

# XI'AN IR-PERI



Company

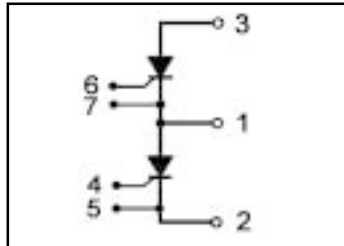
PRELIMINARY

MTC40TA120/180

Thyristor Modules Add -A -PAK

## Features

- International standard package  
With DBC ceramic base plate
- Planar passivated chips
- High surge capability
- UL recognition pending



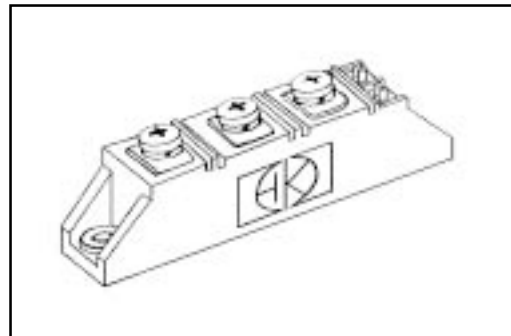
**VRRM = 1200V- 1800V**  
**IFAVM = 2x40A**  
**IFRMS = 2x70A**

## Benefits

- DC motor control
- Simple AC motor controller
- Light, heat and temperature control

## Voltage Ratings

Voltage Code	VRRM(V)	VRSM(V)	IRRM T <sub>J</sub> =25 °C(mA)
	VDRM(V)	VDSM(V)	IDRM T <sub>J</sub> =25 °C(mA)
120	1200	1300	1.0
140	1400	1500	1.0
160	1600	1700	1.0
180	1800	1900	1.0



## Absolute Maximum Ratings

Symbol	Test Conditions	Max.	Units	
IFRMS	T <sub>VJM</sub> =125 °C	70	A	
IFAVM	T <sub>c</sub> =83 °C; 180° sine	43	A	
	T <sub>c</sub> =85 °C; 180° sine	40	A	
IFSM	T <sub>VJ</sub> =45 °C; t=10ms (50 Hz),sine	1050	A	
	V <sub>R</sub> =0 t=8.3ms (60 Hz),sine	1100	A	
	T <sub>VJ</sub> =125 °C; t=10ms (50 Hz),sine	900	A	
	V <sub>R</sub> =0 t=8.3ms (60 Hz),sine	970	A	
I <sup>2</sup> t	T <sub>VJ</sub> =45 °C; t=10ms (50 Hz),sine	5600	A <sup>2</sup> s	
	V <sub>R</sub> =0 t=8.3ms (60 Hz),sine	5280	A <sup>2</sup> s	
	T <sub>VJ</sub> =125 °C; t=10ms (50 Hz),sine	4000	A <sup>2</sup> s	
	V <sub>R</sub> =0 t=8.3ms (60 Hz),sine	3750	A <sup>2</sup> s	
di/dt	f=50Hz, t <sub>p</sub> =200μs, V <sub>D</sub> =2/3V <sub>DRM</sub> I <sub>G</sub> =0.45A, di <sub>G</sub> /dt=0.45A/μs, T <sub>VJ</sub> =T <sub>VJM</sub>	repetitive, I <sub>T</sub> =150A	150	A/μs
		non repetitive, I <sub>T</sub> =55A	500	A/μs
dv/dt	T <sub>VJ</sub> =T <sub>VJM</sub> ; V <sub>D</sub> =2/3V <sub>DRM</sub> (linear voltage rise)	1000	V/μs	
V <sub>ISOL</sub>	RMS Isolation Voltage, Any Terminal To Case, t=1 min	2500	V	
T <sub>VJ</sub>		-40 to +125	°C	
T <sub>VJM</sub>		125		
T <sub>STG</sub>		-40 to +125		

**Thermal / Mechanical Characteristics**

	Parameter	Typ.	Max.	Units
R $\theta$ JS	Thermal Resistance, Junction-to- Sink DC	-	0.75	
R $\theta$ JC	Thermal Resistance, Junction-to- Case DC	-	0.55	°C/W
	Mouting Torque, Case-to-Heatsink	-	4.0	N.m
	Mouting Torque, Case-to-Terminal 1,2 & 3	-	3.0	
	Weight of Module	100	-	g

**Electrical Characteristics (unless otherwise specified)**

	Test Conditions	Min.	Typ.	Max.	Units
I <sub>RRM</sub> , I <sub>DRM</sub>	T <sub>VJ</sub> =T <sub>VJM</sub> ; V <sub>R</sub> =V <sub>RRM</sub> ; V <sub>D</sub> =V <sub>DRM</sub>	-	-	5	mA
V <sub>T</sub>	I <sub>T</sub> =200A; T <sub>VJ</sub> =25 °C	-	-	1.65	V
V <sub>TO</sub>	For power-loss calculations only (T <sub>VJ</sub> =125 °C)	-	-	0.85	V
r <sub>T</sub>		-	-	5.3	mΩ
V <sub>GT</sub>	V <sub>D</sub> =6V; T <sub>VJ</sub> =25 °C	-	-	1.5	V
I <sub>GT</sub>	V <sub>D</sub> =6V; T <sub>VJ</sub> =25 °C	-	-	100	mA
V <sub>GD</sub>	T <sub>VJ</sub> =T <sub>VJM</sub> ; V <sub>D</sub> =2/3V <sub>DRM</sub>	-	-	0.2	V
I <sub>GD</sub>		-	-	10	mA
I <sub>L</sub>	T <sub>VJ</sub> =25 °C; t <sub>p</sub> =10μs; V <sub>D</sub> =6V; I <sub>G</sub> =0.45A; di <sub>G</sub> /dt=0.45A/μs	-	-	450	mA
I <sub>H</sub>	T <sub>VJ</sub> =25 °C; V <sub>D</sub> =6V	-	-	200	mA
t <sub>gd</sub>	T <sub>VJ</sub> =25 °C; V <sub>D</sub> =1/2V <sub>DRM</sub> ; I <sub>G</sub> =0.45A; di <sub>G</sub> /dt=0.45A/μs	-	-	2	μs
t <sub>q</sub>	T <sub>VJ</sub> =T <sub>VJM</sub> ; I <sub>T</sub> =120A, t <sub>p</sub> =200 μs; -di/dt=10A/ μs V <sub>R</sub> =100V; dv/dt=20V/ μs; V <sub>D</sub> =2/3V <sub>DRM</sub>	-	150	-	μs
Q <sub>S</sub>	T <sub>VJ</sub> =125 °C; I <sub>T</sub> =50A, -di/dt=0.64A/ μs	-	-	80	μC
I <sub>RM</sub>		-	-	9	A

**Case Outline - a-a-pak**

