

PRODUCT FEATURES

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current



APPLICATIONS

- Inversion Welder
- Uninterruptible Power Supply
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- PFC



ABSOLUTE MAXIMUM RATINGS

$T_C = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter/Test Conditions		Values	Unit
V_R	Maximum D.C. Reverse Voltage		1200	V
V_{RRM}	Maximum Repetitive Reverse Voltage			
$I_{F(AV)}$	Average Forward Current	$T_C = 75^\circ\text{C}$, Per Module	400	A
$I_{F(RMS)}$	RMS Forward Current	$T_C = 75^\circ\text{C}$, Per Module	560	
I_{FSM}	Non Repetitive Surge Forward Current	$T_J = 45^\circ\text{C}$, $t = 10\text{ms}$, Sine, peak value	3600	
		$T_J = 45^\circ\text{C}$, $t = 8.3\text{ms}$, Sine, peak value	3960	
I^2t	For Fusing	$T_J = 45^\circ\text{C}$, $t = 10\text{ms}$, Sine, peak value	64.8	KA ² S
		$T_J = 45^\circ\text{C}$, $t = 8.3\text{ms}$, Sine, peak value	65	
P_D	Power Dissipation		1450	W
T_J	Junction Temperature		-40 to +150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range		-40 to +125	$^\circ\text{C}$
V_{isol}	Isolation Breakdown Voltage	AC, 50Hz(R.M.S), $t = 1\text{minute}$	3000	V
Torque	Module to Sink	Recommended (M6)	3~5	Nm
	Module Electrodes	Recommended (M6)	3~5	Nm
R_{thJC}	Junction to Case Thermal Resistance(Per Module)		0.085	$^\circ\text{C} / \text{W}$
Weight			300	g

ELECTRICAL CHARACTERISTICS

$T_C = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
I_{RM}	Maximum Reverse Leakage Current	$V_R = 1200\text{V}$			0.5	mA
		$V_R = 1200\text{V}, T_J = 125^\circ\text{C}$			10	
V_F	Forward Voltage	$I_F = 400\text{A}$		2.1	2.3	V
		$I_F = 400\text{A}, T_J = 125^\circ\text{C}$		1.8		
t_{rr}	Reverse Recovery Time ($I_F = 1\text{A}, dI_F/dt = -200\text{A}/\mu\text{s}, V_R = 30\text{V}$)			80		ns
t_{rr}	Reverse Recovery Time	$I_F = 400\text{A}, V_R = 600\text{V},$		190		ns
I_{RRM}	Maximum Reverse Recovery Current	$dI_F/dt = -200\text{A}/\mu\text{s}$		14		A
t_{rr}	Reverse Recovery Time	$I_F = 400\text{A}, V_R = 600\text{V},$		550		ns
I_{RRM}	Maximum Reverse Recovery Current	$dI_F/dt = -200\text{A}/\mu\text{s}, T_J = 125^\circ\text{C}$		29		A
t_{rr}	Reverse Recovery Time	$I_F = 400\text{A}, V_R = 600\text{V},$		370		ns
I_{RRM}	Maximum Reverse Recovery Current	$dI_F/dt = -1000\text{A}/\mu\text{s}, T_J = 125^\circ\text{C}$		137		A

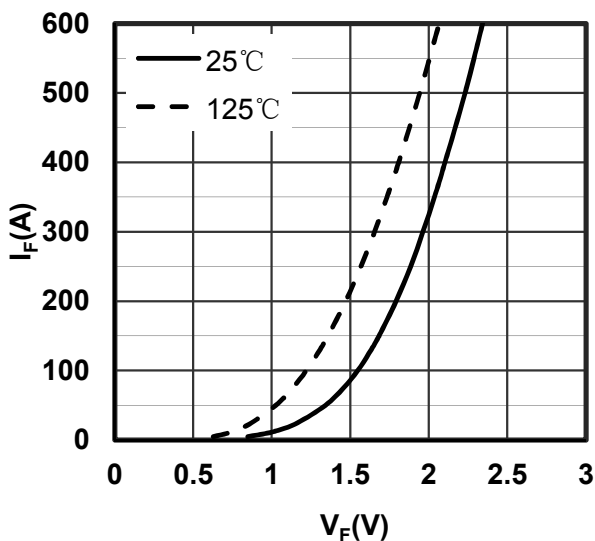


Figure 1. Forward Voltage Drop vs Forward Current

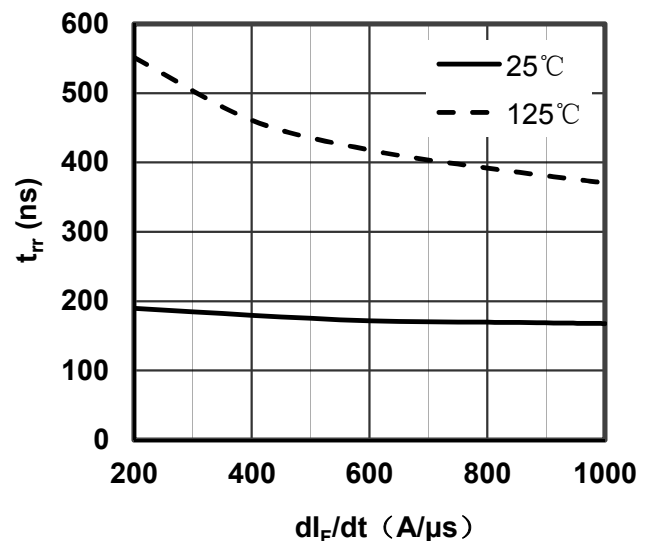


Figure 2. Reverse Recovery Time vs dI_F/dt

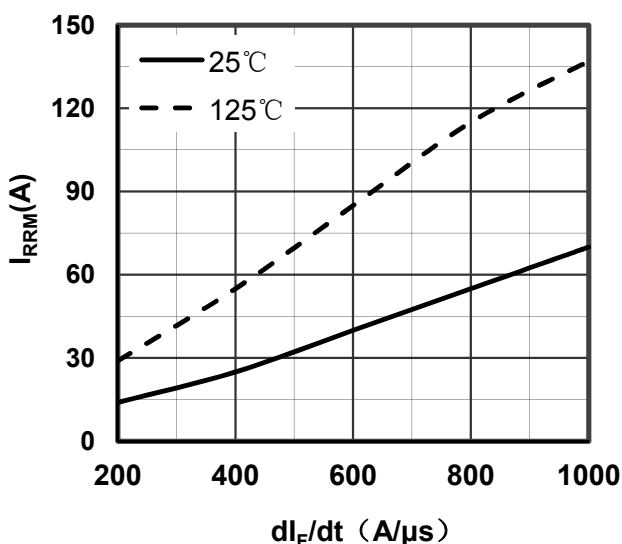


Figure 3. Reverse Recovery Current vs dI_F/dt

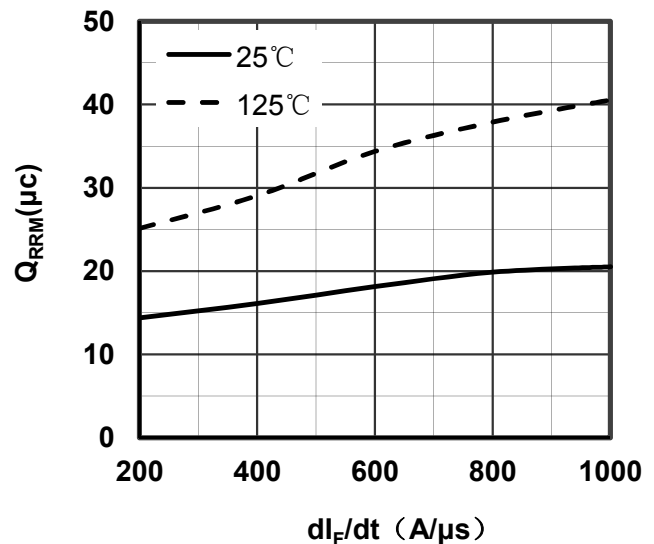


Figure 4. Reverse Recovery Charge vs dI_F/dt

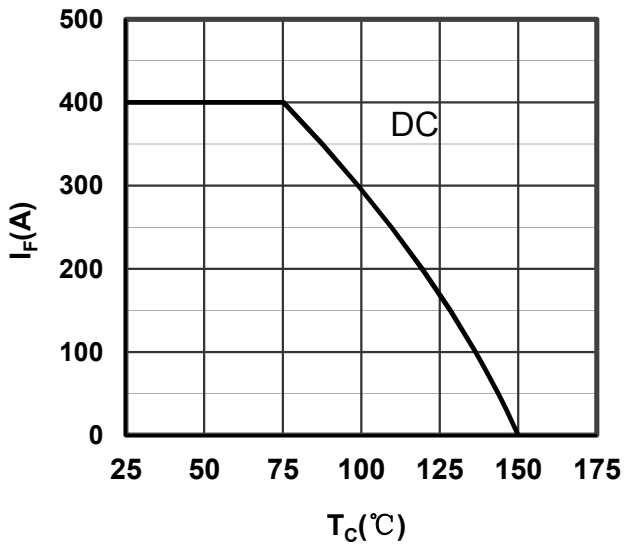


Figure 5. Forward current vs Case temperature

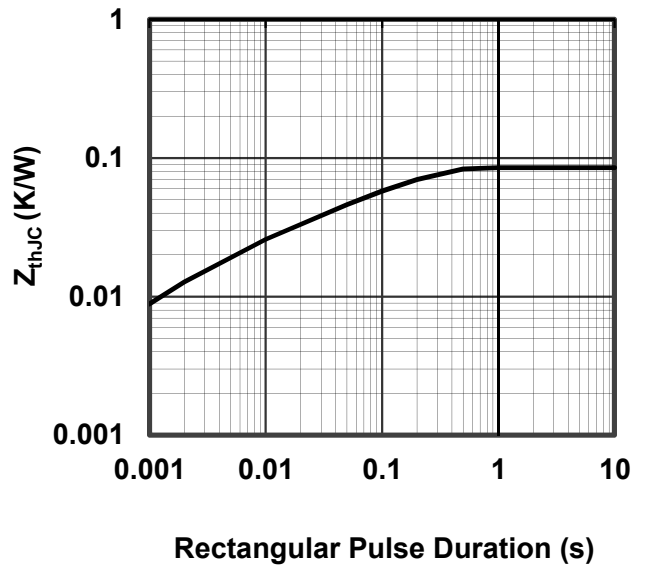
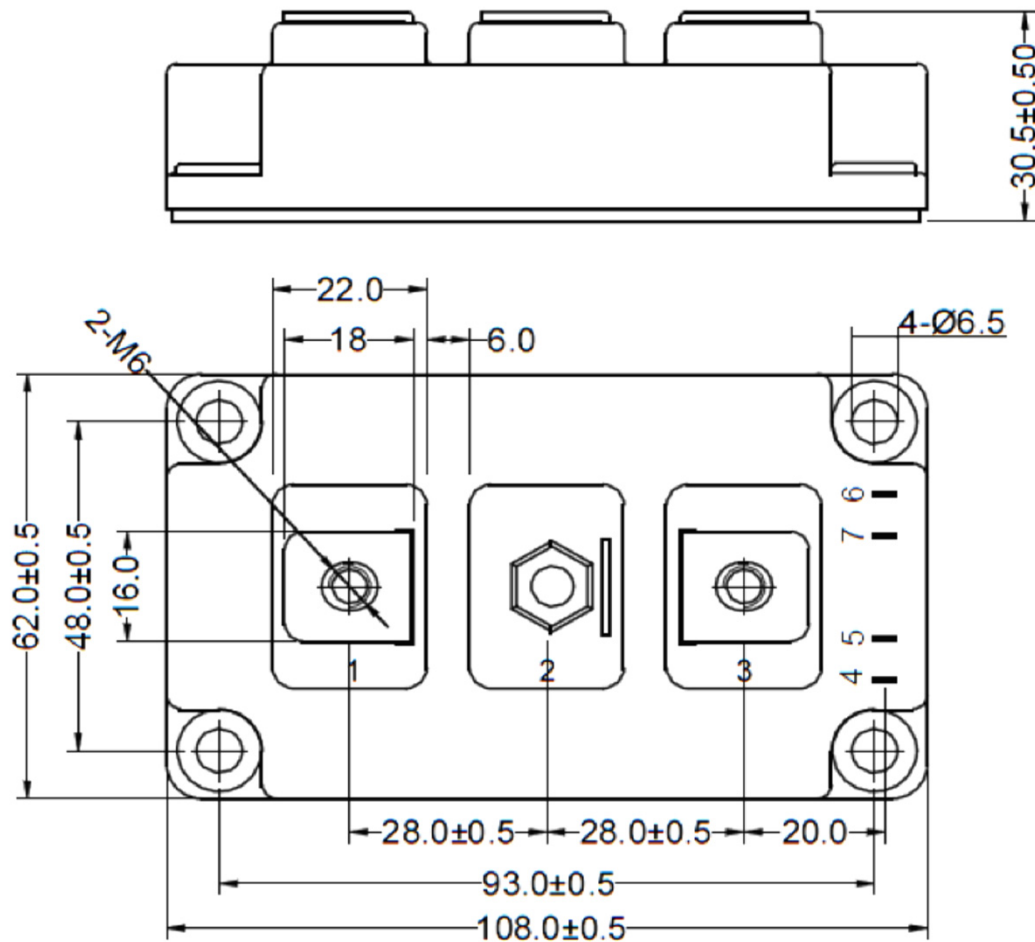


Figure 6. Transient Thermal Impedance



Dimensions in (mm)
Figure 7. Package Outline