

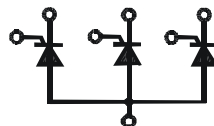
Thyristor Modules

PSVT 90
PSXT 90

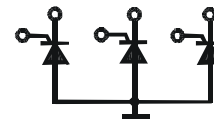
$I_{TRMS} = 165 \text{ A}$
 $V_{RRM} = 800 - 1600 \text{ V}$

Preliminary Data Sheet

| V_{RSM} V_{DSM} | V_{RRM} V_{DRM} | Type | Type |
|------------------------|------------------------|------------|------------|
| 900 | 800 | PSVT 90/08 | PSXT 90/08 |
| 1300 | 1200 | PSVT 90/12 | PSXT 90/12 |
| 1500 | 1400 | PSVT 90/14 | PSXT 90/14 |
| 1700 | 1600 | PSVT 90/16 | PSXT 90/16 |



PSVT



Base

PSXT



Characteristic picture

| Symbol | Test Conditions | Maximum Ratings | |
|----------------|---|---|-----------------------|
| I_{TRMS} | | 165 A | |
| I_{TAVM} | $T_C = 83^\circ\text{C}$ 180° sine, | 75 A | |
| I_{TAVM} | $T_C = 85^\circ\text{C}$ 180° sine, | 70 A | |
| I_{TSM} | $T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ t = 10 ms (50Hz), sine | 1200 A | |
| | t = 8.3 ms (60Hz), sine | 1300 A | |
| | $T_{VJ} = T_{VJM}$ $V_R = 0$ t = 10 ms (50Hz), sine | 1050 A | |
| | t = 8.3 ms (60Hz), sine | 1150 A | |
| $\int i^2 dt$ | $T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ t = 10 ms (50Hz), sine | 7200 A ² s | |
| | t = 8.3 ms (60Hz), sine | 7010 A ² s | |
| | $T_{VJ} = T_{VJM}$ $V_R = 0$ t = 10 ms (50Hz), sine | 5500 A ² s | |
| | t = 8.3 ms (60Hz), sine | 5480 A ² s | |
| $(di/dt)_{cr}$ | $T_{VJ} = T_{VJM}$ f = 50Hz, $t_p = 200\mu\text{s}$ $V_D = 2/3 V_{DRM}$ | repetitive, $I_T = 150 \text{ A}$ 150 A/ μs | |
| | $I_G = 0.45 \text{ A}$ $di_G/dt = 0.45 \text{ A}/\mu\text{s}$ | non repetitive; $I_T = I_{TAVM}$ 500 A/ μs | |
| | $(dv/dt)_{cr}$ | $T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise) | 1000 V/ μs |
| | P_{GM} | $T_{VJ} = T_{VJM}$ $I_T = I_{TAVM}$ $t_p = 30\mu\text{s}$ $t_p = 300\mu\text{s}$ | 10 W 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 $I_{ISOL} \leq 1 \text{ mA}$ | t = 1 min t = 1 s | 2500 V~ 3000 V~ |
| | M_d | Mounting torque (M6) Terminal connection torque (M6) | 5 Nm 5 Nm |
| Weight | typ. | | 270 g |

Features

- Package with screw terminals
- Isolation voltage 3000V~
- Planar glasspassivated chips
- UL registered, E 148688

Applications

- Heat and temperature control for industrial furnaces and chemical processes
- Lighting control
- Motor control
- Power converter

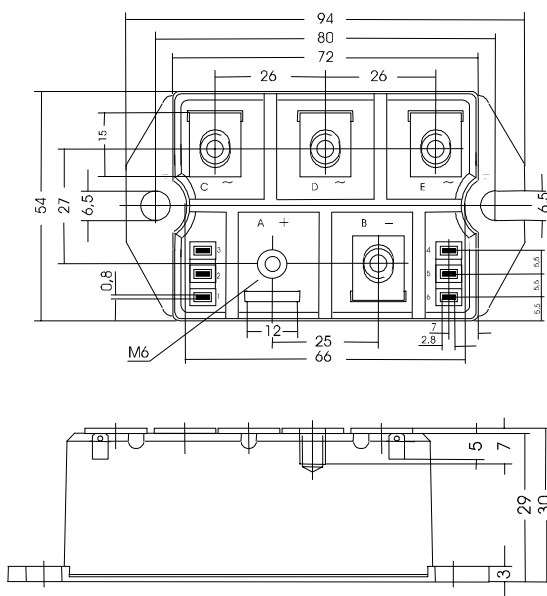
Advantages

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

| Symbol | Test Conditions | Characteristic Values | |
|------------|---|---|--------------------------------|
| I_D, I_R | $T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$ | ≤ 5 mA | |
| V_T | $I_T = 200A; T_{VJ} = 25^\circ C$ | ≤ 1.75 V | |
| V_{TO} | For power-loss calculations only ($T_{VJ}=T_{VJmax}$) | 0.85 V | |
| r_T | | 4.3 mΩ | |
| V_{GT} | $V_D = 6V$ | $T_{VJ} = 25^\circ C$ $T_{VJ} = -40^\circ C$ | ≤ 1.5 V ≤ 1.6 V |
| I_{GT} | $V_D = 6V$ | $T_{VJ} = 25^\circ C$ $T_{VJ} = -40^\circ C$ | ≤ 100 mA ≤ 200 mA |
| V_{GD} | $T_{VJ} = T_{VJM}$ | $V_D = 2/3 V_{DRM}$ | ≤ 0.2 V |
| I_{GD} | | | ≤ 10 mA |
| I_L | $T_{VJ} = 25^\circ C; t_p = 10\mu s$ $I_G = 0.45A; di_G/dt = 0.45 A/\mu s$ | ≤ 450 mA | |
| I_H | $T_{VJ} = 25^\circ C; V_D = 6V; R_{GK} = \infty$ | ≤ 200 mA | |
| t_{gd} | $T_{VJ} = 25^\circ C; V_D = 1/2 V_{DRM}$ $I_G = 0.45A; di_G/dt = 0.45A/\mu s$ | ≤ 2 μs | |
| t_q | $T_{VJ} = T_{VJM}; I_T = 120A, t_p = 200\mu s; -di/dt=10A/\mu s$ $V_R = 100V; dv/dt = 20 V/\mu s; V_D = 2/3 V_{DRM}$ | 150 μs | |
| R_{thJC} | per thyristor; sine 180°el per bridge | 0.31 K/W 0.1 K/W | |
| R_{thJK} | per thyristor; sine 180°el per bridge | 0.51 K/W 0.17 K/W | |
| d_s | Creeping distance on surface | 10 mm | |
| d_A | Creeping distance in air | 9.4 mm | |
| a | max. allowable acceleration | 50 m/s ² | |

Package, style and outline

Dimensions in mm (1 mm=0.0394")



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