

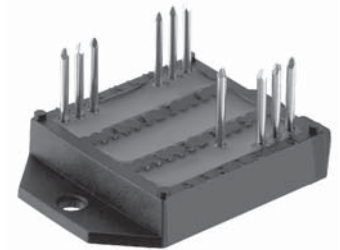
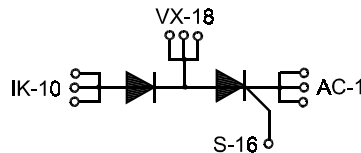
Thyristor/Diode Modules

ECO-PAC

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

Preliminary Data

| V_{RSM} V_{DSM} V | V_{RRM} V_{DRM} V | Typ |
|-----------------------------|-----------------------------|-----------------|
| 900 | 800 | 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} | $T_C = 85^\circ C$; 180° sine | 105 | A | |
| I_{TSM} | $T_{VJ} = 45^\circ C$; $V_R = 0 V$; $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine | 2250 | A | |
| | | 2400 | A | |
| I^2dt | $T_{VJ} = 45^\circ C$; $V_R = 0 V$; $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine | 25300 | A ² s | |
| | | 23900 | A ² s | |
| $(di/dt)_{cr}$ | $T_{VJ} = 125^\circ C$; $f = 50 Hz$; $t_p = 200 \mu s$; $V_D = \frac{2}{3} V_{DRM}$; $I_G = 0.45 A$ $di_G/dt = 0.45 A/\mu s$; | repetitive, $I_T = 250 A$ | 150 | A/ μs |
| | | non repetitive, $I_T = I_{TAVM}$ | 500 | A/ μs |
| $(dv/dt)_{cr}$ | $T_{VJ} = 125^\circ C$; $V_{DR} = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise) | | 1000 | V/ μs |
| P_{GM} | $T_{VJ} = 125^\circ C$; $I_T = I_{TAVM}$; | $t_p = 30 ms$ | ≤ 10 | W |
| | | $t_p = 300 ms$ | ≤ 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 $I_{ISOL} \leq 1 mA$ | $t = 1 min$ | 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 | $T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$ | | | 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 |

