

# XI'AN IR-PERI



## Company

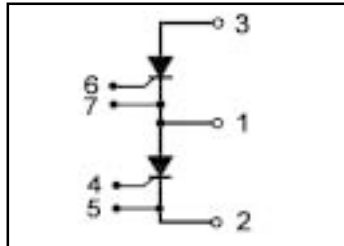
PRELIMINARY

# MTC300TG060/240

Thyristor Modules MAGN -A -PAK

### Features

- International standard package  
With ALN ceramic base plate
- Electrically isolated base plate
- High surge capability



**V<sub>RRM</sub> = 600V~2400V**  
**I<sub>FAVM</sub> = 2x310A**  
**I<sub>FRMS</sub> = 2x500A**

### Benefits

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

### Voltage Ratings

Voltage Code	060	080	120	140	160	180	200	240
<b>V<sub>RRM</sub>(V)</b> <b>V<sub>DRM</sub>(V)</b>	600	800	1200	1400	1600	1800	2000	2400
<b>V<sub>RSM</sub>(V)</b> <b>V<sub>DSM</sub>(V)</b>	720	960	1300	1500	1700	1900	2100	2500

### Absolute Maximum Ratings

Symbol	Test Conditions	Max.	Units	
I <sub>FRMS</sub>	T <sub>VJM</sub> =125 °C	500	A	
I <sub>FAVM</sub>	T <sub>C</sub> =83 °C; 180° sine	320	A	
	T <sub>C</sub> =85 °C; 180° sine	300	A	
I <sub>FSM</sub>	T <sub>VJ</sub> =45 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	9200	A	
	T <sub>VJ</sub> =125 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	9800	A	
	T <sub>VJ</sub> =45 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	8000	A	
	T <sub>VJ</sub> =125 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	8600	A	
I <sup>2</sup> t	T <sub>VJ</sub> =45 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	420000	A <sup>2</sup> s	
	T <sub>VJ</sub> =125 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	400000	A <sup>2</sup> s	
	T <sub>VJ</sub> =45 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	320000	A <sup>2</sup> s	
	T <sub>VJ</sub> =125 °C; t=10ms (50 Hz), sine V <sub>R</sub> =0 t=8.3ms (60 Hz), sine	306000	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> =1.0A, di <sub>G</sub> /dt=1.0A/μs, T <sub>VJ</sub> =T <sub>VJM</sub>	repetitive, I <sub>T</sub> =960A	100	A/μs
		non repetitive, I <sub>T</sub> =320A	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 <sub>θJS</sub>	Thermal Resistance, Junction-to- Sink DC	-	0.15	°C/W
R <sub>θJC</sub>	Thermal Resistance, Junction-to- Case DC	-	0.10	°C/W
	Mouting Torque, Case-to-Heatsink	-	4.0	N.m
	Mouting Torque, Case-to-Terminal 1,2 & 3	-	8-11	N.m
	Weight of Module	870	-	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>	-	-	50	mA
V <sub>T</sub>	I <sub>T</sub> =600A; T <sub>VJ</sub> =25 °C	-	-	1.33	V
V <sub>TO</sub>	For power-loss calculations only(T <sub>VJ</sub> =125 °C)	-	-	0.8	V
r <sub>T</sub>		-	-	0.82	mΩ
V <sub>GT</sub>	V <sub>D</sub> =6V; T <sub>VJ</sub> =25 °C	-	-	2.0	V
I <sub>GT</sub>	V <sub>D</sub> =6V; T <sub>VJ</sub> =25 °C	-	-	150	mA
V <sub>GD</sub>	T <sub>VJ</sub> =T <sub>VJM</sub> ; V <sub>D</sub> =2/3V <sub>DRM</sub>	-	-	0.25	V
I <sub>GD</sub>		-	-	10	mA
I <sub>L</sub>	T <sub>VJ</sub> =25 °C; t <sub>p</sub> =30μs; V <sub>D</sub> =6V; I <sub>G</sub> =0.45A; di <sub>G</sub> /dt=0.45A/μs	-	-	200	mA
I <sub>H</sub>	T <sub>VJ</sub> =25 °C; V <sub>D</sub> =6V	-	-	150	mA
t <sub>gd</sub>	T <sub>VJ</sub> =25 °C; V <sub>D</sub> =1/2V <sub>DRM</sub> ; I <sub>G</sub> =0.5A; di <sub>G</sub> /dt=0.5A/μs	-	-	2	μs
t <sub>q</sub>	T <sub>VJ</sub> =T <sub>VJM</sub> ; I <sub>T</sub> =160A, 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>	-	200	-	μs
Q <sub>S</sub>	T <sub>VJ</sub> =125 °C; I <sub>T</sub> =300A, -di/dt=50A/ μs	-	-	760	μC
I <sub>RM</sub>		-	-	275	A

**Case Outline - TG1**

