

Thyristor Modules

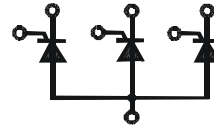
PSVT 90
PSXT 90

I_{TRMS}
 V_{RRM}

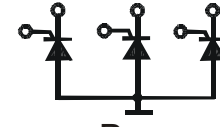
= 165 A
= 800 - 1600 V

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

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
	$T_{VJ} = T_{VJM}$ t = 10 ms (50Hz), sine	1050 A
	$V_R = 0$ 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
	$T_{VJ} = T_{VJM}$ t = 10 ms (50Hz), sine	5500 A ² s
	$V_R = 0$ 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
	$I_G = 0.45\text{ A}$ non repetitive; $I_T = I_{TAVM}$	500 A/ μs
	$di_G/dt = 0.45\text{ A}/\mu\text{s}$	
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$	1000 V/ μs
	$R_{GK} = \infty$; 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 °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 (M6)	5 Nm
	Terminal connection torque (M6)	5 Nm
Weight	typ.	270 g



Characteristic picture

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 m Ω	
V_{GT}	$V_D = 6V$	$T_{VJ} = 25^\circ C$	≤ 1.5 V
		$T_{VJ} = -40^\circ C$	≤ 1.6 V
I_{GT}	$V_D = 6V$	$T_{VJ} = 25^\circ C$	≤ 100 mA
		$T_{VJ} = -40^\circ C$	≤ 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	0.31 K/W	
	per bridge	0.1 K/W	
R_{thJK}	per thyristor; sine 180°el	0.51 K/W	
	per bridge	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")

