

100V/540A

2-PACK MOSFET MODULE (Half - Bridge)

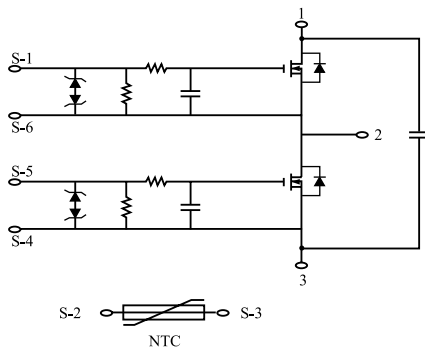
FEATURES

- Low $R_{DS(on)}$
- High frequency operation
- dv/dt ruggedness
- Fast switching

APPLICATION

- Motor Control
- Electric Vehicle, Automotive etc.

INTERNAL CIRCUIT

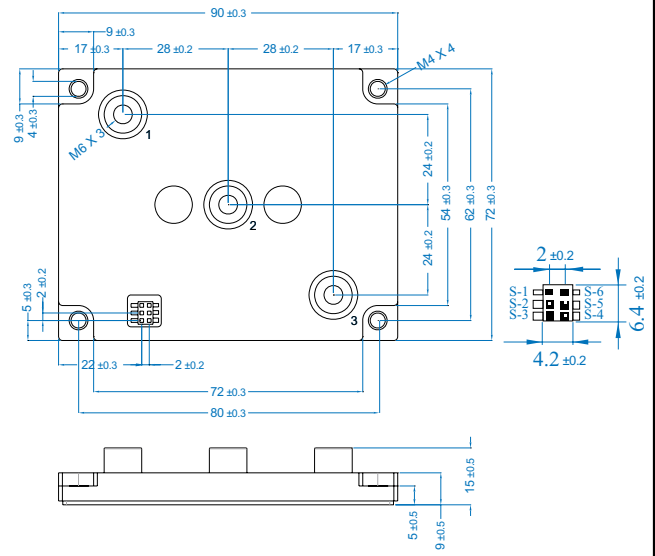


FMT02



OUTLINE DRAWING

Unit : mm



MAXIMUM RATING (@Ta=25 Per Leg)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-to Source Breakdown Voltage		V_{DSS}	100	V
Gate to Source Voltage		V_{GS}	± 15	V
Continuous Drain Current	@ $T_C=25$	I_C	876	A
	@ $T_C=100$		540	
Isolation Voltage		V_{ISO}	2500	V
Junction Temperature		T_j	-40 ~ 150	
Storage Temperature		T_{stg}	-40 ~ 125	
Weight of Module		Weight	98 ± 5	g
Terminal Connection Torque(M4)		M	2	Nm
Terminal Connection Torque(M6)		M	5	Nm

FMMT311

ELECTRICAL CHARACTERISTICS (@Ta=25 Per Leg, Unless otherwise noted)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	100	-	-	V
Breakdown Voltage Temperature Coefficient	BV_{DSS}/T_j	$I_D=5mA$, Referenced to 25	-	0.17	-	V/
Gate Threshold Voltage	V_{th}	$V_{DS}=V_{GS}, I_D=250\mu A$	3.0	-	5.0	V
Drain to Source Leakage Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	20	μA
		$V_{DS}=100V, V_{GS}=0V, T_j=125$	-	-	250	
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=15V$, with protection circuit	-	-	10	mA
		$V_{GS}=-15V$, with protection circuit	-	-	-10	mA
Drain to Source ON Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=540A$	-	0.92	2	m
Dynamic						
Total Gate Charge	Q_g	$I_D=540A, V_{DS}=50V, V_{GS}=10V$	-	TBD	-	nC
Gate to Source Charge	Q_{gs}		-	TBD	-	
Gate to Source Charge	Q_{gd}		-	TBD	-	
Turn On Delay Time	$t_{d(on)}$		-	TBD	-	ns
Rise Time	t_r		-	TBD	-	
Turn Off Delay Time	$t_{d(off)}$		-	TBD	-	
Fall Time	t_f		-	TBD	-	
Input Capacitance	C_{iss}		-	TBD	-	
Output Capacitance	C_{oss}		-	TBD	-	
Reverse Transfer Capacitance	C_{rss}		-	TBD	-	
Source-Drain Diode Ratings						
Continuous Source Current	I_S		-	-	540	A
Pulsed Source Current	I_{SP}		-	-	3000	
Diode Forward Voltage	V_{SD}	$I_D=540A, V_{GS}=0V$	-	1.1	-	V
Reverse Recovery Time	t_{rr}		-	TBD	-	ns
Reverse Recovery Charge	Q_{rr}		-	TBD	-	nC

TEMPERATURE SENSOR (NTC Thermistor)

PARAMETER	CONDITION	VALUE	UNITS
B Constant	25/85	3450	K
B Constant Tolerance	-	± 3	%
Resistance	-	4.7	K
Resistance Tolerance	-	± 5	%
Operating Temperature Range	-	-40 ~ +125	

Fig 1. Saturation Voltage Characteristics

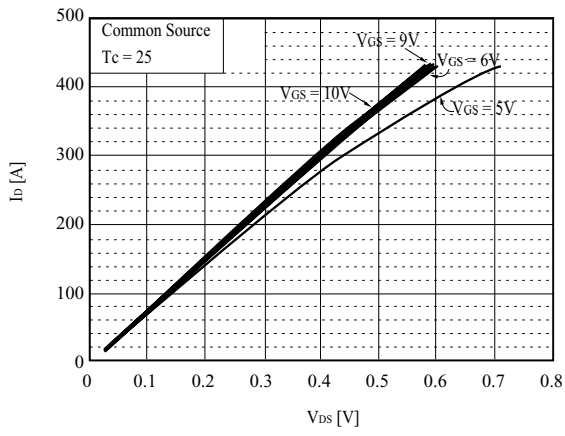


Fig 2. Forward Characteristics of Inverse Diode

