

Three Phase AC Controller Modules

PSUT 50

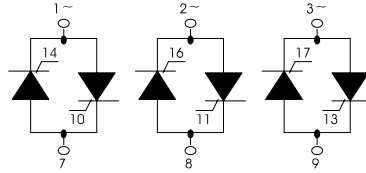
I_{RMS}
 V_{RRM}

= 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}	$T_C = 85^\circ\text{C}$, 50-400 Hz (per phase)	50 A
I_{TRMS}	$T_{VJ} = T_{VJM}$	36 A
I_{TAVM}	$T_C = 85^\circ\text{C}$ 180° sine	23 A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	520 A
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	560 A
	$T_{VJ} = T_{VJM}$ $t = 10\text{ ms}$ (50 Hz), sine	460 A
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	500 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	1350 A^2s
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	1320 A^2s
	$T_{VJ} = T_{VJM}$ $t = 10\text{ ms}$ (50 Hz), sine	1060 A^2s
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	1050 A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 150\text{ A}$	100 $\text{A}/\mu\text{s}$
	$f = 50\text{ Hz}$, $t_p = 200\mu\text{s}$	
	$V_D = 2/3 V_{DRM}$	
	$I_G = 0.3\text{ A}$ non repetitive, $I_T = I_{TAVM}$	500 $\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $V_{DR} = 2/3 V_{DRM}$	1000 $\text{V}/\mu\text{s}$
	$R_{GK} = \infty$, method 1 (linear voltage rise)	
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p = 30\mu\text{s}$	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 $^\circ\text{C}$
T_{VJM}		125 $^\circ\text{C}$
T_{stg}		-40 ... + 125 $^\circ\text{C}$
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)	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

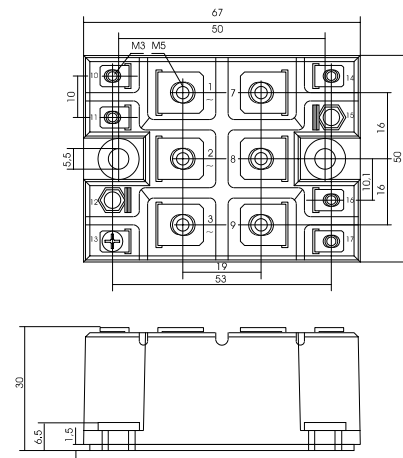
- Switching and control of three phase AC circuits
- Light and temperature control
- Softstart AC motor controller
- Solid state switches

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	$T_{VJ} = T_{VJM}, I_T = 20A, t_p = 200\mu s, V_R = 100V$ $-di/dt = 10A/\mu s, dv/dt = 15V/\mu s, V_D = 2/3 V_{DRM}$	150 μs
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