

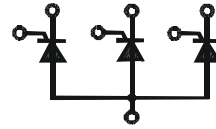
## Thyristor Modules

**PSVT 160**  
**PSXT 160**

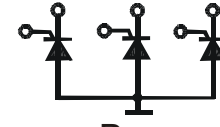
$I_{TRMS} = 180 \text{ A}$   
 $V_{RRM} = 800 - 1600 \text{ V}$

### Preliminary Data Sheet

$V_{RSM}$ $V_{DSM}$	$V_{RRM}$ $V_{DRM}$	Type	Type
900	800	PSVT 160/08	PSXT 160/08
1300	1200	PSVT 160/12	PSXT 160/12
1500	1400	PSVT 160/14	PSXT 160/14
1700	1600	PSVT 160/16	PSXT 160/16



PSVT



Base

PSXT

Symbol	Test Conditions	Maximum Ratings	
$I_{TRMS}$		180 A	
$I_{TAVM}$	$T_C = 63^\circ\text{C}$	115 A	
$I_{TAVM}$	$T_C = 85^\circ\text{C}$	85 A	
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms (50Hz), sine}$	1700 A
	$V_R = 0$	$t = 8.3 \text{ ms (60Hz), sine}$	1800 A
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms (50Hz), sine}$	1540 A
	$V_R = 0$	$t = 8.3 \text{ ms (60Hz), sine}$	1640 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms (50Hz), sine}$	14450 $\text{A}^2\text{s}$
	$V_R = 0$	$t = 8.3 \text{ ms (60Hz), sine}$	13500 $\text{A}^2\text{s}$
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms (50Hz), sine}$	11850 $\text{A}^2\text{s}$
	$V_R = 0$	$t = 8.3 \text{ ms (60Hz), sine}$	11300 $\text{A}^2\text{s}$
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$	repetitive, $I_T = 250 \text{ A}$	150 $\text{A}/\mu\text{s}$
	$f = 50\text{Hz}, t_p = 200\mu\text{s}$		
	$V_D = 2/3 V_{DRM}$		
$(dv/dt)_{cr}$	$I_G = 0.45 \text{ A}$	non repetitive; $I_T = I_{TAVM}$	500 $\text{A}/\mu\text{s}$
	$di_G/dt = 0.45 \text{ A}/\mu\text{s}$		
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM};$	$V_{DR} = 2/3 V_{DRM}$	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	(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	
$I_D, I_R$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq 5$ mA	
$V_T$	$I_T = 300A; T_{VJ} = 25^\circ C$	$\leq 1.74$ V	
$V_{TO}$	For power-loss calculations only ( $T_{VJ}=T_{VJmax}$ )	0.85 V	
$r_T$		3.2 m $\Omega$	
$V_{GT}$	$V_D = 6V$	$T_{VJ} = 25^\circ C$	$\leq 2.5$ V
		$T_{VJ} = -40^\circ C$	$\leq 2.6$ V
$I_{GT}$	$V_D = 6V$	$T_{VJ} = 25^\circ C$	$\leq 150$ mA
		$T_{VJ} = -40^\circ C$	$\leq 200$ mA
$V_{GD}$	$T_{VJ} = T_{VJM}$	$V_D = 2/3 V_{DRM}$	$\leq 0.2$ V
$I_{GD}$			$\leq 10$ mA
$I_L$	$T_{VJ} = 25^\circ C; t_p = 10\mu s$	$\leq 450$ mA	
	$I_G = 0.45A; di_G/dt = 0.45 A/\mu s$		
$I_H$	$T_{VJ} = 25^\circ C; V_D = 6V; R_{GK} = \infty$	$\leq 200$ mA	
$t_{gd}$	$T_{VJ} = 25^\circ C; V_D = 1/2 V_{DRM}$	$\leq 2$ $\mu s$	
	$I_G = 0.45A; di_G/dt = 0.45A/\mu s$		
$t_q$	$T_{VJ} = T_{VJM}; I_T = 150A, t_p = 200\mu s; -di/dt=10A/\mu s$	185 $\mu s$	
	$V_R = 100V; dv/dt = 20 V/\mu s; V_D = 2/3 V_{DRM}$		
$R_{thJC}$	per thyristor; sine 180°el	0.3 K/W	
	per bridge	0.1 K/W	
$R_{thJK}$	per thyristor; sine 180°el	0.5 K/W	
	per bridge	0.167 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 <sup>2</sup>	

## Package, style and outline

Dimensions in mm (1 mm=0.0394")

