Thyristor/Diode Modules

ECO-PAC

I$_{TRMS}$ = 2x180A
I$_{TAVM}$ = 2x105A
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

VX-18
IK-10
AC-1
S-16
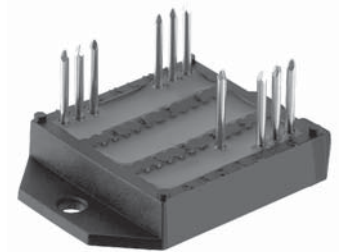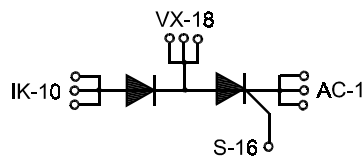
Symbol	Conditions		Maximum Ratings	
I$_{TRMS}$			180	A
I$_{TAVM}$	T$_C$ = 85°C; 180° sine		105	A
I$_{TSM}$	T$_{VJ}$ = 45°C; V$_R$ = 0 V;	t = 10 ms (50 Hz), sine	2250	A
		t = 8.3 ms (60 Hz), sine	2400	A
	T$_{VJ}$ = 125°C; V$_R$ = 0 V;	t = 10 ms (50 Hz), sine	2000	A
		t = 8.3 ms (60 Hz), sine	2150	A
I²dt	T$_{VJ}$ = 45°C; V$_R$ = 0 V;	t = 10 ms (50 Hz), sine	25300	A²s
		t = 8.3 ms (60 Hz), sine	23900	A²s
	T$_{VJ}$ = 125°C; V$_R$ = 0 V;	t = 10 ms (50 Hz), sine	20000	A²s
		t = 8.3 ms (60 Hz), sine	19100	A²s
(di/dt)$_{cr}$	T$_{VJ}$ = 125°C; f = 50 Hz; t$_P$ = 200 µs; V$_D$ = ²/₃V$_{DRM}$; I$_G$ = 0.45 A di$_G$/dt = 0.45 A/µs;	repetitive, I$_T$ = 250 A	150	A/µs
		non repetitive, I$_T$ = I$_{TAVM}$	500	A/µs
(dv/dt)$_{cr}$	T$_{VJ}$ = 125°C; V$_{DR}$ = ²/₃V$_{DRM}$ R$_{GK}$ = ∞, method 1 (linear voltage rise)		1000	V/µs
P$_{GM}$	T$_{VJ}$ = 125°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$_{ISOL}$ ≤ 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

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

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Component

Symbol	Conditions	min.	typ.	max.	
I_D, I_R	$T_{VJ} = 125°C$; $V_R = V_{RRM}$; $V_D = V_{DRM}$			5	mA
V_T	$I_T = 300$ A; $T_{VJ} = 25°C$			1.5	V
V_{TO}	For power-loss calculations only			0.8	V
r_T				2.4	mΩ
V_{GT}	$V_D = 6$ V; $\quad T_{VJ} = 25°C$			1.5	V
	$\quad\quad\quad\quad\quad T_{VJ} = -40°C$			1.6	V
I_{GT}	$V_D = 6$ V; $\quad T_{VJ} = 25°C$			150	mA
	$\quad\quad\quad\quad\quad T_{VJ} = -40°C$			200	mA
V_{GD}	$T_{VJ} = 125°C$; $\quad V_D = {}^2/_3 V_{DRM}$			0.2	V
I_{GD}	$T_{VJ} = 125°C$; $\quad V_D = {}^2/_3 V_{DRM}$			10	mA
I_L	$T_{VJ} = 25°C$; $t_P = 10$ ms			450	mA
	$I_G = 0.45$ A; $di_G/dt = 0.45$ A/μs				
I_H	$T_{VJ} = 25°C$; $V_D = 6$ V; $R_{GK} = ∞$			200	mA
t_{gd}	$T_{VJ} = 25°C$; $V_D = ½ V_{DRM}$			2	μs
	$I_G = 0.45$ A; $di_G/dt = 0.45$ A/μs				
R_{thJC}	per Thyristor; DC			0.26	K/W
	per module			0.13	K/W
R_{thCH}	per Thyristor; DC		0,2		K/W
	per module		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/s²

Dimensions in mm (1 mm = 0.0394")