

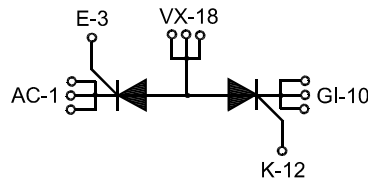
# Thyristor Modules

ECO-PAC 2

$I_{TRMS} = 2 \times 180A$   
 $I_{TAVM} = 2 \times 105A$   
 $V_{RRM} = 800-1800 V$

## 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	Features	
$I_{TRMS}$		180 A	<ul style="list-style-type: none"> <li>• Isolation voltage 3600 V~</li> <li>• Planar glass passivated chips</li> <li>• Low forward voltage drop</li> <li>• Leads suitable for PC board soldering</li> </ul>	
$I_{TAVM}$	$T_C = 85^\circ C$ ; 180° sine	105 A		
$I_{TSM}$	$T_{VJ} = 45^\circ C$ ; $V_R = 0 V$ ;	t = 10 ms (50 Hz), sine		2250 A
		t = 8.3 ms (60 Hz), sine		2400 A
$I^2dt$	$T_{VJ} = 45^\circ C$ ; $V_R = 0 V$ ;	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
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ;	repetitive, $I_T = 250 A$		2000 A
				f = 50 Hz; $t_p = 200 \mu s$ ;
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ; $V_{DR} = 2/3 V_{DRM}$	non repetitive, $I_T = I_{TAVM}$		20000 A <sup>2</sup> s
				$R_{GK} = \infty$ , method 1 (linear voltage rise)
$P_{GM}$	$T_{VJ} = 125^\circ C$ ;	$t_p = 30 ms$	≤ 10 W	
		$I_T = I_{TAVM}$ ;	$t_p = 300 ms$	≤ 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	t = 1 min	3000 V ~	
		$I_{ISOL} \leq 1 mA$	t = 1 s	3600 V ~
$M_d$	Mounting torque	(M4)	1.5 - 2.0 Nm	
			14 - 18 lb.in.	
<b>Weight</b>	typ.		26 g	

**PRELIMINARY**

### 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>

