

Thyristor Modules

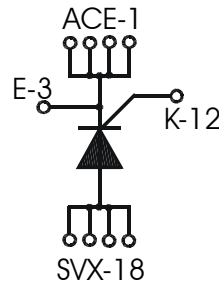
ECO-PAC 2

$$I_{TRMS} = 280 \text{ A}$$

$$I_{TAVM} = 180 \text{ A}$$

$$V_{RRM} = 1200/1600 \text{ V}$$

V_{RSM}	V_{RRM}	Typ
V_{DSM} V	V_{DRM} V	
1300	1200	VCO 180 - 12io7
1700	1600	VCO 180 - 16io7



Symbol	Conditions	Maximum Ratings	
I_{TRMS}		280	A
I_{TAVM}	$T_C = 90^\circ\text{C}; T_{VJ} = 130^\circ\text{C}; 180^\circ \text{ sine}$	180	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms}$ (50 Hz)	4500	A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz)	4900	A
	$T_{VJ} = 125^\circ\text{C}; t = 10 \text{ ms}$ (50 Hz)	3800	A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz)	4200	A
I^2t	$T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms}$ (50 Hz)	101 000	A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz)	99 500	A ² s
	$T_{VJ} = 125^\circ\text{C}; t = 10 \text{ ms}$ (50 Hz)	72 000	A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz)	73 000	A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C};$ repetitive, $I_T = 250 \text{ A}$ $f = 50 \text{ Hz}; t_p = 200 \mu\text{s};$	150	A/ μs
	$V_D = \frac{2}{3} V_{DRM};$ non repetitive, $I_T = I_{TAVM}$ $I_G = 0.5 \text{ A};$ $di_G/dt = 0.5 \text{ A}/\mu\text{s}$	500	A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3} V_{DRM};$ $R_{GK} = \infty;$ method 1 (linear voltage rise)	1000	V/ μs
P_{GM}	$T_{VJ} = 125^\circ\text{C};$ $t_p = 30 \text{ ms}$	≤ 10	W
	$I_T = I_{T(AV)M};$ $t_p = 300 \text{ ms}$	≤ 5	W
P_{GAVM}		0.5	W
V_{RGM}		10	V
T_{VJ}		-40...+130	°C
T_{VJM}		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	Typical including screws	24	g

Features

- Isolation voltage 3600 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

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
- High power density
- Small and light weight

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

IXYS reserves the right to change limits, test conditions and dimensions.

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Symbol	Conditions	Characteristic Values	
		typ.	max.
I_D, I_R	$V_R / V_D = V_{RRM} / V_{DRM}$ $T_{VJ} = 125^\circ\text{C}$		10 mA
V_T	$I_T = 200\text{ A}$ $T_{VJ} = 25^\circ\text{C}$		1.1 V
V_{T0}	For power-loss calculations only		0.75 V
r_t			1.23 mΩ
V_{GT}	$V_D = 6\text{ V}$ $T_{VJ} = 25^\circ\text{C}$		1.5 V
I_{GT}	$V_D = 6\text{ V}$ $T_{VJ} = -40^\circ\text{C}$		1.6 V
		$T_{VJ} = 25^\circ\text{C}$	300 mA
	$T_{VJ} = -40^\circ\text{C}$		400 mA
V_{GD}	$V_D = \frac{2}{3} V_{DRM}$ $T_{VJ} = 125^\circ\text{C}$		0.2 V
I_{GD}			10 mA
I_L	$t_p = 10\ \mu\text{s}$; $I_G = 0.5\text{ A}$; $di_G/dt = 0.5\text{ A}/\mu\text{s}$ $T_{VJ} = 25^\circ\text{C}$		450 mA
I_H	$V_D = 6\text{ V}$; $R_{GK} = \infty$; $T_{VJ} = 25^\circ\text{C}$		200 mA
t_{gd}	$V_D = \frac{1}{2} V_{DRM}$; $I_G = 0.5\text{ A}$; $di_G/dt = 0.5\text{ A}/\mu\text{s}$ $T_{VJ} = 25^\circ\text{C}$		2 μs
R_{thJC}	per thyristor; DC current	0.23	0.17 K/W
R_{thJH}			K/W
d_s	Creeping distance on surface		11.2 mm
d_A	Creepage distance in air		5.0 mm
a	Maximum allowable acceleration		50 m/s ²

Dimensions in mm (1 mm = 0.0394")

