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VCK 105

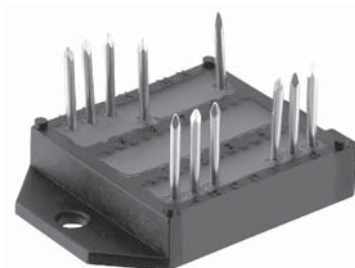
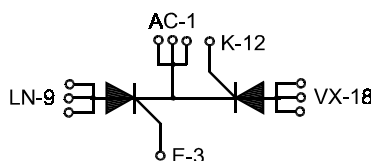
Thyristor Modules

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		
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	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 ² s	
	t = 8.3 ms (60 Hz), sine	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	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.
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				
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

