



GENERAL PURPOSE DIODE MODULE

Features:

- . Electrical insulation between chip and base plate, 2500V AC insulation
- . Compress structure
- . Excellent temperature characteristics and power cycling capability
- . Small size & light weight

Typical application:

- . AC / DC motor control
- . Various rectification power supplies
- . Frequency converter



ELECTRICAL CHARACTERISTICS AND RATINGS

Symbol	Parameter	Conditions	Tj(°C)	Data			Unit
				Min	Typ	Max	
I _{F(AV)}	Mean forward current	Sinewave 180°,50Hz Single side cooling, Tc=85°C	150			300	A
I _{F(RMS)}	RMS forward current		150			471	A
V _{RRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	V _{DRM} &V _{RRM} tp=10ms V _{DSM} &V _{RSM} =V _{DRM} &V _{RRM} +200V	25	800		1800	V
I _{RRM}	Repetitive peak off-state current	V _{DM} = V _{DRM}	150			20	mA
I _{RRM}	Repetitive peak reverse current	V _{RM} = V _{RRM}					
I _{FSM}	Surge forward current	10ms bottom width, half sine wave	150			12.5	KA
I ² t	I squared t	V _R =0.6V _{RRM}				797	A ² s*10 ³
V _{FO}	Forward threshold voltage		150			0.75	V
r _F	Slope resistance					0.55	mΩ
V _{FM}	Peak forward voltage	I _{TM} =900A	25			1.30	V
R _{th(j-c)}	Thermal impedance(junction to case)	180°sine wave, Single side heat dissipation				0.130	°C /W
R _{th(c-h)}	Thermal impedance(case to heatsink)	180°sine wave, Single side heat dissipation				0.04	°C /W
V _{iso}	Insulation voltage	50Hz, R.M.S, t=1min, I _{iso} : 1mA(MAX)		2500			V
F _m	Electrode mounting torque (M6)					12	N·m
	Base plate mounting torque (M6)					6	N·m
T _{stg}	Storage temperature			-40		125	°C
W _t	Weight					870	g

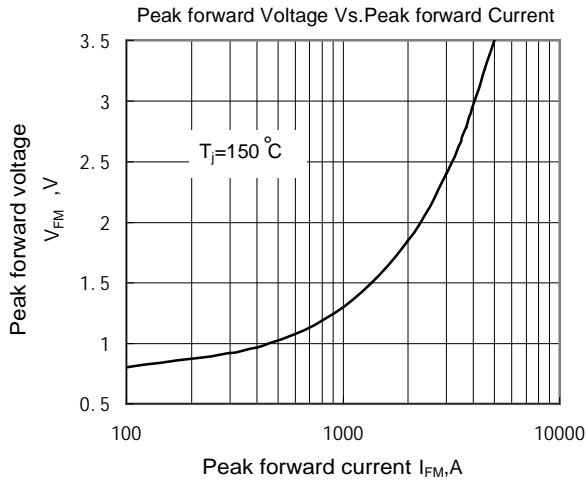


Fig.1 Forward Volt-ampere Characteristic Curve

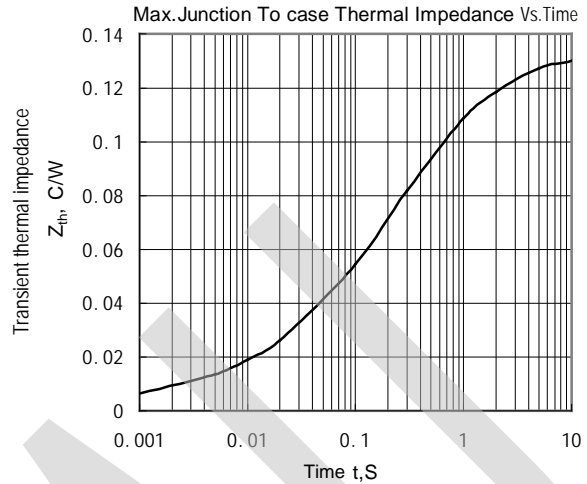


Fig.2 Transient Thermal Impedance Curve

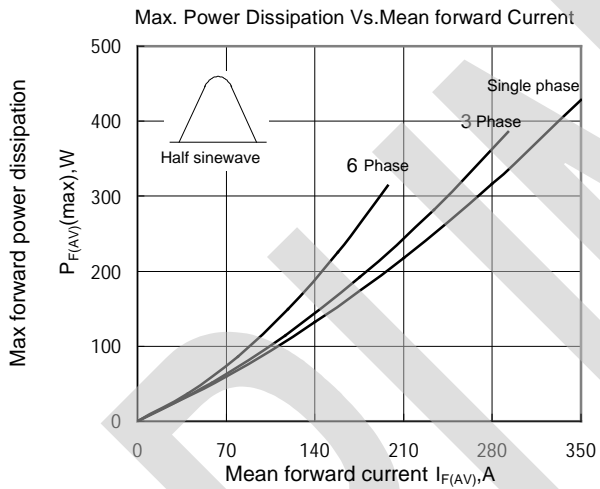


Fig.3 Max Power Dissipation Vs. Mean Forward Current

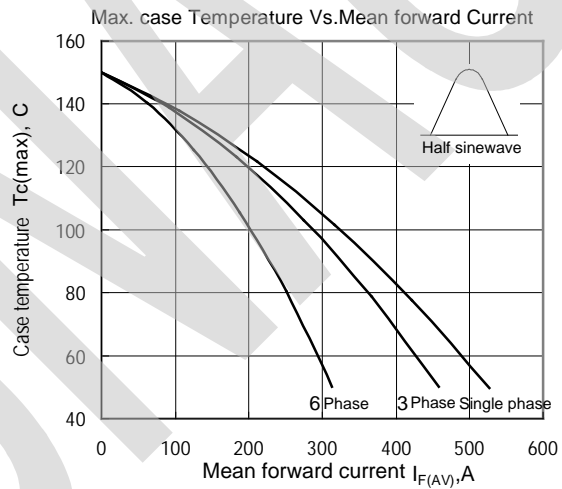


Fig.4 Max Case Temperature Vs. Mean Forward Current

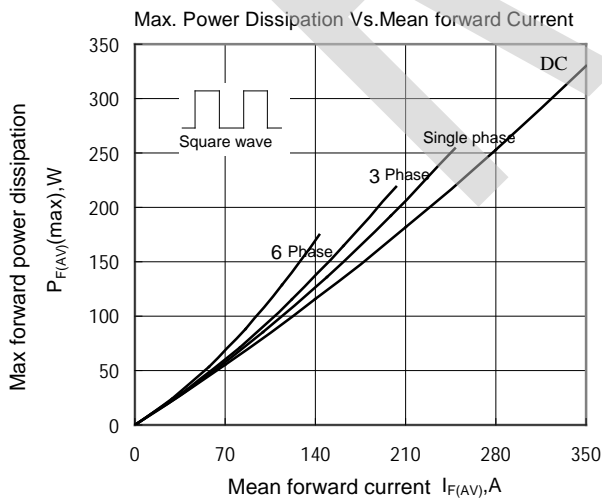


Fig.5 Max Power Dissipation Vs. Mean Forward Current

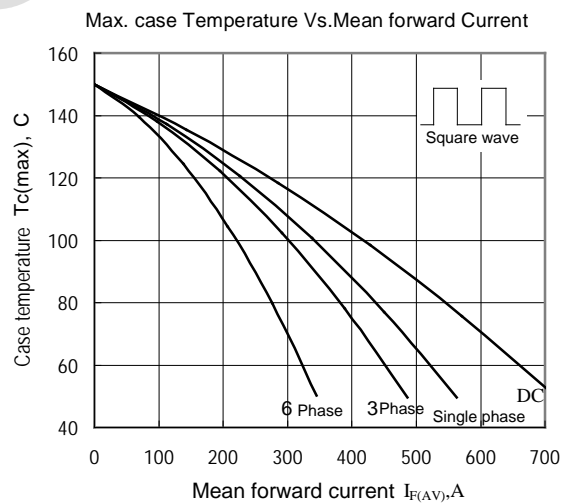


Fig.6 Max Case Temperature Vs. Mean Forward Current

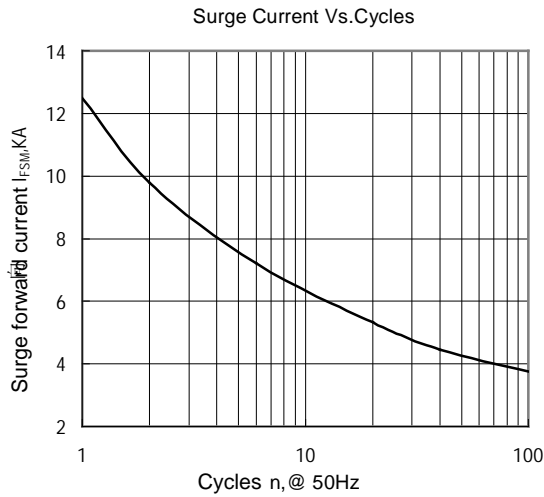


Fig.7 Surge Current Vs.Cycles

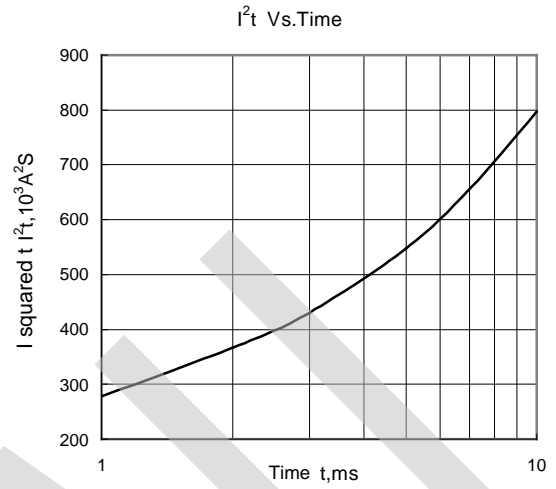
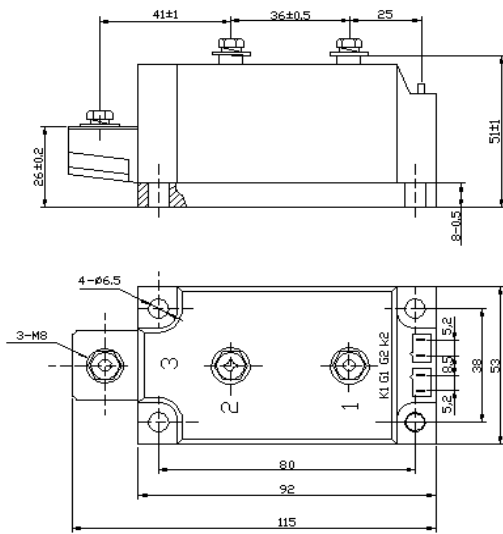


Fig.8 I²t Vs. Time

OUTLINE



M453F

