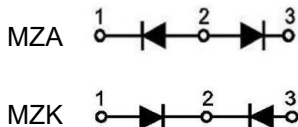


Fast Recovery Diode Module

Symbol	Value	Unit
V_R	600	V
I_{FAV}	400	Amp



Features

- Ultra-fast reverse recovery time
- Soft reverse recovery characteristics
- Low reverse recovery loss
- High system power density

Applications

- Inversion welder
- Power factor correction(PFC)circuit
- Plating power supply
- Ultrasonic cleaner and welder
- Converter & chopper

Maximum Ratings

Symbol	Item	Conditions	Values	Unit
V_R	Maximum D.C. Reverse Voltage		600	V
V_{RRM}	Maximum Repetitive Reverse Voltage			
I_{FAV}	Average Forward Current	Rectangular , d=0.5, $T_c=96^{\circ}\text{C}$, Per Leg	200	A
		Rectangular , d=0.5, $T_c=96^{\circ}\text{C}$, Per Module	400	
I_{FRMS}	RMS Forward Current	$T_c=96^{\circ}\text{C}$, Per Leg	280	A
I_{FSM}	Non-Repetitive Peak Surge Current	$t = 50\text{Hz}(10\text{ms})$, $V_R = 0\text{V}$, Per Leg, $T_j = 25^{\circ}\text{C}$	2000	A
I_{ft}	Circuit Fusing Consideration	$t = 10\text{ms}$ $T_j = 25^{\circ}\text{C}$	20000	A^2s
V_{ISO}	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	3000	V
P_{tot}	Total Power Dissipation	$T_j = 25^{\circ}\text{C}$	694	W
T_j	Operating Junction Temperature		-40 to +150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40 to +125	$^{\circ}\text{C}$
M_t	Mounting Torque	To Terminals(M6)	5±15%	N·m
M_s		To Heatsink(M6)	5±15%	
Weight	Module (Approximately)		185	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Leg)	0.18	$^{\circ}\text{C/W}$

Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop Per Leg, Max	$T_j=25^{\circ}\text{C}$, $I_F=200\text{A}$	—	—	1.6	V
I_{RRM}	Repetitive Peak Reverse Current Per Leg, Max	$T_j = 25^{\circ}\text{C}$ $V_R = V_{RRM}$	—	—	0.2	mA
		$T_j = 150^{\circ}\text{C}$ $V_R = V_{RRM}$	—	—	10	
t_{rr}	Typical Reverse Recovery Time Per Leg	$I_F = 0.5\text{A}$, $I_R = -1\text{A}$, $I_{RR} = -0.25\text{A}$	—	140	—	ns
t_{rr}	Reverse Recovery Time	$I_F=200\text{A}$, $V_R=300\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_j = 25^{\circ}\text{C}$	—	140	—	ns
I_{RM}	Maximum Reverse Recovery Current	$I_F=200\text{A}$, $V_R=300\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_j = 125^{\circ}\text{C}$	—	15	—	A
t_{rr}	Reverse Recovery Time	$T_j = 125^{\circ}\text{C}$	—	260	—	ns
I_{RM}	Maximum Reverse Recovery Current	$T_j = 125^{\circ}\text{C}$	—	25	—	A
V_{TO}	Threshold Voltage, for power loss calculation only	$I_F = 0.5\text{A}$, $I_R = -1\text{A}$, $I_{RR} = -0.25\text{A}$	0.7			V
r_T	Slope Resistance, for power loss calculation only	$I_F=200\text{A}$, $V_R=300\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_j = 25^{\circ}\text{C}$	2.0			m Ω

Characteristics Diagram

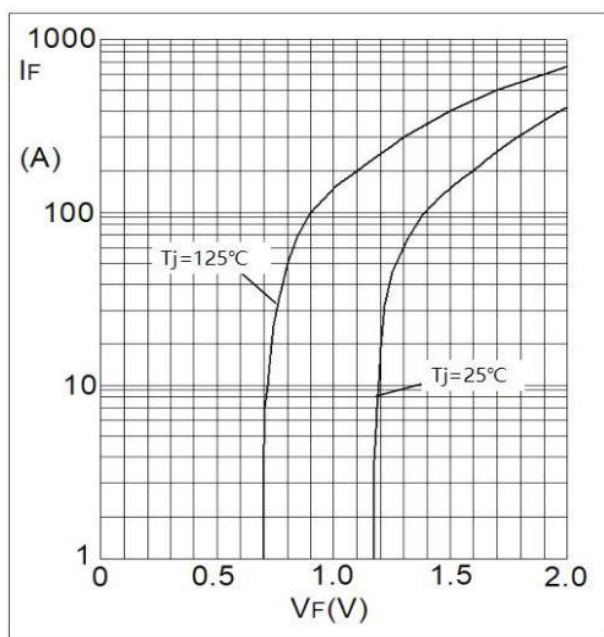


Fig1. Forward Characteristics

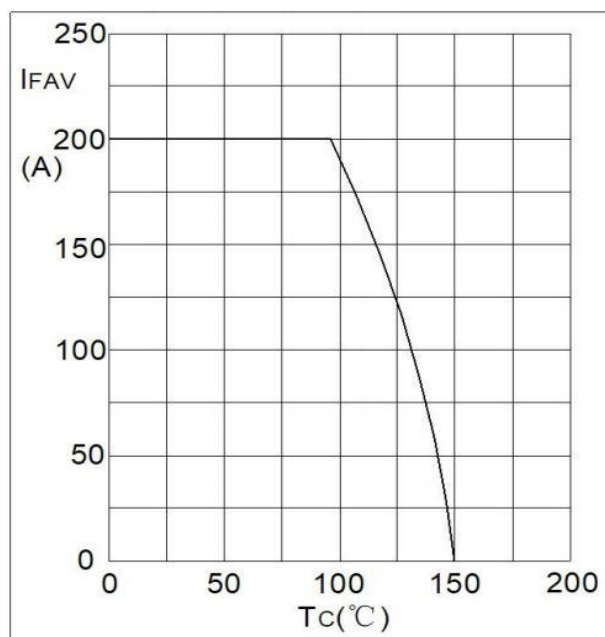


Fig2. Forward Current Derating Curve

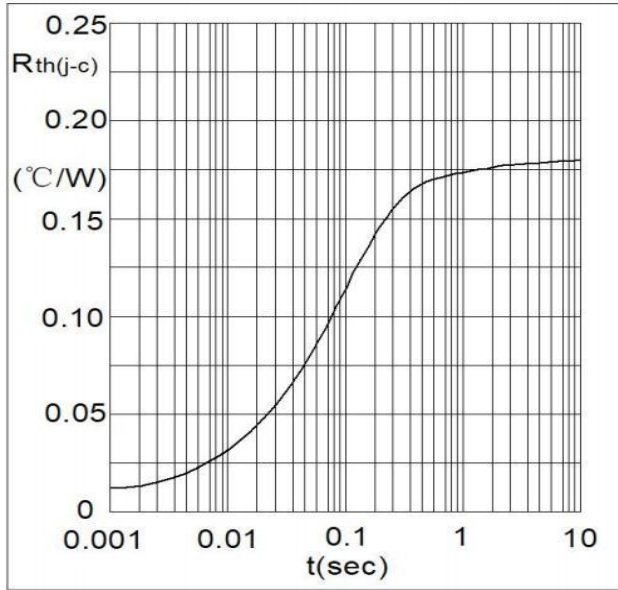


Fig3. Transient Thermal Impedance

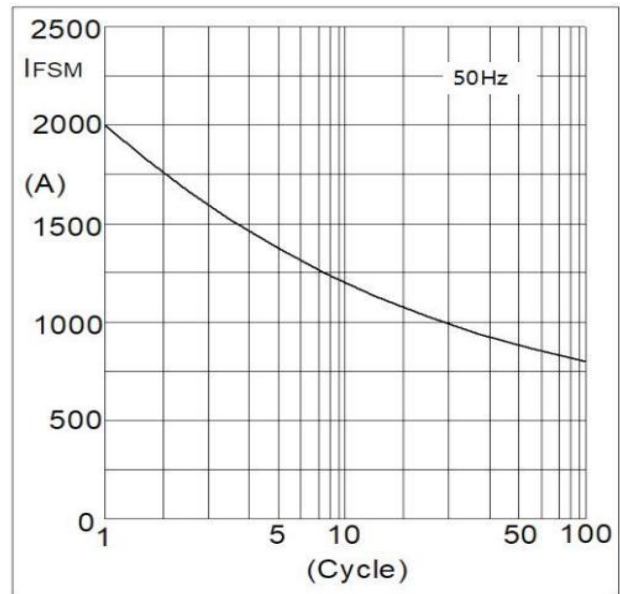


Fig4. Max Non-Repetitive Forward Surge Current

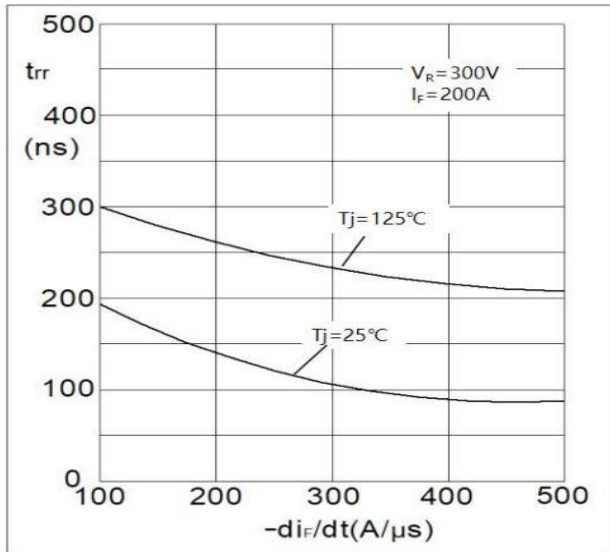


Fig5. Reverse Recovery Time VS di_F/dt

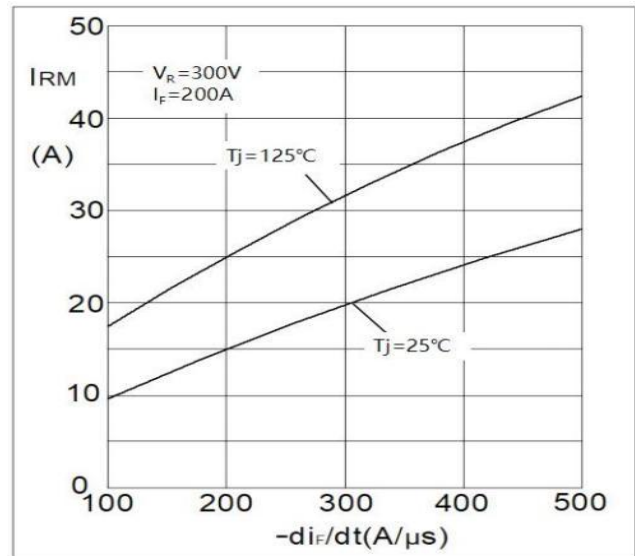


Fig6. Reverse Recovery Current VS di_F/dt

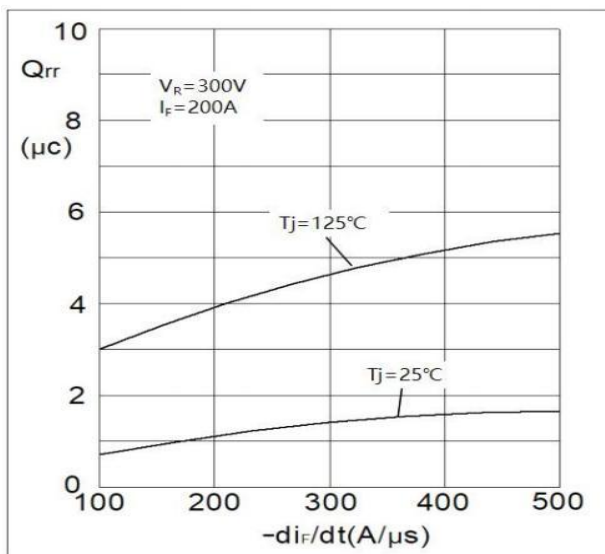
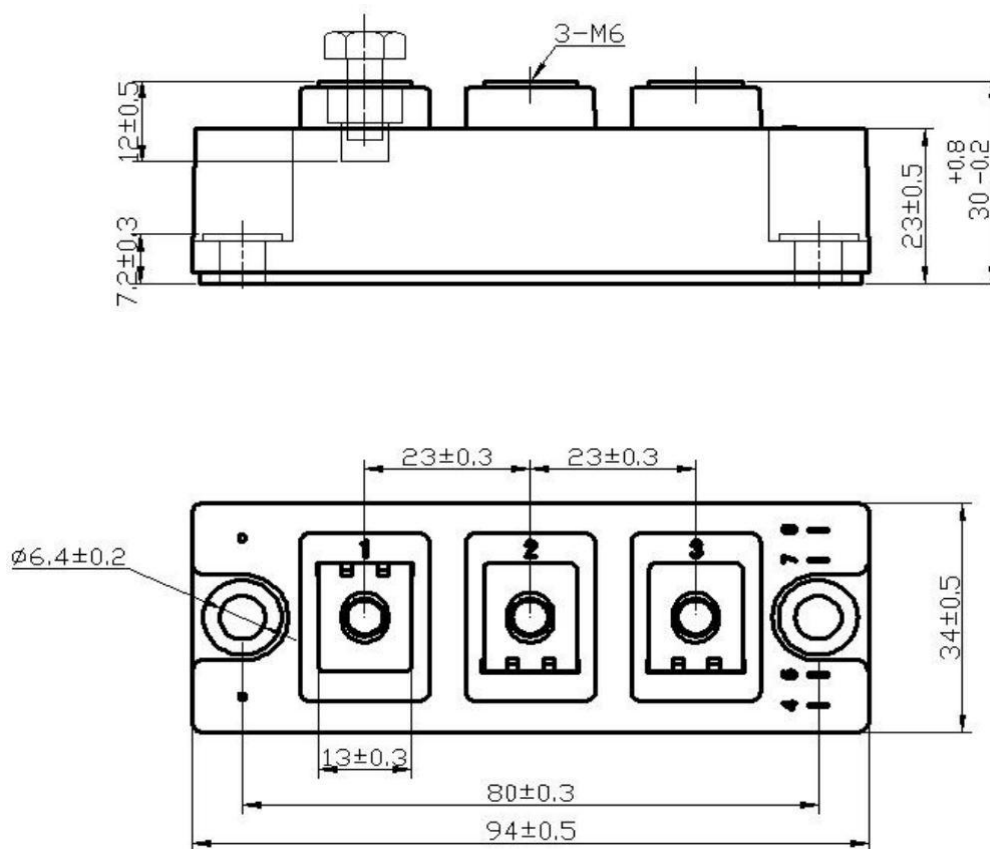


Fig7. Reverse Recovery Charge VS di_F/dt

Package Outlines(Dimensions in mm)***Important Usage Information and Disclaimer**

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