

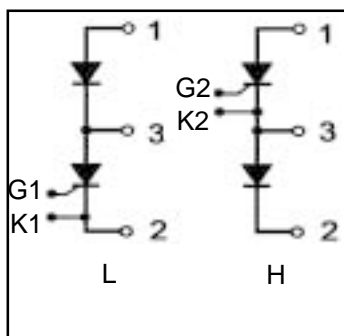
Thyristor Modules MAGN -A -PAK

### Features

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

### Benefits

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



$V_{DRM} = 600-2400V$

$V_{RRM} = 600-2400V$

$I_{T(AV)} = 2 \times 300A$

$I_{FRMS} = 2 \times 500A$

### Voltage Ratings

Voltage Code	060	080	120	140	160	180	200	240
$V_{RRM(V)}$ $V_{DRM(V)}$	600	800	1200	1400	1600	1800	2000	2400
$V_{RSM(V)}$ $V_{DSM(V)}$	720	960	1300	1500	1700	1900	2100	2500

### Absolute Maximum Ratings

Symbol	Test Conditions	Max.	Units	
$I_{FRMS}$	$T_{VJM} = 125^\circ C$	500	A	
$I_{FAVM}$	$T_C = 83^\circ C; 180^\circ$ sine	320	A	
	$T_C = 85^\circ C; 180^\circ$ sine	300	A	
$I_{FSM}$	$T_{VJ} = 45^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	9200	A	
	$T_{VJ} = 125^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	9800	A	
	$T_{VJ} = 45^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	8000	A	
	$T_{VJ} = 125^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	8600	A	
$I^2t$	$T_{VJ} = 45^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	420000	$A^2s$	
	$T_{VJ} = 125^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	400000	$A^2s$	
	$T_{VJ} = 45^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	320000	$A^2s$	
	$T_{VJ} = 125^\circ C; t = 10ms$ (50 Hz), sine $V_R = 0$ $t = 8.3ms$ (60 Hz), sine	306000	$A^2s$	
$di/dt$	$f = 50Hz, t_p = 200\mu s, V_D = 2/3 V_{DRM}$ $I_G = 1.0A, di/dt = 1.0A/\mu s, T_{VJ} = T_{VJM}$	repetitive, $I_T = 960A$	100	$A/\mu s$
		non repetitive, $I_T = 320A$	500	$A/\mu s$
$dv/dt$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$ (linear voltage rise)	1000	$V/\mu s$	
$V_{ISOL}$	RMS Isolation Voltage, Any Terminal To Case, $t = 1$ min	2500	V	
$T_{VJ}$		-40 to +125	°C	
$T_{VJM}$		125		
$T_{STG}$		-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
IRRM, IDRM	T <sub>VJ</sub> =T <sub>VJM</sub> ; V <sub>R</sub> =V <sub>RRM</sub> ; V <sub>D</sub> =V <sub>D</sub> RM	-	-	50	mA
V <sub>T</sub> & V <sub>F</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
Γ <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>D</sub> RM	-	-	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>D</sub> RM; 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>D</sub> RM	-	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

