

Three Phase AC Controller Modules

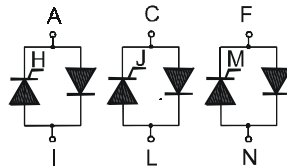
PSUH 35

$$I_{RMS} = 3 \times 35 \text{ A}$$

$$V_{RRM} = 600-1200 \text{ V}$$

Preliminary Data Sheet

| V_{RSM} V_{DSM} (V) | V_{RRM} V_{DRM} (V) | Type |
|-------------------------------|-------------------------------|------------|
| 700 | 600 | PSUH 35/06 |
| 900 | 800 | PSUH 35/08 |
| 1300 | 1200 | PSUH 35/12 |



| Symbol | Test Conditions | Maximum Ratings |
|----------------|---|----------------------|
| I_{RMS} | $T_C = 85^\circ\text{C}$; (per phase) | 35 A |
| I_{TAVM} | $T_C = 85^\circ\text{C}$; 180° sine, per Thyristor | 16 A |
| I_{TSM} | $T_{VJ} = 45^\circ\text{C}$ t = 10 ms (50 Hz), sine | 200 A |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 210 A |
| | $T_{VJ} = 125^\circ\text{C}$ t = 10 ms (50 Hz), sine | 180 A |
| $\int i^2 dt$ | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 190 A |
| | $T_{VJ} = 45^\circ\text{C}$ t = 10 ms (50 Hz), sine | 200 A ² s |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 180 A ² s |
| $(di/dt)_{cr}$ | $T_{VJ} = 125^\circ\text{C}$ t = 10 ms (50 Hz), sine | 160 A ² s |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 150 A ² s |
| | $T_{VJ} = T_{VJM}$ repetitive, $I_T = 20 \text{ A}$ $f=50\text{Hz}$, $t_p=200\mu\text{s}$ $V_D=2/3V_{DRM}$ | 500 A/ μs |
| $(dv/dt)_{cr}$ | $I_G=0.15 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.15\text{A}/\mu\text{s}$ | 500 A/ μs |
| | $T_{VJ} = T_{VJM}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise) | 500 V/ μs |
| P_{GM} | $T_{VJ} = T_{VJM}$ $t_p=30\mu\text{s}$ | $\leq 5 \text{ W}$ |
| | $I_T = I_{TAVM}$ $t_p=300\mu\text{s}$ | $\leq 2.5 \text{ W}$ |
| 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~ |
| | $I_{ISOL} \leq 1 \text{ mA}$ t = 1 s | 3000 V~ |
| M_d | Mounting torque (M4) | 1.5 - 1.8 Nm |
| | | 14 - 16 lb.in. |
| Weight | typ. | 16 g |

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 registered, E 148688

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 two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

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

| Symbol | Test Conditions | Characteristic Value |
|------------|--|----------------------|
| $I_{D,R}$ | $T_{VJ} = T_{VJM}, V_R = V_{RRM}, V_D = V_{DRM}$ | ≤ 5 mA |
| V_T | $I_T = 20$ A, $T_{VJ} = 25$ °C | ≤ 1.6 V |
| V_{TO} | For power-loss calculations only | 0.85 V |
| r_T | | 27 mΩ |
| V_{GT} | $V_D = 6$ V, $T_{VJ} = 25$ °C | ≤ 1.5 V |
| | $T_{VJ} = -40$ °C | ≤ 2.5 V |
| I_{GT} | $V_D = 6$ V, $T_{VJ} = 25$ °C | ≤ 25 mA |
| | $T_{VJ} = -40$ °C | ≤ 50 mA |
| V_{GD} | $T_{VJ} = T_{VJM}, V_D = 2/3 V_{DRM}$ | ≤ 0.2 V |
| I_{GD} | $T_{VJ} = T_{VJM}, V_D = 2/3 V_{DRM}$ | ≤ 3 mA |
| I_L | $T_{VJ} = 25$ °C, $t_p = 10$ μs $I_G = 0.1$ A, $di_G/dt = 0.1$ A/μs | ≤ 75 mA |
| I_H | $T_{VJ} = 25$ °C, $V_D = 6$ V, $R_{GK} = \infty$ | ≤ 50 mA |
| t_{gd} | $T_{VJ} = 25$ °C, $V_D = 1/2 V_{DRM}$ $I_G = 0.1$ A, $di_G/dt = 0.1$ A/μs | ≤ 2 μs |
| R_{thJC} | per thyristor; DC | 1.3 K/W |
| | per module | 0.22 K/W |
| R_{thJK} | per thyristor; sine 180° el | typ. 1.8 K/W |
| | per module | typ. 0.3 K/W |
| d_s | Creeping distance on surface | 11.2 mm |
| d_A | Creeping distance in air | 5.0 mm |
| a | Max. allowable acceleration | 50 m/s ² |

Package style and outline

Dimensions in mm (1mm = 0.0394")

