

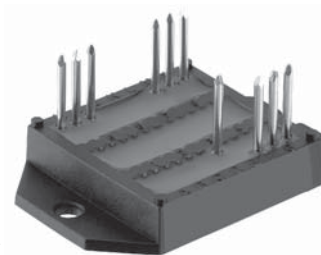
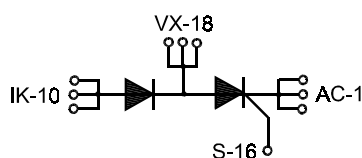
Thyristor/Diode Modules

ECO-PAC

$$\begin{aligned} I_{TRMS} &= 2 \times 180 \text{ A} \\ I_{TAVM} &= 2 \times 105 \text{ A} \\ V_{RRM} &= 800 - 1800 \text{ V} \end{aligned}$$

Preliminary Data

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



Symbol	Conditions	Maximum Ratings	
I_{TRMS}		180	A
I_{TAVM}	$T_C = 85^\circ\text{C}$; 180° sine	105	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine $t = 8.3 \text{ ms}$ (60 Hz), sine	2250	A
		2400	A
	$T_{VJ} = 125^\circ\text{C}$; $V_R = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine $t = 8.3 \text{ ms}$ (60 Hz), sine	2000	A
		2150	A
I^2dt	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine $t = 8.3 \text{ ms}$ (60 Hz), sine	25300	A ² s
		23900	A ² s
	$T_{VJ} = 125^\circ\text{C}$; $V_R = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine $t = 8.3 \text{ ms}$ (60 Hz), sine	20000	A ² s
		19100	A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; $f = 50 \text{ Hz}$; $t_p = 200 \mu\text{s}$; $V_D = \frac{2}{3} V_{DRM}$; $I_G = 0.45 \text{ A}$; $di_G/dt = 0.45 \text{ A}/\mu\text{s}$;	repetitive, $I_T \leq 250 \text{ A}$	150 A/ μs
		non repetitive, $I_T = I_{TAVM}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; $V_{DR} = \frac{2}{3} V_{DRM}$; $R_{GK} = \infty$, method 1 (linear voltage rise)	1000	V/ μs
P_{GM}	$T_{VJ} = 125^\circ\text{C}$; $I_T = I_{TAVM}$;	$t_p = 30 \text{ ms}$	$\leq 10 \text{ W}$
		$t_p = 300 \text{ ms}$	$\leq 5 \text{ W}$
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 $I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ min}$	3000 V ~
		$t = 1 \text{ s}$	3600 V ~
M_d	Mounting torque (M4)	1.5 - 2.0	Nm
		14 - 18	lb.in.
Weight	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.

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	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$			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 ²

Dimensions in mm (1 mm = 0.0394")

