

# Thyristor Modules

## ECO-PAC 2

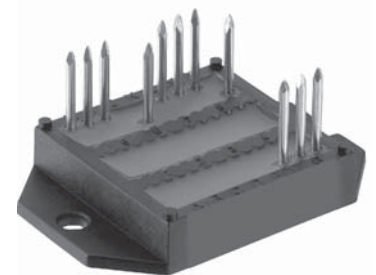
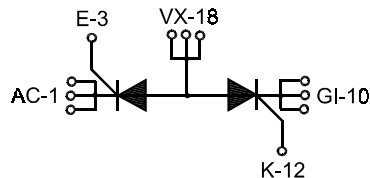
$$I_{TRMS} = 2 \times 180A$$

$$I_{TAVM} = 2 \times 105A$$

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

### Preliminary Data

$V_{RSM}$ $V_{DSM}$ $V$	$V_{RRM}$ $V_{DRM}$ $V$	Typ
900	800	VCA 105 - 08io7
1300	1200	VCA 105 - 12io7
1500	1400	VCA 105 - 14io7
1700	1600	VCA 105 - 16io7
1900	1800	VCA 105 - 18io7



Symbol	Conditions	Maximum Ratings	
$I_{TRMS}$		180	A
$I_{TAVM}$	$T_C = 85^\circ C$ ; 180° sine	105	A
$I_{TSM}$	$T_{VJ} = 45^\circ C$ ; $V_R = 0V$ ; t = 10 ms (50 Hz), sine	2250	A
	t = 8.3 ms (60 Hz), sine	2400	A
$I^2dt$	$T_{VJ} = 125^\circ C$ ; $V_R = 0V$ ; t = 10 ms (50 Hz), sine	2000	A
	t = 8.3 ms (60 Hz), sine	2150	A
$I^2dt$	$T_{VJ} = 45^\circ C$ ; $V_R = 0V$ ; t = 10 ms (50 Hz), sine	25300	A <sup>2</sup> s
	t = 8.3 ms (60 Hz), sine	23900	A <sup>2</sup> s
$I^2dt$	$T_{VJ} = 125^\circ C$ ; $V_R = 0V$ ; t = 10 ms (50 Hz), sine	20000	A <sup>2</sup> s
	t = 8.3 ms (60 Hz), sine	19100	A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ; f = 50 Hz; $t_p = 200 \mu s$ ; $V_D = \frac{2}{3}V_{DRM}$ ; $I_G = 0.45A$ ; $di_G/dt = 0.45A/\mu s$ ; repetitive, $I_T = 250A$	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/ $\mu s$
$P_{GM}$	$T_{VJ} = 125^\circ C$ ; $I_T = I_{TAVM}$ ; $t_p = 30ms$	$\leq 10$	W
	$t_p = 300ms$	$\leq 5$	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; $I_{ISOL} \leq 1mA$ ; 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.	26	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 refer to a single thyristor unless otherwise stated

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

Component		Characteristic Values		
Symbol	Conditions	min.	typ.	max.
		$I_D, I_R$	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$	
$V_T$	$I_T = 300 \text{ A}; T_{VJ} = 25^\circ\text{C}$			1.5 V
$V_{TO}$	For power-loss calculations only			0.8 V
$r_T$				2.4 mΩ
$V_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$			1.5 V 1.6 V
$I_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$			150 mA 200 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
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \text{ ms}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$			450 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$			200 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2}V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$			2 μs
$R_{thJC}$	per Thyristor; DC per module			0.26 K/W 0.13 K/W
$R_{thCH}$	per Thyristor; DC per module		0,2 0,1	K/W 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 <sup>2</sup>

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