

Thyristor Diode Modules

TYPE: MFC116A1600V

Features

- High Voltage
- Industrial Standard Package
- Thick Al metal die and double stick bonding
- Thick copper baseplate
- UL approved
- 3500V_{RMS} isolating voltage

Typical Applications

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

Maximum Ratings

Symbol	Condition	Ratings	Unit
$I_{T(AV)}$ $I_{F(AV)}$	Single phase, half wave, 180° conduction, $T_c = 85^\circ\text{C}$	116	A
$I_{O(RMS)}$	Single phase, half wave, 180° conduction,	255	A
I_{TSM}	$T_j = T_{jmax}$; $t = 8.3\text{ms}$	1785	A
I^2t	$T_j = T_{jmax}$; $t = 8.3\text{ms}$	159	kA^2S
V_{DRM} V_{RRM} V_{RSM}	$T_j = T_{jmax}$	1600 1600 1700	V
di/dt	$I_G = 500\text{mA}$, $t_r = 1\text{ }\mu\text{s}$, $T_j = 25^\circ\text{C}$	150	A/ μs
V_{INS}	A.C. 1 minute	3500	V
T_j		-40 ~ + 130	$^\circ\text{C}$
T_{stg}		-40 ~ + 150	$^\circ\text{C}$
W	About	-	g

Electrical Characteristics

Symbol	Condition	Ratings	Unit
I_{DRM} / I_{RRM}	At V_{DRM} , Single phase, half wave; $T_j = T_{jmax}$	20	mA
V_{TM} V_{FM}	On-State Current 330A; $T_j = T_{jmax}$	1.64	V
$V_{T(TO)}$	$T_j = T_{jmax}$	0.85	V
r_t	$T_j = T_{jmax}$	2.25	$\text{m}\Omega$
t_{gd}	$T_j = 25^\circ\text{C}$	-	μs
t_q	$T_j = T_{jmax}$	-	μs
I_{GT}/V_{GT}	$T_j = 25^\circ\text{C}$	150/2.5	mA/V
V_{GD}	$V_D = 67\%V_{DRM}$; $T_j = T_{jmax}$	0.25	V
DV/DT	$V_D = 67\%V_{DRM}$	1000	V/ μs
I_H	$T_j = 25^\circ\text{C}$	250	mA

I_L	$T_j=25^{\circ}\text{C}$	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	0.135	K/W
$R_{th(c-s)}$	Per Module	0.1	K/W

Outline Drawing

