

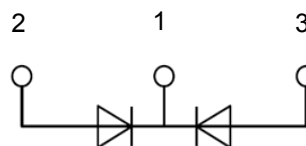
## PRODUCT FEATURES

- Ultrafast Reverse Recovery Time
- Soft Reverse Recovery Characteristics
- Low Reverse 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		600	V
$V_{RRM}$	Maximum Repetitive Reverse Voltage			
$I_{F(AV)}$	Average Forward Current		$T_C=90^\circ\text{C}$ , Per Diode	A
$I_{F(RMS)}$	RMS Forward Current		$T_C=90^\circ\text{C}$ , Per Diode	
$I_{FSM}$	Non Repetitive Surge Forward Current		$T_J=45^\circ\text{C}$ , $t=10\text{ms}$ , Sine, peak value	
			$T_J=45^\circ\text{C}$ , $t=8.3\text{ms}$ , Sine, peak value	3300
$I^2t$	For Fusing		$T_J=45^\circ\text{C}$ , $t=10\text{ms}$ , Sine, peak value	45
			$T_J=45^\circ\text{C}$ , $t=8.3\text{ms}$ , Sine, peak value	45.2
$P_D$	Power Dissipation		835	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
Torque	Module Electrodes	Recommended (M6)	3~5	Nm
$R_{thJC}$	Junction to Case Thermal Resistance(Per Diode)		0.15	$^\circ\text{C}/\text{W}$
Weight			160	g

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# MMF300S060DK2B

## 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	$V_R = 600\text{V}$		100	$\mu\text{A}$
		$V_R = 600\text{V}, T_J = 125^{\circ}\text{C}$		10	$\text{mA}$
$V_F$	Forward Voltage	$I_F=300\text{A}$	1.1	1.35	V
		$I_F=300\text{A}, T_J=125^{\circ}\text{C}$	1.0		
$t_{rr}$	Reverse Recovery Time ( $I_F = 1\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, V_R = 30\text{V}$ )		60		ns
$t_{rr}$	Reverse Recovery Time		165		ns
$I_{RRM}$	Maximum Reverse Recovery Current		13.5		A
$t_{rr}$	Reverse Recovery Time		350		ns
$I_{RRM}$	Maximum Reverse Recovery Current		28		A

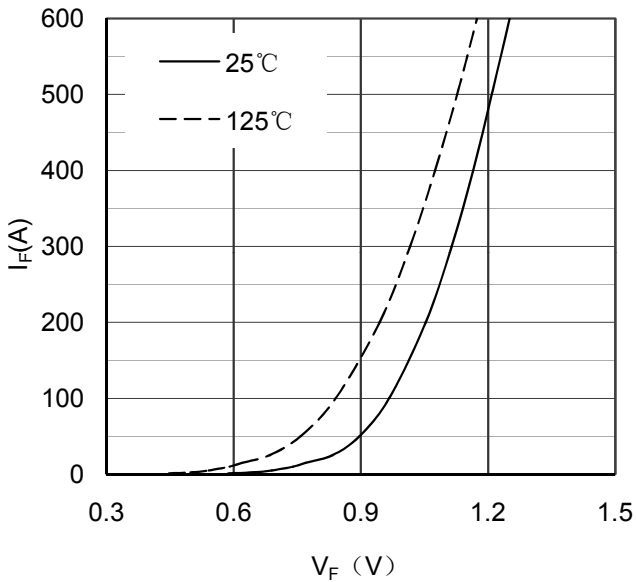


Figure 1. Forward Voltage Drop vs Forward Current

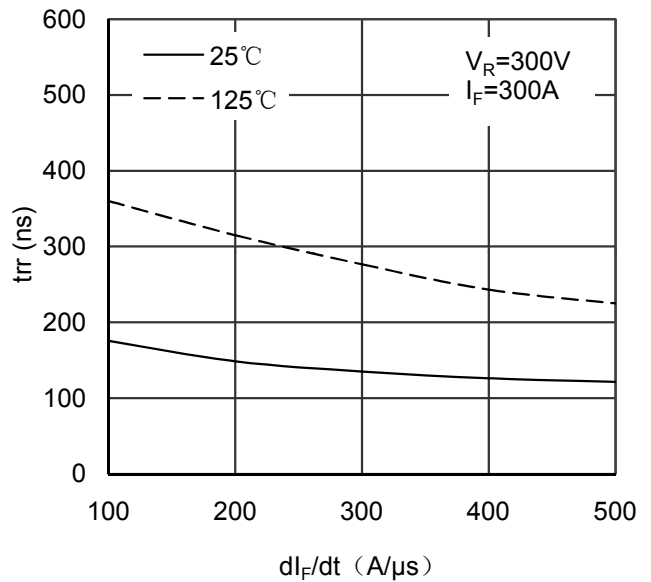


Figure 2. Reverse Recovery Time vs  $di_F/dt$

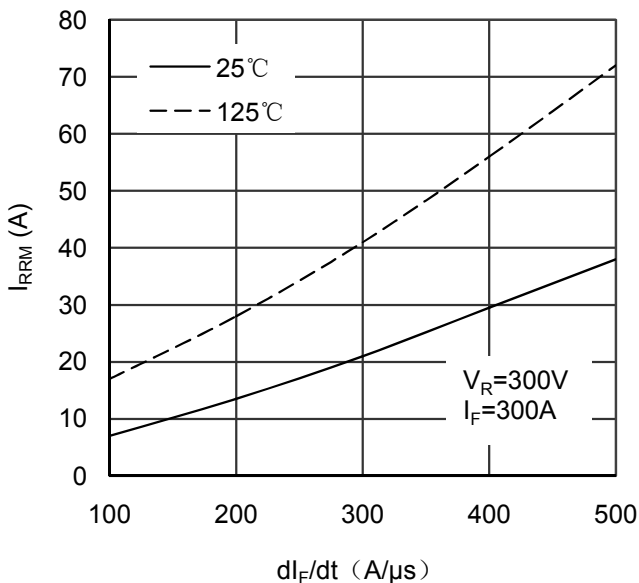


Figure 3. Reverse Recovery Current vs  $di_F/dt$

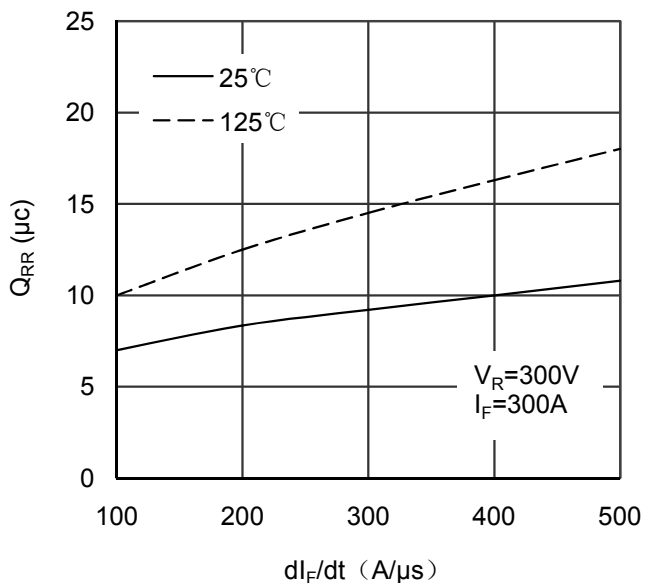


Figure 4. Reverse Recovery Charge vs  $di_F/dt$

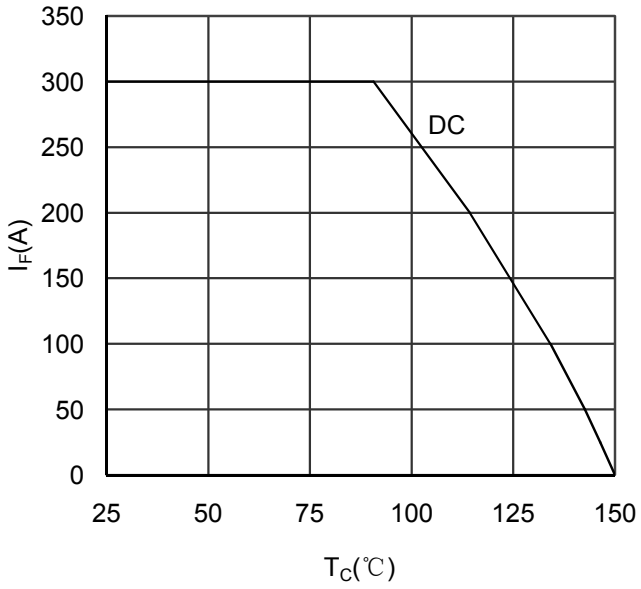


Figure 5. Forward current vs Case temperature

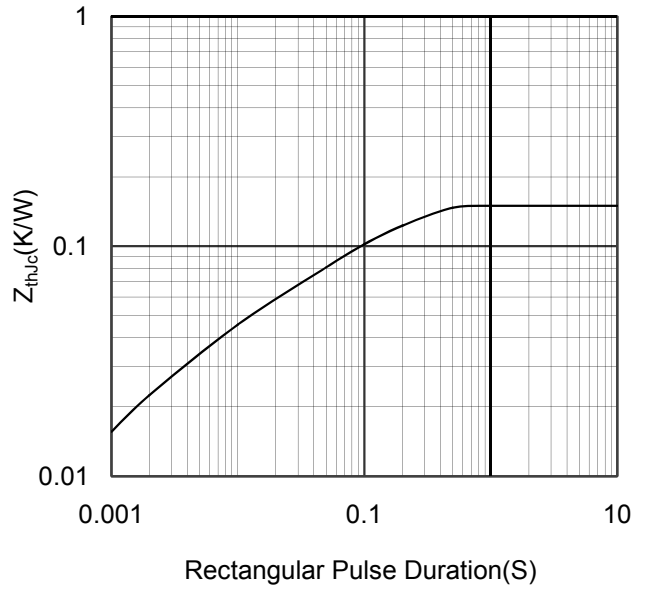
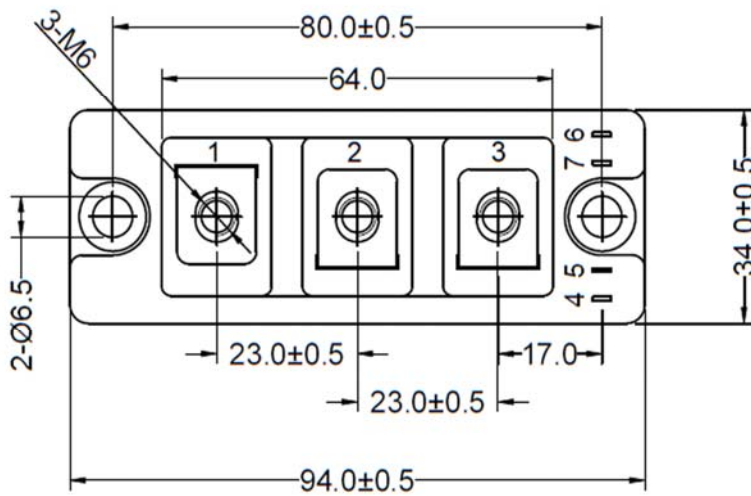
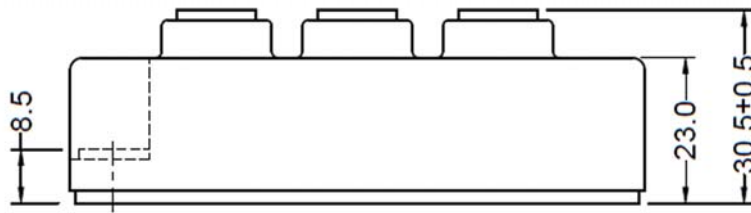


Figure 6. Transient Thermal Impedance



Dimensions in (mm)

Figure 7. Package Outline