

**Thyristor DIODE Modules**
**TYPE: MFC(TD)90-1600**
**Features**

- High Voltage
- Industrial Standard Package
- Thick Al metal die and double stick bonding
- Thick copper baseplate
- UL approved
- 3500V<sub>RMS</sub> isolating voltage

**Typical Applications**

- DC motor control
- AC motor soft starters
- Temperature control
- Professional light dimming

**Maximum Ratings**

Symbol	Condition	Ratings	Unit
I <sub>T(AV)</sub> I <sub>F(AV)</sub>	Single phase, half wave, 180° conduction, T <sub>c</sub> = 85 °C	90	A
I <sub>O(RMS)</sub>	Single phase, half wave, 180° conduction,	190	A
I <sub>TSM</sub>	T <sub>j</sub> = T <sub>jmax</sub> ; t=8.3ms	1750	A
I <sup>2</sup> t	T <sub>j</sub> = T <sub>jmax</sub> ; t=8.3ms	150	kA <sup>2</sup> S
V <sub>DRM</sub> V <sub>RRM</sub> V <sub>RSM</sub>	T <sub>j</sub> = T <sub>jmax</sub>	1600 1600 1700	V
di/dt	I <sub>G</sub> = 500mA, t <sub>r</sub> = 1 μs, T <sub>j</sub> = 25 °C	150	A/us
V <sub>INS</sub>	A.C. 1minute	3500	V
T <sub>j</sub>		-40 ~ + 125	°C
T <sub>stg</sub>		-40 ~ + 125	°C
W	About	-	g

**Electrical Characteristics**

Symbol	Condition	Ratings	Unit
I <sub>DRM</sub> / I <sub>RRM</sub>	At V <sub>DRM</sub> , Single phase, half wave; T <sub>j</sub> = T <sub>jmax</sub>	20	mA
V <sub>TM</sub> V <sub>FM</sub>	On-State Current 300A; T <sub>j</sub> = T <sub>jmax</sub>	1.64	V
V <sub>T(TO)</sub>	T <sub>j</sub> = T <sub>jmax</sub>	0.90	V
r <sub>t</sub>	T <sub>j</sub> = T <sub>jmax</sub>	2.0	mΩ
t <sub>gd</sub>	T <sub>j</sub> = 25°C	1	us
t <sub>q</sub>	T <sub>j</sub> = T <sub>jmax</sub>	100	us
I <sub>GT</sub> /V <sub>GT</sub>	T <sub>j</sub> = 25°C	150/2.5	mA/V
V <sub>GD</sub>	V <sub>D</sub> = 67% V <sub>DRM</sub> ; T <sub>j</sub> = T <sub>jmax</sub>	0.25	V
DV/DT	V <sub>D</sub> = 67% V <sub>DRM</sub>	1000	V/us
I <sub>H</sub>	T <sub>j</sub> = 25°C	250	mA

$I_L$	$T_j=25^{\circ}C$	400	mA
T	Mounting torque case-heatsink; $\pm 10\%$	5	N.m
	Mounting torque busbar-terminals; $\pm 10\%$	3	
$R_{th(j-c)}$	Per Module	0.28	K/W
$R_{th(c-s)}$	Per Module	0.32	K/W

**Outline Drawing**

