

# Thyristor Modules

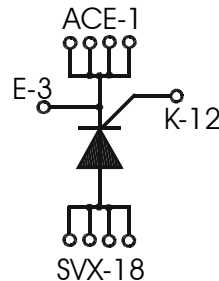
## ECO-PAC 2

$$I_{TRMS} = 200 \text{ A}$$

$$I_{TAVM} = 130 \text{ A}$$

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

$V_{RSM}$	$V_{RRM}$	Typ
$V_{DSM}$ V	$V_{DRM}$ V	
1300	1200	VCO 132-12io7
1700	1600	VCO 132-16io7



Symbol	Conditions	Maximum Ratings	
$I_{TRMS}$		200	A
$I_{TAVM}$	$T_C = 85^\circ\text{C}; T_{VJ} = 130^\circ\text{C}; 180^\circ \text{ sine}$	130	A
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms (50 Hz)}$	3600	A
	$V_R = 0; t = 8.3 \text{ ms (60 Hz)}$	3850	A
	$T_{VJ} = 125^\circ\text{C}; t = 10 \text{ ms (50 Hz)}$	3200	A
	$V_R = 0; t = 8.3 \text{ ms (60 Hz)}$	3420	A
$I^2t$	$T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms (50 Hz)}$	64 800	A <sup>2</sup> s
	$V_R = 0; t = 8.3 \text{ ms (60 Hz)}$	62 300	A <sup>2</sup> s
	$T_{VJ} = 125^\circ\text{C}; t = 10 \text{ ms (50 Hz)}$	51 200	A <sup>2</sup> s
	$V_R = 0; t = 8.3 \text{ ms (60 Hz)}$	49 100	A <sup>2</sup> 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/ $\mu\text{s}$
	$V_D = \frac{2}{3} V_{DRM};$ non repetitive, $I_T = I_{TAVM}$ $I_G = 0.5 \text{ A};$ $di_G/dt = 0.5 \text{ A}/\mu\text{s}$	500	A/ $\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3} V_{DRM};$ $R_{GK} = \infty;$ method 1 (linear voltage rise)	1000	V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = 125^\circ\text{C};$ $t_p = 30 \text{ ms}$	$\leq 10$	W
	$I_T = I_{T(AV)M};$ $t_p = 300 \text{ ms}$	$\leq 5$	W
$P_{GAVM}$		0.5	W
$V_{RGM}$		10	V
$T_{VJ}$		-40...+130	$^\circ\text{C}$
$T_{VJM}$		150	$^\circ\text{C}$
$T_{stg}$		-40...+125	$^\circ\text{C}$
$V_{ISOL}$	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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1 - 2

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
$V_T$	$I_T = 200\text{ A}$ $T_{VJ} = 25^\circ\text{C}$		1.3 V
$V_{T0}$	For power-loss calculations only		0.80 V
$r_t$			1.65 m $\Omega$
$V_{GT}$	$V_D = 6\text{ V}$ $T_{VJ} = 25^\circ\text{C}$		1.5 V
$I_{GT}$	$V_D = 6\text{ V}$ $T_{VJ} = -40^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$		1.6 V 300 mA 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 $\mu\text{s}$
$R_{thJC}$	per thyristor; DC current		0.25 K/W
$R_{thJH}$		0.35	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 <sup>2</sup>

Dimensions in mm (1 mm = 0.0394")

