

# Thyristor Modules

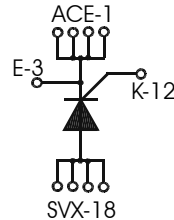
## ECO-PAC 2

$$I_{TRMS} = 280A$$

$$I_{TAVM} = 180A$$

$$V_{RRM} = 800-1800 V$$

$V_{RSM}$	$V_{RRM}$	Typ
$V_{DSM}$ V	$V_{DRM}$ V	
900	800	VCO 180 - 08io7
1300	1200	VCO 180 - 12io7
1500	1400	VCO 180 - 14io7
1700	1600	VCO 180 - 16io7
1900	1800	VCO 180 - 18io7



Symbol	Conditions	Maximum Ratings	
$I_{TRMS}$		280	A
$I_{TAVM}$	$T_C = 90^\circ C; T_{VJ} = 130^\circ C; 180^\circ$ sine	180	A
$I_{TSM}$	$T_{VJ} = 45^\circ C; V_R = 0 V;$ $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	4500	A
		4900	A
$I^2dt$	$T_{VJ} = 125^\circ C; V_R = 0 V;$ $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	3800	A
		4200	A
$I^2dt$	$T_{VJ} = 45^\circ C; V_R = 0 V;$ $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	101000	A <sup>2</sup> s
		99500	A <sup>2</sup> s
$I^2dt$	$T_{VJ} = 125^\circ C; V_R = 0 V;$ $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	72000	A <sup>2</sup> s
		73000	A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ C;$ $f = 50 Hz; t_p = 200 \mu s;$ $V_D = \frac{2}{3}V_{DRM};$ $I_G = 0.5 A$ $di_G/dt = 0.5 A/\mu s;$	repetitive, $I_T = 250 A$	150 A/ $\mu s$
		non repetitive, $I_T = I_{TAVM}$	500 A/ $\mu s$
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ C; V_{DR} = \frac{2}{3}V_{DRM}$ $R_{GK} = \infty,$ method 1 (linear voltage rise)	1000	V/ $\mu s$
$P_{GM}$	$T_{VJ} = 125^\circ C;$ $I_T = I_{TAVM};$	$t_p = 30 ms$	$\leq 10$ W
		$t_p = 300 ms$	$\leq 5$ W
$P_{GAVM}$		0.5	W
$V_{RGM}$		10	V
$T_{VJ}$		-40 ... +130	$^\circ C$
$T_{VJM}$	for 10 sec	150	$^\circ C$
$T_{stg}$		-40 ... +125	$^\circ C$
$V_{ISOL}$	50/60 Hz, RMS $I_{ISOL} \leq 1 mA$	$t = 1 min$	3000 V ~
		$t = 1 s$	3600 V ~
$M_d$	Mounting torque (M4)	1.5 - 2.0	Nm
		14 - 18	lb.in.
Weight	typ.	24	g

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

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

### 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

**Component**

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$I_D, I_R$	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$			10 mA
$V_T$	$I_T = 200 \text{ A}; T_{VJ} = 25^\circ\text{C}$			1.1 V
$V_{TO}$	For power-loss calculations only			0.75 V
$r_T$				1.23 m $\Omega$
$V_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$			1.5 V 1.6 V
$I_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$			300 mA 400 mA
$V_{GD}$	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3} V_{DRM}$			0.2 V
$I_{GD}$	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3} V_{DRM}$			10 mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_P = 10 \mu\text{s}$ $I_G = 0.5 \text{ A}; di_G/dt = 0.5 \text{ A}/\mu\text{s}$			450 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$			200 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.5 \text{ A}; di_G/dt = 0.5 \text{ A}/\mu\text{s}$			2 $\mu\text{s}$
$R_{thJC}$	per Thyristor; DC			0.17 KW
$R_{thJH}$	per Thyristor; DC; typ.	0,23		KW
$d_s$	Creeping distance on surface			11.2 mm
$d_A$	Creeping distance in air			5.0 mm
$a$	Max. allowable acceleration			50 m/s <sup>2</sup>

**Dimensions in mm (1 mm = 0.0394")**
