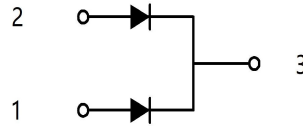


### Fast Recovery Diode Module

Symbol	Value	Unit
$V_R$	600	V
$I_{FAV}$	400	A



#### 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=50Hz(10ms), $V_R=0\text{V}$ , Per Leg, $T_j=25^\circ\text{C}$	3000	A
$I^2t$	Circuit Fusing Consideration	t=10ms, $T_j=25^\circ\text{C}$	45000	$\text{A}^2\text{s}$
$P_{tot}$	Total Power Dissipation	$T_j=25^\circ\text{C}$	833	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)	-	85	g

#### Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Leg)	0.15	$^\circ\text{C}/\text{W}$

### Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
$V_{FM}$	Forward Voltage Drop Per Leg, Max	$T_j=25^\circ\text{C}$ , $I_F=200\text{A}$	-	-	1.4	V
$I_{RRM}$	Repetitive Peak Reverse Current Per Leg, Max	$T_j=25^\circ\text{C}$ , $V_R=V_{RRM}$	-	-	0.2	mA
		$T_j=150^\circ\text{C}$ , $V_R=V_{RRM}$	-	-	5	
$t_{rr}$	Typical Reverse Recovery Time Per Leg	$I_F=0.5\text{A}$ , $I_R=-1\text{A}$ , $I_{RR}=-0.25\text{A}$	-	115	-	ns
$t_{rr}$	Reverse Recovery Time	$I_F=200\text{A}$ , $V_R=300\text{V}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_j=25^\circ\text{C}$	-	110	-	ns
$I_{RM}$	Maximum Reverse Recovery Current		-	12	-	A
$t_{rr}$	Reverse Recovery Time	$I_F=200\text{A}$ , $V_R=300\text{V}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ , $T_j=125^\circ\text{C}$	-	210	-	ns
$I_{RM}$	Maximum Reverse Recovery Current		-	20	-	A
$V_{T0}$	Threshold Voltage, for power loss calculation only	$T_j=125^\circ\text{C}$	0.7			V
$r_T$	Slope Resistance, for power loss calculation only	$T_j=125^\circ\text{C}$	2.75			m $\Omega$

### Characteristics Diagram

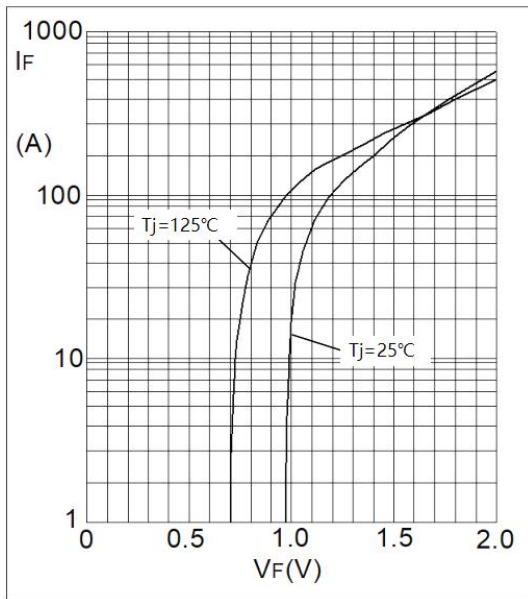


Fig1. Forward Characteristics

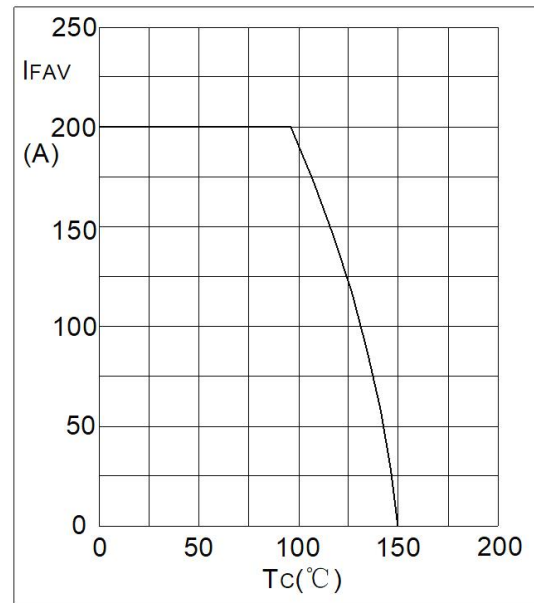


Fig2. Forward Current Derating Curve

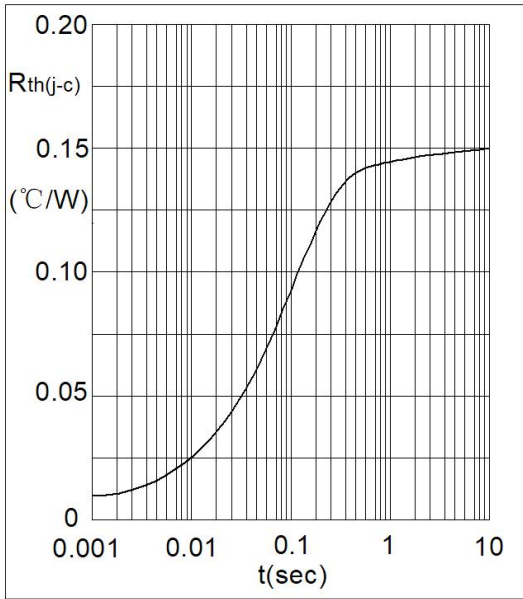


Fig3. Transient Thermal Impedance

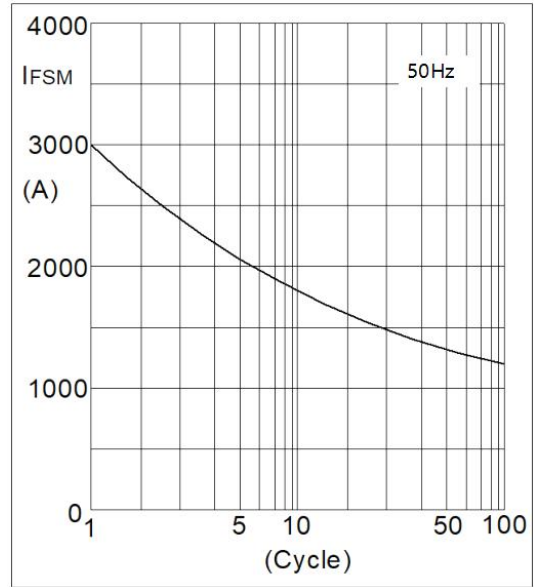


Fig4. Max Non-Repetitive Forward Surge Current

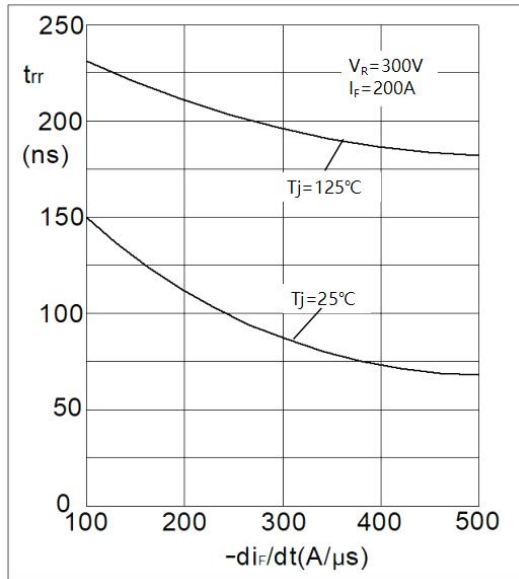


Fig5. Reverse Recovery Time VS  $di_F/dt$

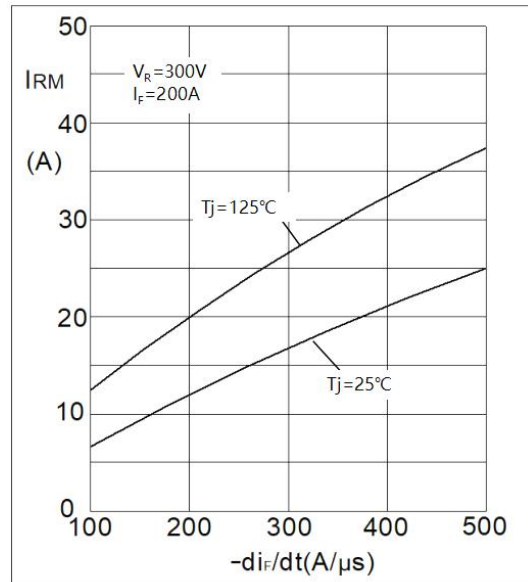


Fig6. Reverse Recovery Current VS  $di_F/dt$

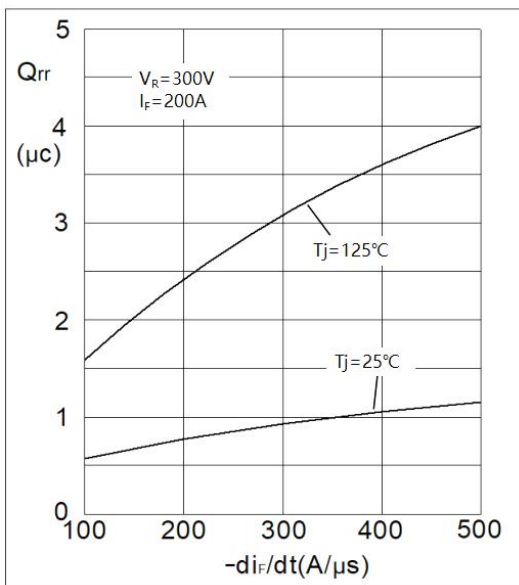
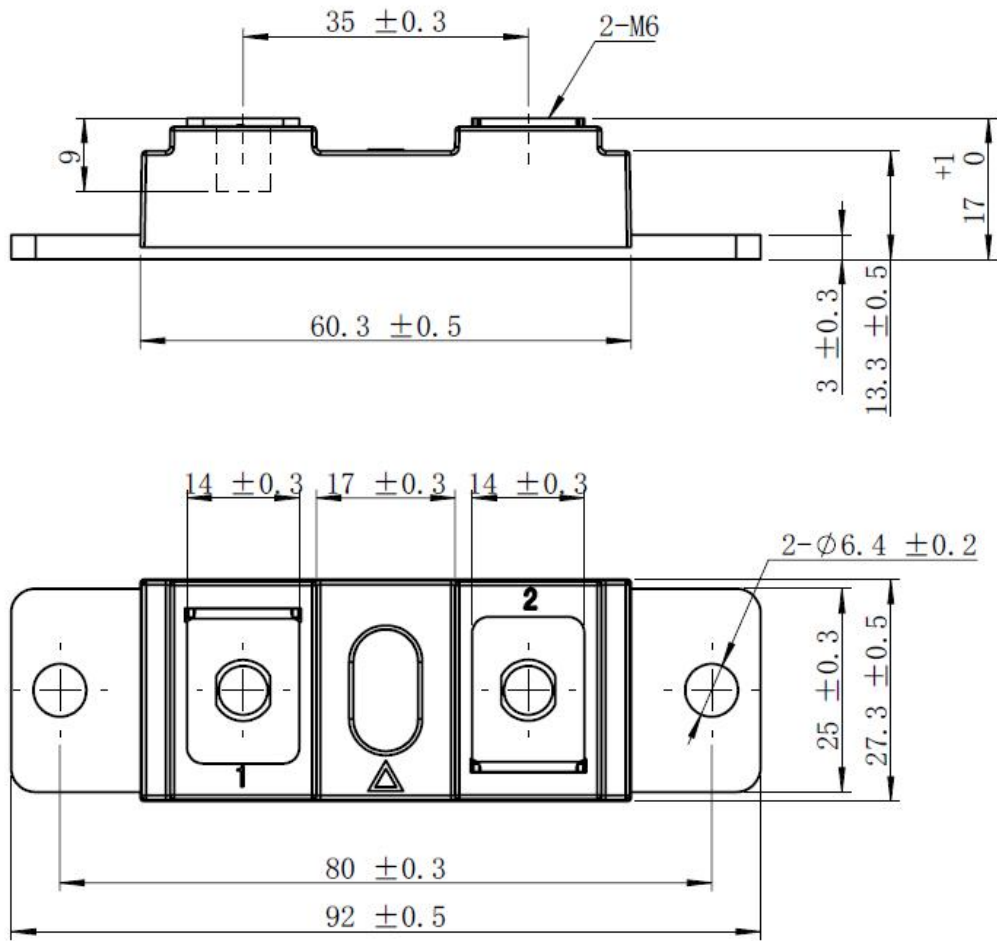


Fig7. Reverse Recovery Charge VS  $di_F/dt$

### Package Outlines M45 (Dimensions in mm)



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