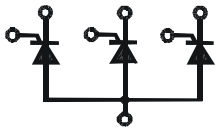
POWERSEM

Thyristor Modules PSVT 160 PSXT 160

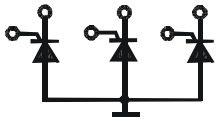
I_{TRMS} = 180 A
V_{RRM} = 800 - 1600 V

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



PSXT

Symbol	Test Conditions		Maximum Ratings	
I_{TRMS}			180	A
I_{TAVM}	T_C = 63°C	180° sine,	115	A
I_{TAVM}	T_C = 85°C	180° sine,	85	A
I_{TSM}	T_{VJ} = 45°C	t = 10 ms (50Hz), sine	1700	A
	V_R = 0	t = 8.3 ms (60Hz), sine	1800	A
	T_{VJ} = T_{VJM}	t = 10 ms (50Hz), sine	1540	A
	V_R = 0	t = 8.3 ms (60Hz), sine	1640	A
$\int i^2dt$	T_{VJ} = 45°C	t = 10 ms (50Hz), sine	14450	A^2s
	V_R = 0	t = 8.3 ms (60Hz), sine	13500	A^2s
	T_{VJ} = T_{VJM}	t = 10 ms (50Hz), sine	11850	A^2s
	V_R = 0	t = 8.3 ms (60Hz), sine	11300	A^2s
$(di/dt)_{cr}$	T_{VJ} = T_{VJM} f =50Hz, t_p =200µs V_D = 2/3 V_{DRM}	repetitive, I_T = 250 A	150	A/µs
	I_G = 0.45 A di_G/dt=0.45 A/µs	non repetitive; I_T = I_{TAVM}	500	A/µs
$(dv/dt)_{cr}$	T_{VJ} = T_{VJM}; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	T_{VJ} = T_{VJM}	t_p = 30µs	10	W
	I_T = I_{TAVM}	t_P = 300µs	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} ≤ 1 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

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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 = 300A; T_{VJ} = 25°C		≤	1.74	V
V_{TO}	For power-loss calculations only ($T_{VJ}=T_{VJmax}$)			0.85	V
r_T				3.2	mΩ
V_{GT}	V_D = 6V	T_{VJ} = 25°C	≤	2.5	V
		T_{VJ} = -40°C	≤	2.6	V
I_{GT}	V_D = 6V	T_{VJ} = 25°C	≤	150	mA
		T_{VJ} = -40°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°C; t_P = 10µs		≤	450	mA
	I_G = 0.45A; di_G/dt = 0.45 A/µs				
I_H	T_{VJ} = 25°C; V_D = 6V; R_{GK} = ∞		≤	200	mA
t_{gd}	T_{VJ} = 25°C; V_D = ½ V_{DRM}		≤	2	µs
	I_G = 0.45A; di_G/dt = 0.45A/µs				
t_q	$T_{VJ} = T_{VJM}$; I_T = 150A, t_P = 200µs; -di/dt=10A/µs			185	µs
	V_R = 100V; dv/dt = 20 V/µs; 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^2

Package, style and outline

Dimensions in mm (1 mm=0.0394")