

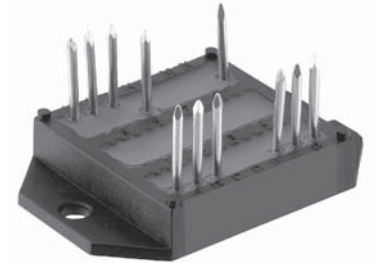
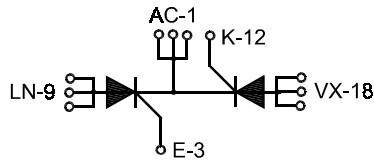
Thyristor Modules

ECO-PAC 2

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

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
I_{TRMS}		180 A
I_{TAVM}	$T_{\text{C}} = 85^{\circ}\text{C}$; 180° sine	105 A
I_{TSM}	$T_{\text{VJ}} = 45^{\circ}\text{C}$; $V_{\text{R}} = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine	2250 A
	$t = 8.3 \text{ ms}$ (60 Hz), sine	2400 A
	$T_{\text{VJ}} = 125^{\circ}\text{C}$; $V_{\text{R}} = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine	2000 A
	$t = 8.3 \text{ ms}$ (60 Hz), sine	2150 A
$I^2\text{dt}$	$T_{\text{VJ}} = 45^{\circ}\text{C}$; $V_{\text{R}} = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine	25300 A^2s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	23900 A^2s
	$T_{\text{VJ}} = 125^{\circ}\text{C}$; $V_{\text{R}} = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine	20000 A^2s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	19100 A^2s
$(di/dt)_{\text{cr}}$	$T_{\text{VJ}} = 125^{\circ}\text{C}$; $f = 50 \text{ Hz}$; $t_{\text{p}} = 200 \mu\text{s}$; $V_{\text{D}} = 2/3 V_{\text{DRM}}$; $I_{\text{G}} = 0.45 \text{ A}$; $di_{\text{G}}/dt = 0.45 \text{ A}/\mu\text{s}$;	repetitive, $I_{\text{T}} = 250 \text{ A}$ 150 $\text{A}/\mu\text{s}$
		non repetitive, $I_{\text{T}} = I_{\text{TAVM}}$ 500 $\text{A}/\mu\text{s}$
$(dv/dt)_{\text{cr}}$	$T_{\text{VJ}} = 125^{\circ}\text{C}$; $V_{\text{DR}} = 2/3 V_{\text{DRM}}$; $R_{\text{GK}} = \infty$, method 1 (linear voltage rise)	1000 $\text{V}/\mu\text{s}$
P_{GM}	$T_{\text{VJ}} = 125^{\circ}\text{C}$; $t_{\text{p}} = 30 \text{ ms}$	$\leq 10 \text{ W}$
	$I_{\text{T}} = I_{\text{TAVM}}$; $t_{\text{p}} = 300 \text{ ms}$	$\leq 5 \text{ W}$
P_{GAVM}		0.5 W
V_{RGM}		10 V
T_{VJ}		-40 ... + 125 $^{\circ}\text{C}$
T_{VJM}		125 $^{\circ}\text{C}$
T_{stg}		-40 ... + 125 $^{\circ}\text{C}$
V_{ISOL}	50/60 Hz, RMS	$t = 1 \text{ min}$ 3000 V ~
	$I_{\text{ISOL}} \leq 1 \text{ mA}$	$t = 1 \text{ s}$ 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 K/W 0,1 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")

