A/\mu s, dv/dt = 15V/\mu s, V_D = 2/3 V_{DRM}$		
R_{thJC}	per thyristor; sine 180°el	1.2 K/W	
	per module	0.2 K/W	
R_{thJK}	per thyristor; sine 180° el	1.31 K/W	
	per module	0.218 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	