

SDM2F100G04FE

Ultra-Fast Soft Recovery Diode Module

General Description

Ultra-FRD module devices are optimized to reduce losses and EMI/RFI in high frequency power conditioning electrical systems.

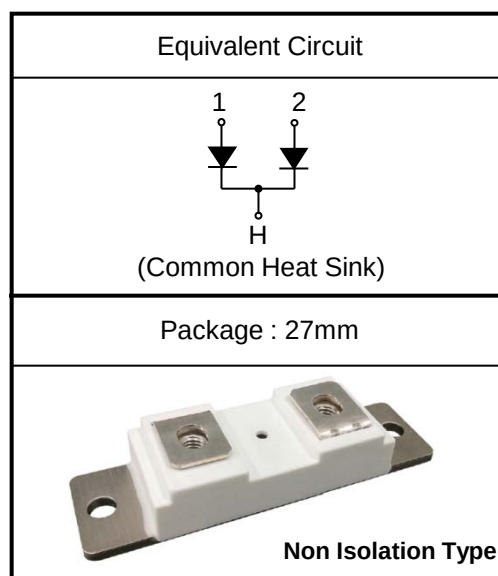
These diode modules are ideally suited for power converters, motors drives and other applications where switching losses are significant portion of the total losses

Features

- ❑ Repetitive Reverse Voltage : $V_{RRM} = 400V$
- ❑ Low Forward Voltage Drop : $V_F(\text{typ.}) = 1.05V$
- ❑ Average Forward Current : $I_F(\text{AV.}) = 100A$ @ $T_c = 100^\circ C$
- ❑ Ultra-Fast Reverse Recovery Time : $t_{rr}(\text{typ.}) = 90 \text{ ns}$ @ $100A$
- ❑ Extensive Characterization of Recovery Parameters
- ❑ Reduced EMI and RFI
- ❑ Non Isolation Type Package and $175^\circ C$ Operating Junction Temperature
- ❑ Dual FRD Construction

Applications

- ❑ High Speed & High Power Converters, Welders.
- ❑ Various Switching and Telecommunication Power Supply.



Please see the package Out line information

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

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		400	V
V_R	Reverse DC Voltage		320	V
$I_{F(AV)}$	Average Forward Current	$T_c = 25^\circ C$	200	A
		$T_c = 100^\circ C$	100	
I_{FSM}	No Repetitive Surge Forward Current (1/2 cycle, sine)		2000	A
I^2t	I^2t For Fusing (60Hz, sine, $t=8.3ms$, $T_j = 25^\circ C$)		$16.7 * 10^3$	A^2s
P_D	Maximum Power Dissipation		350	W
T_j	Junction Temperature		-40 to +175	$^\circ C$
T_{STG}	Storage Temperature		-40 to +150	$^\circ C$

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

Symbol	Parameter	Test Conditions		Min	Typ	Max	Unit
V_R	Cathode Anode Breakdown Voltage	$I_R = 100\mu\text{A}$		400	--	--	V
I_R	Repetitive Peak Reverse Current	$V_R = 400\text{V}, T_C = 100^{\circ}\text{C}$		--	--	1	mA
V_{FM}	Maximum Forward Voltage	$I_F = 100\text{A}$	$T_C = 25^{\circ}\text{C}$	--	1.05	1.3	V
			$T_C = 100^{\circ}\text{C}$	--	0.95	1.1	
t_{rr}	Reverse Recovery Time	$V_R = 30\text{V},$ $I_F = 1\text{A},$ $di/dt = -100\text{A}/\mu\text{s}$	$T_C = 25^{\circ}\text{C}$	--	45	60	ns
t_{rr}	Reverse Recovery Time	$V_R = 200\text{V},$ $I_F = 100\text{A},$ $di/dt = 100\text{A}/\mu\text{s}$	$T_C = 25^{\circ}\text{C}$	--	90	120	ns
			$T_C = 100^{\circ}\text{C}$	--	120	--	

Thermal Mechanical Specifications

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$R_{\theta JC}$	Junction-to-Case	DC Current	--	--	0.43	$^{\circ}\text{C}/\text{W}$
-	Torque	Mounting Torque	4.0			N·m
-	Torque	Terminal Torque	3.0			N·m
L x W x H	Dimensions	Typical, see outline drawing	92 x 27 x 17			mm
-		Term. To Term	--	35	--	mm
m	Mass		--	70	--	g

Characterization curves

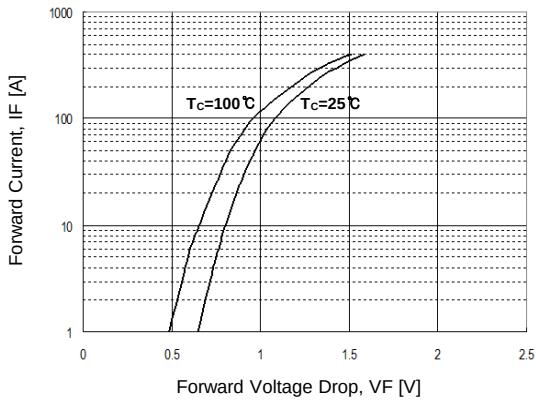


Fig1. Typical Forward Voltage Drop vs. Instantaneous Forward Current

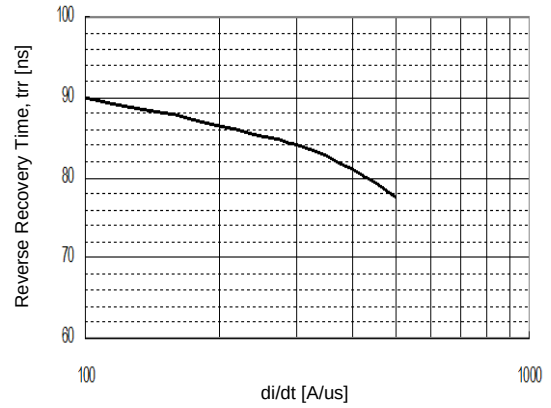


Fig2. Typical Reverse Recovery Time vs. $-di/dt$

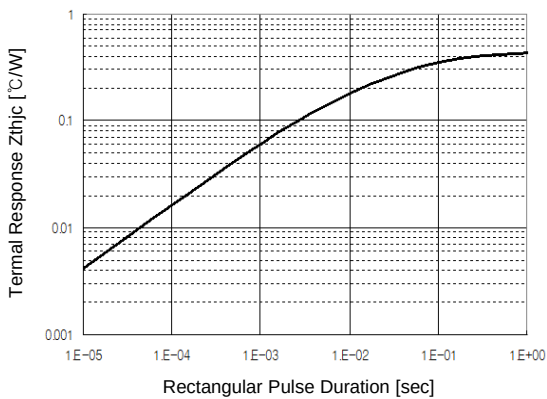


Fig3. Transient Thermal Impedance(Z_{thjc}) Characteristics

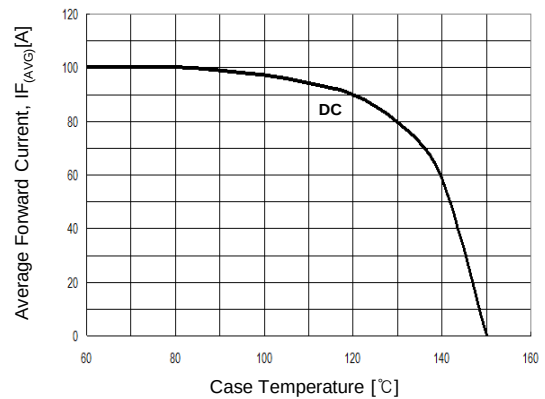


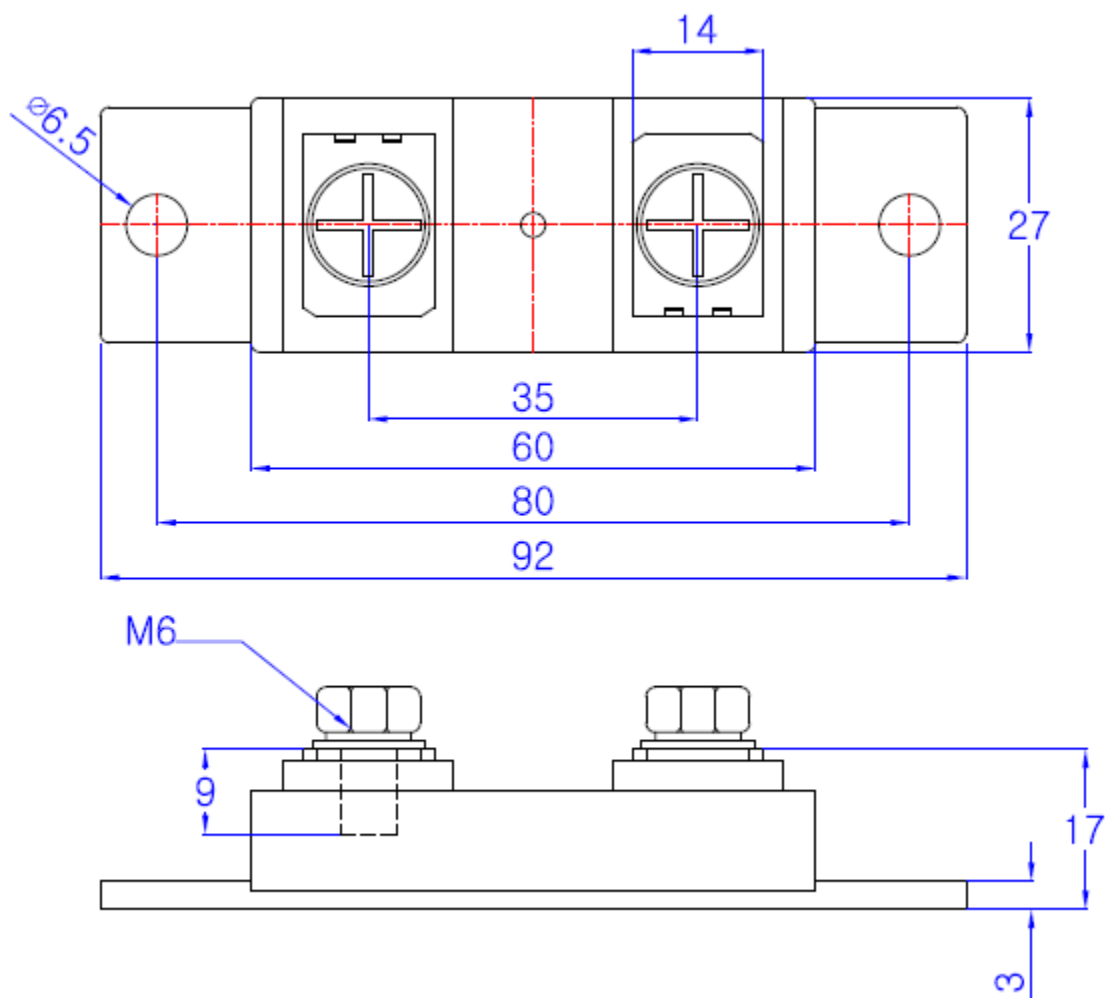
Fig4. Forward Current Derating Curve

Package Out line Information

27mm



Dimensions in mm



Attached (recommended torque):

Mounting torque(M6) 4.0 Nm Terminal torque(M6) 3.0 Nm