

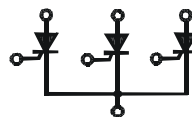
## Thyristor Modules

**PSWT 70**  
**PSYT 70**

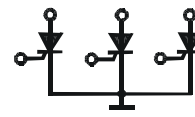
**$I_{TRMS}$**  = 80 A  
 **$V_{RRM}$**  = 800 - 1600 V

### Preliminary Data Sheet

$V_{RSM}$ $V_{DSM}$	$V_{RRM}$ $V_{DRM}$	Type	Type
900	800	PSWT 70/08	PSYT 70/08
1300	1200	PSWT 70/12	PSYT 70/12
1500	1400	PSWT 70/14	PSYT 70/14
1700	1600	PSWT 70/16	PSYT 70/16



**PSWT**



Base

**PSYT**

Symbol	Test Conditions	Maximum Ratings	
$I_{TRMS}$		80 A	
$I_{TAVM}$	$T_C = 83^\circ\text{C}$ 180° sine,	51 A	
$I_{TAVM}$	$T_C = 85^\circ\text{C}$ 180° sine,	49 A	
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ t = 10 ms (50Hz), sine	1150 A	
	t = 8.3 ms (60Hz), sine	1230 A	
	$T_{VJ} = T_{VJM}$ $V_R = 0$ t = 10 ms (50Hz), sine	1000 A	
	t = 8.3 ms (60Hz), sine	1070 A	
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ t = 10 ms (50Hz), sine	6600 A <sup>2</sup> s	
	t = 8.3 ms (60Hz), sine	6280 A <sup>2</sup> s	
	$T_{VJ} = T_{VJM}$ $V_R = 0$ t = 10 ms (50Hz), sine	5000 A <sup>2</sup> s	
	t = 8.3 ms (60Hz), sine	4750 A <sup>2</sup> s	
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50Hz, $t_p = 200\mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.45 \text{ A}$ $di_G / dt = 0.45 \text{ A}/\mu\text{s}$	repetitive, $I_T = 150 \text{ A}$ 150 A/ $\mu\text{s}$	
	non repetitive; $I_T = I_{TAVM}$	500 A/ $\mu\text{s}$	
	$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ ; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$ ; method 1 (linear voltage rise)	1000 V/ $\mu\text{s}$
	$P_{GM}$	$T_{VJ} = T_{VJM}$ $I_T = I_{TAVM}$ $t_p = 30\mu\text{s}$ $t_p = 300\mu\text{s}$	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	



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	
$V_T$	$I_T = 200A; T_{VJ} = 25^\circ C$	$\leq 1.75$ V	
$V_{TO}$	For power-loss calculations only ( $T_{VJ}=T_{VJmax}$ )	0.85 V	
$r_T$		5.3 m $\Omega$	
$V_{GT}$	$V_D = 6V$	$T_{VJ} = 25^\circ C$	$\leq 1.5$ V
		$T_{VJ} = -40^\circ C$	$\leq 1.6$ V
$I_{GT}$	$V_D = 6V$	$T_{VJ} = 25^\circ C$	$\leq 100$ 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	
$t_{gd}$	$T_{VJ} = 25^\circ C; V_D = 1/2 V_{DRM}$	$\leq 2$ $\mu s$	
	$I_G = 0.45A; di_G/dt = 0.45A/\mu s$		
$t_q$	$T_{VJ} = T_{VJM}; I_T = 120A, t_p = 200\mu s; -di/dt=10A/\mu s$	150 $\mu s$	
	$V_R = 100V; dv/dt = 20 V/\mu s; V_D = 2/3 V_{DRM}$		
$R_{thJC}$	per thyristor; sine 180°el	0.35 K/W	
	per bridge	0.117 K/W	
$R_{thJK}$	per thyristor; sine 180°el	0.55 K/W	
	per bridge	0.183 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")

