POWERSEM

| **Three Phase** | **PSUT 36** | I_{RMS} | **= 3 x 39A** |
| **AC Controller Modules** | | V_{RRM} | **= 400-1600 V** |

Preliminary Data Sheet

V_{RSM} V_{DSM}	V_{RRM} V_{DRM}	Type
500	400	PSUT 36/04
900	800	PSUT 36/08
1300	1200	PSUT 36/12
1500	1400	PSUT 36/14
*1700	*1600	PSUT 36/16

* Delivery on request
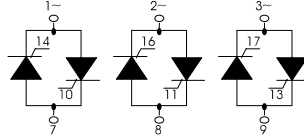
Symbol	Test Conditions			Maximum Ratings	
I_{RMS}	T_C = 85 °C, 50-400 Hz (per phase)			39	A
I_{TRMS}	T_{VJ} = T_{VJM}			28	A
I_{TAVM}	T_C = 85 °C	180° sine		18	A
I_{TSM}	T_{VJ} = 45°C	t = 10 ms	(50 Hz), sine	320	A
	V_R = 0	t = 8.3 ms	(60 Hz), sine	350	A
	T_{VJ} = T_{VJM}	t = 10 ms	(50 Hz), sine	280	A
	V_R = 0	t = 8.3 ms	(60 Hz), sine	310	A
$\int i^2 dt$	T_{VJ} = 45°C	t = 10 ms	(50 Hz), sine	500	$A^2 s$
	V_R = 0	t = 8.3 ms	(60 Hz), sine	520	$A^2 s$
	T_{VJ} = T_{VJM}	t = 10 ms	(50 Hz), sine	390	$A^2 s$
	V_R = 0	t = 8.3 ms	(60 Hz), sine	400	$A^2 s$
$(di/dt)_{cr}$	T_{VJ} = T_{JVM} f = 50Hz, t_P = 200µs V_D = 2/3 V_{DRM}	repetitive, I_T = 20 A		150	A/µs
	I_G = 0.3 A di_G/dt = 0.3 A/µs	non repetitive, I_T = I_{TAVM}		500	A/µs
$(dv/dt)_{cr}$	T_{VJ} = T_{VJM} R_{GK} = ∞, method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}		1000	V/µs
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} ≤ 1 mA	t = 1 s		3000	V ~
M_d	Mounting torque		(M5)	2-2.5	Nm
Weight	typ.			100	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
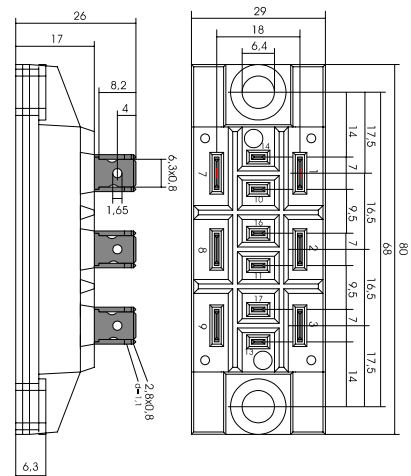- UL registered E 148688

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	$T_{VJ} = T_{VJM}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$		$\leq$	5	mA
V_T	$I_T = 45A$, $T_{VJ} = 25°C$		$\leq$	1.45	V
V_{TO}	For power-loss calculations only ($T_{VJ} = T_{VJM}$)			0.85	V
r_T				13	mΩ
V_{GT}	$V_D = 6V$	$T_{VJ} = 25°C$	$\leq$	1.0	V
		$T_{VJ} = -40°C$	$\leq$	1.2	V
I_{GT}	$V_D = 6V$	$T_{VJ} = 25°C$	$\leq$	65	mA
		$T_{VJ} = -40°C$	$\leq$	80	mA
V_{GD}	$T_{VJ} = T_{VJM}$	$V_D = 2/3 V_{DRM}$	$\leq$	0.2	V
I_{GD}	$T_{VJ} = T_{VJM}$	$V_D = 2/3 V_{DRM}$	$\leq$	5	mA
I_L	$T_{VJ} = 25°C$, $t_P = 10\mu s$		$\leq$	150	mA
	$I_G = 0.3A$, $di_G/dt = 0.3A/\mu s$				
I_H	$T_{VJ} = 25°C$, $V_D = 6V$, $R_{GK} = \infty$		$\leq$	100	mA
t_{gd}	$T_{VJ} = 25°C$, $V_D = ½ V_{DRM}$		$\leq$	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			1.3	K/W
	per module			0.22	K/W
R_{thJK}	per thyristor; sine 180° el			1.5	K/W
	per module			0.25	K/W
d_S	Creeping distance on surface			16.1	mm
d_A	Creeping distance in air			6.0	mm
a	Max. allowable acceleration			50	m/s^2