

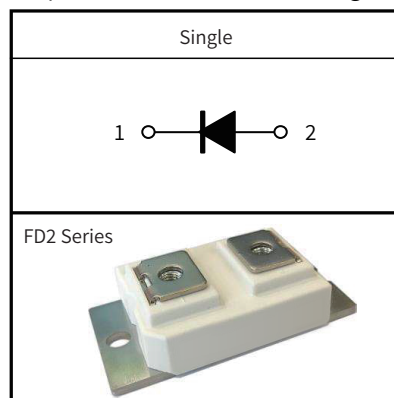
Features

- Repetitive Reverse Voltage : $V_{RRM} = 600V$
- Low Forward Voltage Drop : $V_F(\text{typ.}) = 1.2V$
- Average Forward Current : $I_F(\text{AV.}) = 300A$ @ $T_c = 100^\circ C$
- Ultra-Fast Reverse Recovery Time : $t_{rr}(\text{typ.}) = 180ns$
- Extensive Characterization of Recovery Parameters
- Reduced EMI and RFI
- Isolation Type Package

Applications

- Welding Machine
- Induction Heating
- UPS

Equivalent Circuit and Package



Please see the package out line information

Absolute Maximum Ratings @ $T_c = 25^\circ C$ (Per Leg)

Symbol	Parameter	Conditions	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		600	V
$V_{R(DC)}$	Reverse DC Voltage		480	V
$I_{F(AV)}$	Average Forward Current	$T_c = 25^\circ$	600	A
		$T_c = 100^\circ C$	300	A
$I_{FSM}^{(1)}$	Surge(non-repetitive) Forward Current	One Half Cycle at 60Hz, Peak Value	4200	A
I_t^2	$I^2 t$ for Fusing	Value for One Cycle Current, $t_w = 8.3ms, T_j = 25^\circ C$ Start	7.32×10^4	A^2s
$T_J^{(2)}$	Junction Temperature	-	$-40 \sim 125$	$^\circ C$
T_{stg}	Storage Temperature	-	$-40 \sim 125$	$^\circ C$
V_{isol}	Isolation Voltage	@ AC 1 minutes	2500	V
P_d	Maximum Power Dissipation		1040	W
-	Mounting screw torque	M6	4.0	N.m
-	Mounting terminals screw torque	M6	3.0	N.m

(Note *1) Repetitive rating : Pulse width limited by max junction temperature

(Note *2) The maximum junction temperature of chip is $150^\circ C$

Electrical Characteristics of FRD @ Tc=25°C (unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_R	Cathode Anode Breakdown Voltage	$I_R = 100\mu A$	600	-	-	V
V_{FM}	Maximum Forward Voltage	$I_{FM} = 300A$	$T_j = 25^\circ C$	-	1.2	V
			$T_j = 125^\circ C$	-	1.1	
I_{RRM}	Repetitive Peak Reverse Current	$T_C = 100^\circ C$, V_{RRM} applied	-	-	15.0	mA
t_{rr}	Reverse Recovery Time	$I_{FM} = 300A$, $V_R = 300V$ $di/dt = -600A/\mu s$	$T_j = 25^\circ C$	-	180	ns
			$T_j = 125^\circ C$	-	280	

Thermal Characteristics and Weight

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$R_{\theta JC}$	Junction-to-Case	per FRD	-	-	0.10	°CW
Weight	Weight of Module		-	-	180	g

Performance Curves

Fig. 1 Typical Forward Voltage Drop vs. Instantaneous Current

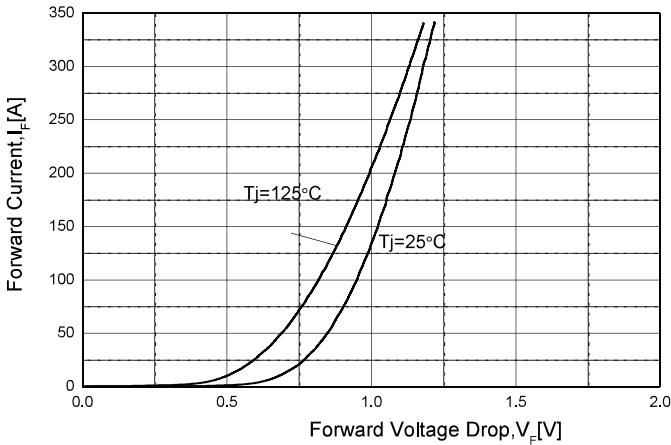


Fig. 2 Typical Reverse Recovery Time vs. $-di/dt$

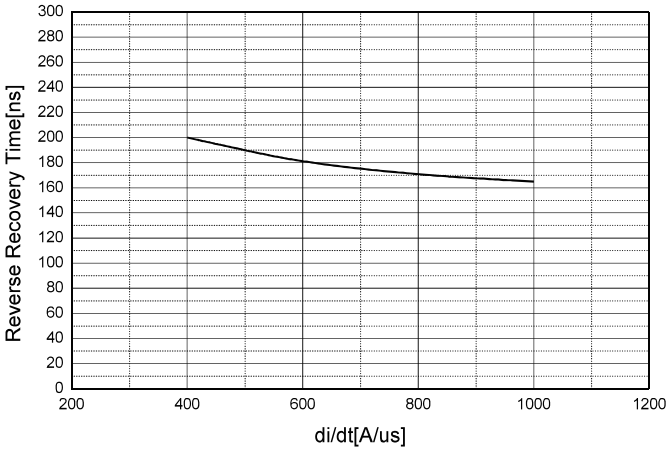


Fig. 3 Transient Thermal Impedance(Z_{thjc}) Characteristics

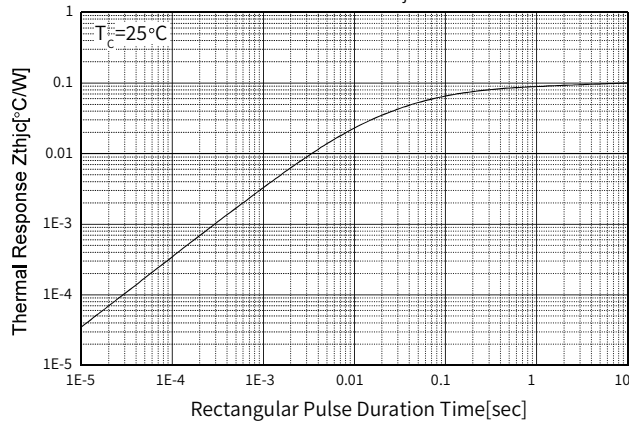
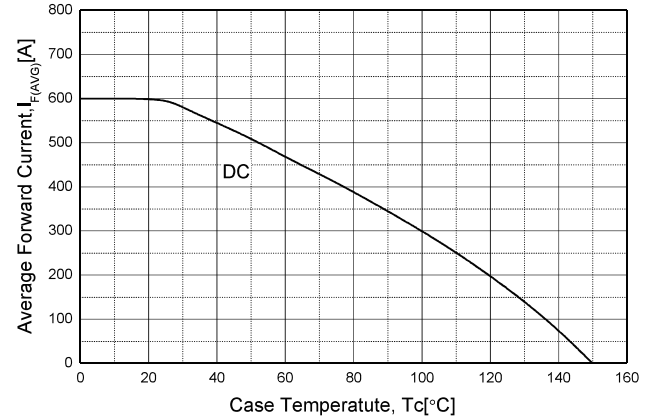


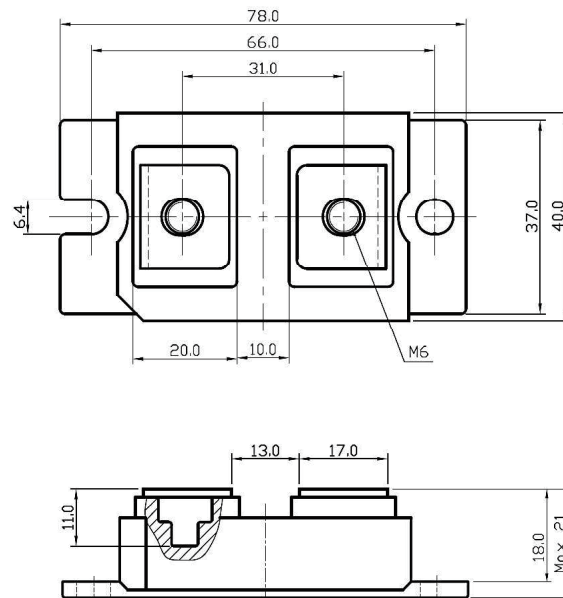
Fig. 4 Forward Current Derating Curve



Package Out Line Information

FD2 Package

Dimensions in mm



Internal Circuit

