

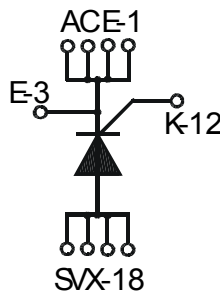
Thyristor Module

PSET 180/08-18

Preliminary Data Sheet

I_{TRMS} = 280 A
 I_{TAVM} = 180 A
 V_{RRM} = 600-1800V

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
900	800	PSET 180/08
1300	1200	PSET 180/12
1500	1400	PSET 180/14
1700	1600	PSET 180/16
1900	1800	PSET 180/18



Symbol	Test Conditions	Maximum Ratings
I_{TAVM}	$T_C = 90^\circ\text{C}$, $T_{VJ} = 130^\circ\text{C}$; 180° sine	180 A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	4500 A
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	4900 A
	$T_{VJ} = 125^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	3800 A
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	4200 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	101000 A ² s
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	99500 A ² s
	$T_{VJ} = 125^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	72000 A ² s
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	73000 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ repetitive, $I_T = 250\text{ A}$ $f=50\text{ Hz}$, $t_p=200\mu\text{s}$ $V_D=2/3V_{DRM}$	150 A/ μs
	$I_G=0.5\text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.5\text{ A}/\mu\text{s}$	500 A/ μs
	$T_{VJ} = 125^\circ\text{C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000 V/ μs
P_{GM}	$T_{VJ} = 125^\circ\text{C}$ $t_p=30\mu\text{s}$	≤ 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... + 130 °C
T_{VJM}	for 10 sec	150 °C
T_{stg}		-40... + 125 °C
V_{ISOL}	50/60 Hz, RMS $t = 1\text{ min}$	3000 V~
	$I_{ISOL} \leq 1\text{ mA}$ $t = 1\text{ s}$	3600 V~
M_d	Mounting torque (M4)	1.5 - 2.0 Nm
		14 - 18 lb.in.
Weight	typ.	24 g

Features

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- Isolation voltage 3600 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- UL registered, E 148688

Applications

- DC motor control
- Light and temperature control
- Softstart AC motor controller
- Solid state switches

Advantages

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

Data according to IEC 60747 refer to a single thyristor unless otherwise stated.

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = 125^{\circ}\text{C}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$	≤ 10 mA
V_T	$I_T = 200$ A, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.1 V
V_{TO}	For power-loss calculations only	0.75 V
r_T		1.23 m Ω
V_{GT}	$V_D = 6$ V, $T_{VJ} = 25^{\circ}\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^{\circ}\text{C}$	≤ 1.6 V
I_{GT}	$V_D = 6$ V, $T_{VJ} = 25^{\circ}\text{C}$	≤ 300 mA
	$T_{VJ} = -40^{\circ}\text{C}$	≤ 400 mA
V_{GD}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3 V_{DRM}$	≤ 0.2 V
I_{GD}	$T_{VJ} = 125^{\circ}\text{C}$, $V_D = 2/3 V_{DRM}$	≤ 10 mA
I_L	$T_{VJ} = 25^{\circ}\text{C}$, $t_p = 10\mu\text{s}$	≤ 450 mA
	$I_G = 0.5$ A, $di_G/dt = 0.5$ A/ μs	
I_H	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 6$ V, $R_{GK} = \infty$	≤ 200 mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}$, $V_D = 1/2 V_{DRM}$	≤ 2 μs
	$I_G = 0.5$ A, $di_G/dt = 0.5$ A/ μs	
R_{thJC}	per thyristor; DC, max.	0.17 K/W
	per module, max.	0.09 K/W
R_{thJK}	per thyristor; sine 180° el, typ.	0.23 K/W
	per module, typ.	0.12 K/W
d_s	Creeping distance on surface	11.2 mm
d_A	Creeping distance in air	5.0 mm
a	Max. allowable acceleration	50 m/s ²

Package style and outline

Dimensions in mm (1mm = 0.0394")

