

# Thyristor Modules

## ECO-PAC 2

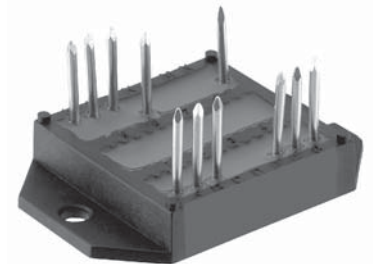
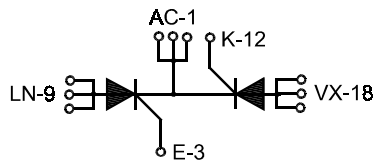
$$I_{TRMS} = 2 \times 180A$$

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

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

### Preliminary Data

$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V	Typ
900	800	VCK 105 - 08io7
1300	1200	VCK 105 - 12io7
1500	1400	VCK 105 - 14io7
1700	1600	VCK 105 - 16io7
1900	1800	VCK 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	<b>Applications</b> <ul style="list-style-type: none"> <li>DC motor control</li> <li>Light and temperature control</li> <li>Softstart AC motor controller</li> <li>Solid state switches</li> </ul>
	$t = 8.3 ms$ (60 Hz), sine	2400 A	
$I^2dt$	$T_{VJ} = 125^\circ C$ ; $V_R = 0 V$ ; $t = 10 ms$ (50 Hz), sine	2000 A	<b>Advantages</b> <ul style="list-style-type: none"> <li>Easy to mount with two screws</li> <li>Space and weight savings</li> <li>Improved temperature and power cycling</li> <li>High power density</li> <li>Small and light weight</li> </ul>
	$t = 8.3 ms$ (60 Hz), sine	2150 A	
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ; $f = 50 Hz$ ; $t_p = 200 \mu s$ ; $V_D = 2/3 V_{DRM}$ ; $I_G = 0.45 A$ ; $di_G/dt = 0.45 A/\mu s$ ;	repetitive, $I_T = 250 A$	150 A/ $\mu s$
		non repetitive, $I_T = I_{TAVM}$	500 A/ $\mu s$
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ; $V_{DR} = 2/3 V_{DRM}$ ; $R_{GK} = \infty$ , 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 ... + 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

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.
$I_D, I_R$	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$			5 mA
$V_T$	$I_T = 300\text{ A}; T_{VJ} = 25^\circ\text{C}$			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>

