GMF25P06

P-channel -60V, -25A, TO-220F Power MOSFET 功率場效應管

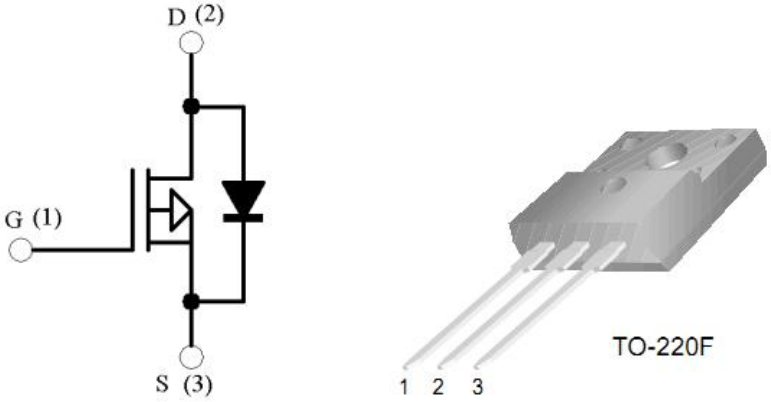
■Features 特點

Ultra low on-resistance 超低導通電阻
Fast switching 快速開關能力

■Applications 應用

Switch mode power supplies 開關電源
DC-DC converters and UPS 直流直流变换和不间断電源
PWM motor controls 脉宽调制電机控制
General switching applications 普通開關應用

■Internal Schematic Diagram 內部結構



■Absolute Maximum Ratings 最大額定值

Characteristic 特性參數	Symbol 符號	Rat 額定值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	BV_{DSS}	-60	V
Gate- Source Voltage 柵極-源極電壓	V_{GS}	±20	V
Drain Current (continuous)漏極電流-連續	I_D（at TC = 25°C）	-25	A
Drain Current (pulsed)漏極電流-脉冲	I_{DM}	-100	A
Total Device Dissipation 總耗散功率	P_{TOT}(at TC = 25°C)	40	W
Thermal Resistance Junction-Ambient 熱阻	$R_{\Theta JA}$	62.5	℃/W
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150	℃

■Electrical Characteristics 電特性

(T_A=25℃ unless otherwise noted 如無特殊說明，溫度爲 25℃)

Characteristic 特性參數	Symbol 符號	Min 最小值	Typ 典型值	Max 最大值	Unit 單位
Drain-Source Breakdown Voltage 漏極-源極擊穿電壓(I_D =-1mA,V_{GS}=0V)	BV_{DSS}	-60	—	—	V
Gate Threshold Voltage 柵極開启電壓(I_D =-1mA,V_{GS}= V_{DS})	$V_{GS(th)}$	-1	-1.6	-2.5	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V_{GS}=0V, V_{DS}= -60V)	I_{DSS}	—	—	-500	uA
Gate Body Leakage 柵極漏電流(V_{GS}=±20V, V_{DS}=0V)	I_{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance 静态漏源導通電阻(I_D=-12.5A,V_{GS}=-10V) (I_D=-12.5A,V_{GS}=-4V)	$R_{DS(ON)}$	—	45 80	60 110	mΩ
Source Drain Current 源極-漏極電流	I_{SD}	—	—	-25	A
Diode Forward Voltage Drop 内附二極管正向壓降(I_{SD}=-25A,V_{GS}=0V)	V_{SD}	—	—	-3	V
Input Capacitance 輸入電容 (V_{GS}=0V, V_{DS}=-25V,f=1MHz)	C_{ISS}	—	2000	—	pF
Common Source Output Capacitance 共源輸出電容(V_{GS}=0V, V_{DS}=-25V,f=1MHz)	C_{OSS}	—	700	—	pF
Gate Charge 柵極電荷密度 (V_{DS}=-15V, I_D=-1A, V_{GS}=-10V)	Q_g	—	7	—	nC
Turn-On Delay Time 開启延迟時間 (V_{DS}=-30V, I_D=-25A, R_{GEN}=10Ω,V_{GS}=-10V)	$t_{d(on)}$	—	15	—	ns
Turn-On Rise Time 開启上升時間 (V_{DS}=-30V, I_D=-25A, R_{GEN}=10Ω,V_{GS}=-10V)	t_r	—	80	—	ns
Turn-Off Delay Time 關断延迟時間 (V_{DS}=-30V, I_D=-25A, R_{GEN}=10Ω,V_{GS}=-10V)	$t_{d(off)}$	—	190	—	ns
Turn-On Fall Time 開启下降時間 (V_{DS}=-30V, I_D=-25A, R_{GEN}=10Ω,V_{GS}=-10V)	t_f	—	90	—	ns

■TYPICAL CHARACTERISTIC CURVE 典型特性曲线

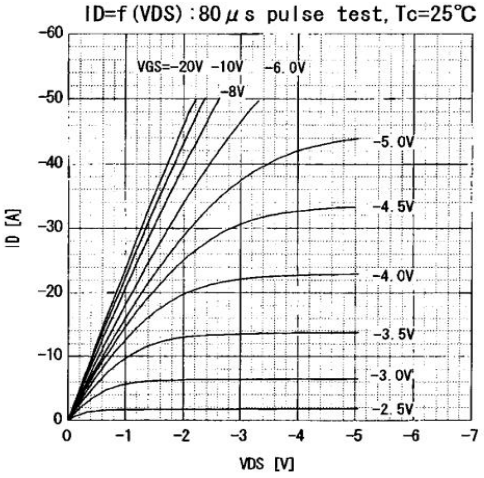


Figure 1.Output Characteristics

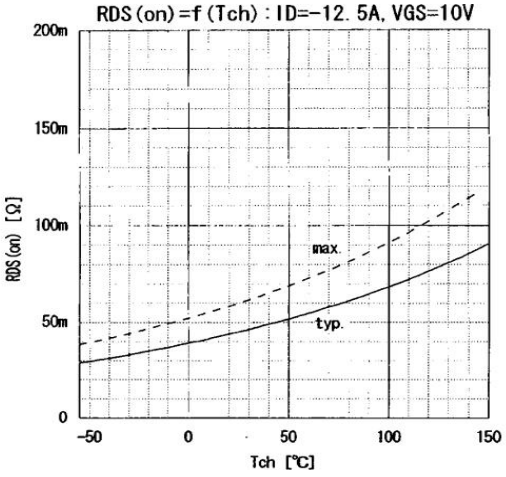


Figure2.On-Resistance Variation with Temperature

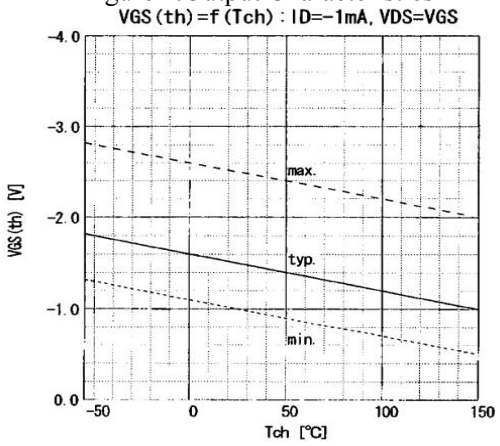


Figure3.Gate Threshold Variation with Temperatures

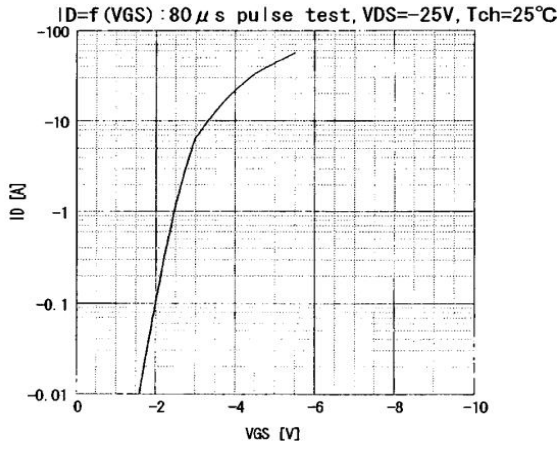


Figure4.Transfer Characteristics

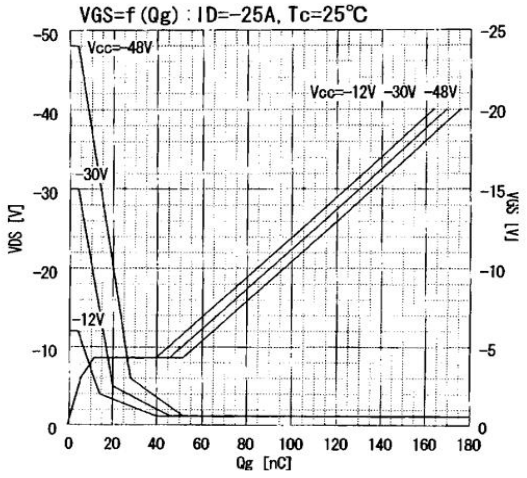


Figure5. Gate charge Characteristics

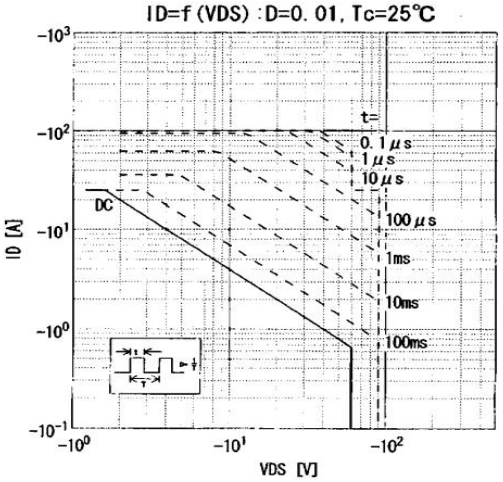


Figure6.Maximum Safe Operating Area

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■TO-220F 外形封裝尺寸(DIMENSION

單位(UNIT)：mm