

150V/400A

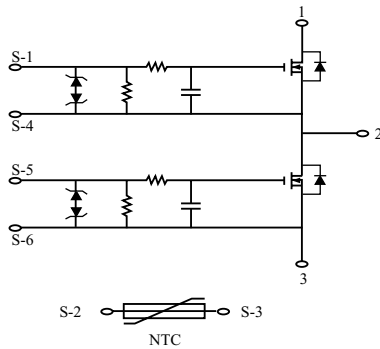
2-PACK MOSFET MODULE (Half - Bridge)

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

APPLICATION

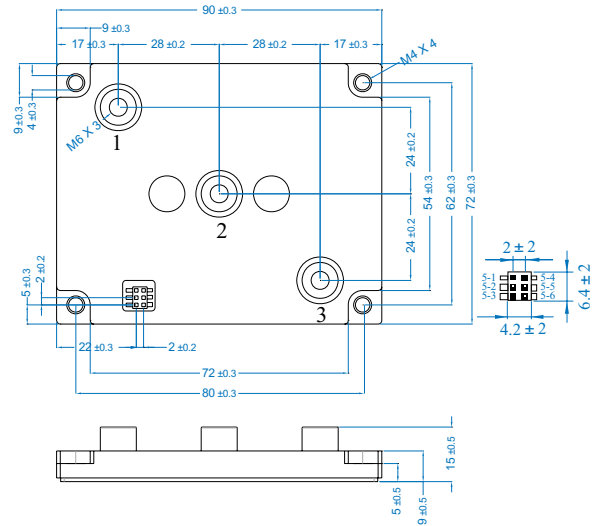
- Motor Control
- Electric Vehicle, Automotive etc.

INTERNAL CIRCUIT



OUTLINE DRAWING

Unit : mm



MAXIMUM RATING (@Ta=25 Per Leg)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-to Source Breakdown Voltage	V_{DSS}	150	V
Gate Threshold Voltage	V_{th}	± 15	V
Continuous Drain Current	I_C	@T _C =25	450
		@T _C =100	300
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	6	N.m

FMMT312

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	150	-	-	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}	$V_{DS}=150V, V_{GS}=0V$	-	-	20	μA
		$V_{DS}=150V, V_{GS}=0V, T_j=125$	-	-	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	$R_{DS(ON)}$	$V_{GS}=10V, I_D=400A$	-	2.0	3.0	m
Dynamic						
Forward Transconductance	g_{fs}	$V_{DS}=50V, I_D=400A$	-	TBD	-	S
Total Gate Charge	Q_g	$I_D=400A, V_{DS}=75V, V_{GS}=10V$	-	TBD	-	nC
Gate to Source Charge	Q_{gs}		-	TBD	-	
Gate to Source Charge	Q_{gd}		-	TBD	-	
Turn On Delay Time	$t_{d(on)}$		-	TBD	-	
Rise Time	t_r	-	TBD	-		
Turn Off Delay Time	$t_{d(off)}$	-	TBD	-		
Fall Time	t_f	-	TBD	-		
Input Capacitance	C_{iss}		-	TBD	-	pF
Output Capacitance	C_{oss}		-	TBD	-	
Reverse Transfer Capacitance	C_{rss}		-	TBD	-	
Source-Drain Diode Ratings						
Continuous Source Current	I_S		-	-	450	A
Pulsed Source Current	I_{SP}		-	-	2500	
Diode Forward Voltage	V_{SD}	$I_D=400A, V_{GS}=0V$	-	-	1.3	V
Reverse Recovery Time	t_{rr}		-	TBD	-	ns
Reverse Recovery Charge	Q_{rr}		-	TBD	-	nC

Fig 1. Saturation Voltage Characteristics

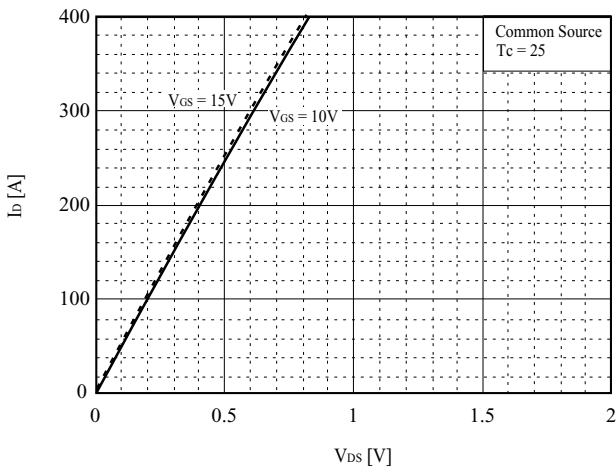


Fig 2. Saturation Voltage Characteristics

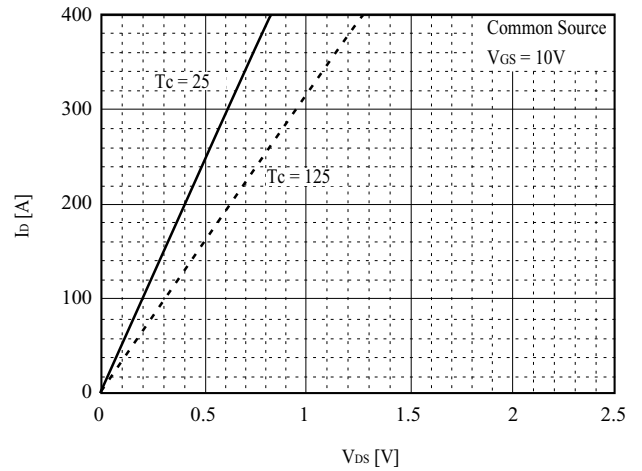


Fig 3. Forward Characteristics of Inverse Diode

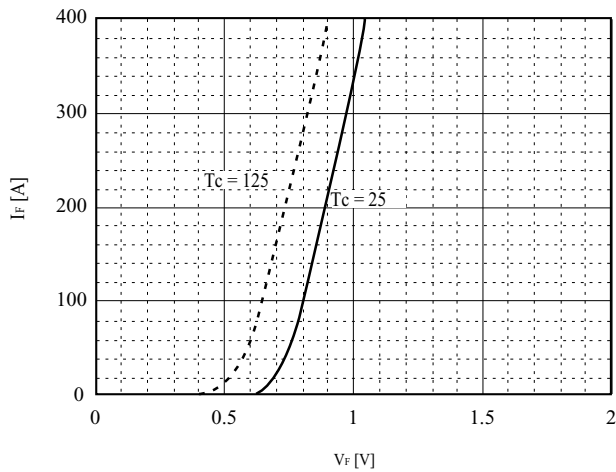


Fig 4. $R_{DS(ON)}$ Characteristics

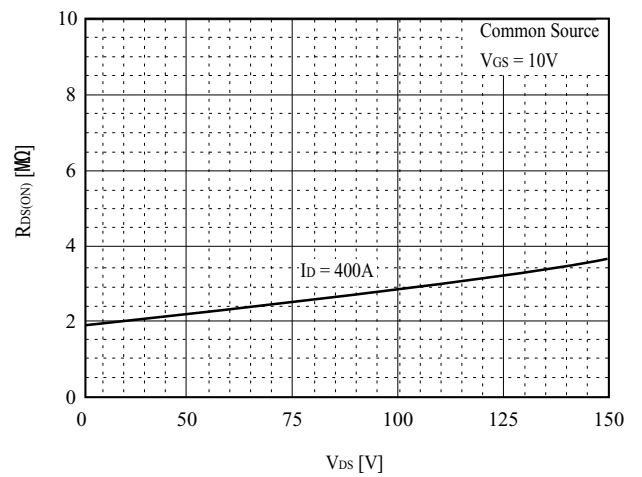


Fig 5. Safe Operation Area

