桂林斯壮桂微電子有限責任公司
GSME Guilin Strong Micro-Electronics Co.,Ltd.

P-channel -60V, -13A, TO-251   Power MOSFET 功率場效應管

■Features 特點
Ultra low on-resistance 超低導通電阻
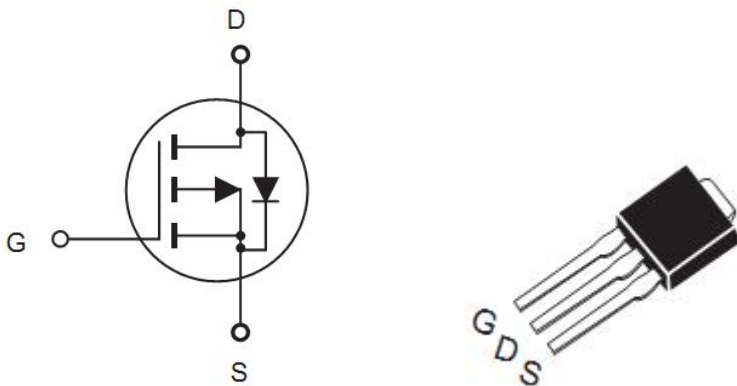Low gate charge 低柵電荷密度
Fast switching 快速開關能力

■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 最大额定值

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）	-13	A
Drain Current (pulsed)漏極電流-脉冲	I_{DM}	-52	A
Total Device Dissipation 總耗散功率	P_{TOT}(at TC = 25°C)	42	W
Thermal Resistance Junction-Ambient 熱阻	$R_{\theta JA}$	50	℃/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，溫度為 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 =-250uA,V_{GS}=0V)	BV_{DSS}	-60	—	—	V
Gate Threshold Voltage 柵極開启電壓(I_D =-250uA,V_{GS}= V_{DS})	$V_{GS(th)}$	-1	-2	-3	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V_{GS}=0V, V_{DS}= -48V)	I_{DSS}	—	—	-1	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=-9A,V_{GS}=-10V) (I_D=-7A,V_{GS}=-4.5V)	$R_{DS(ON)}$	—	105 140	125 175	mΩ
Source Drain Current 源極-漏極電流	I_{SD}	—	—	-14	A
Diode Forward Voltage Drop 內附二極管正向壓降(I_{SD}=-14A,V_{GS}=0V)	V_{SD}	—	—	-2	V
Input Capacitance 輸入電容 (V_{GS}=0V, V_{DS}=-30V,f=1MHz)	C_{ISS}	—	615	—	pF
Common Source Output Capacitance 共源輸出電容(V_{GS}=0V, V_{DS}=-30V,f=1MHz)	C_{OSS}	—	140	—	pF
Total Gate Charge 總柵極電荷密度 (V_{DS}=-30V, I_D=-3.7A, V_{GS}=-10V)	Q_g	—	5	—	nC
Gate Source Charge 柵源電荷密度 (V_{DS}=-30V, I_D=-3.7A, V_{GS}=-10V)	Q_{gs}	—	2	—	nC
Gate Drain Charge 柵漏電荷密度 (V_{DS}=-30V, I_D=-3.7A, V_{GS}=-10V)	Q_{gd}	—	4	—	nC
Turn-On Delay Time 開启延遲時間 (V_{DS}=-30V, I_D=-1A, R_{GEN}=6Ω,V_{GS}=-10V)	$t_{d(on)}$	—	11	—	ns
Turn-On Rise Time 開启上升時間 (V_{DS}=-30V, I_D=-1A, R_{GEN}=6Ω,V_{GS}=-10V)	t_r	—	4.5	—	ns
Turn-Off Delay Time 關斷延遲時間 (V_{DS}=-30V, I_D=-1A, R_{GEN}=6Ω,V_{GS}=-10V)	$t_{d(off)}$	—	50	—	ns
Turn-On Fall Time 開启下降時間 (V_{DS}=-30V, I_D=-1A, R_{GEN}=6Ω,V_{GS}=-10V)	t_f	—	15	—	ns

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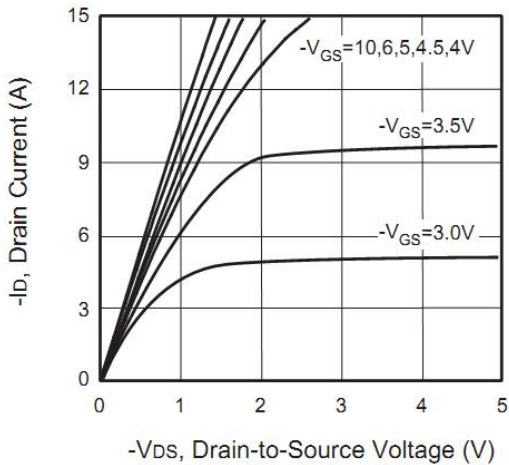
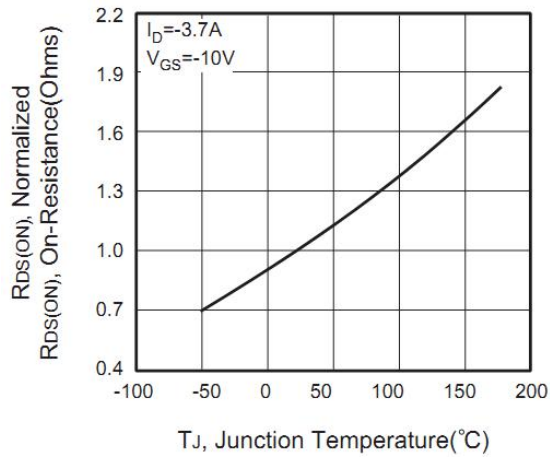■ **TYPICAL CHARACTERISTIC CURVE** 典型特性曲线

Figure 1.Output Characteristics
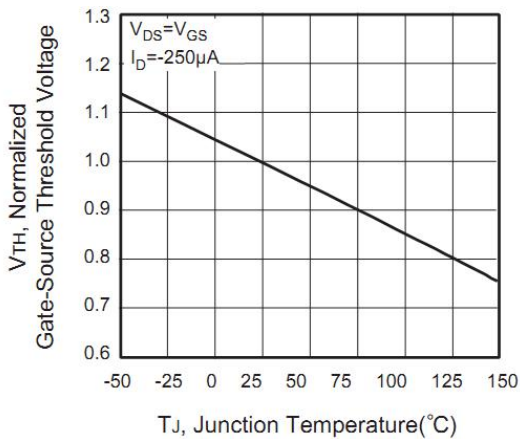
Figure2.On-Resistance Variation with Temperature
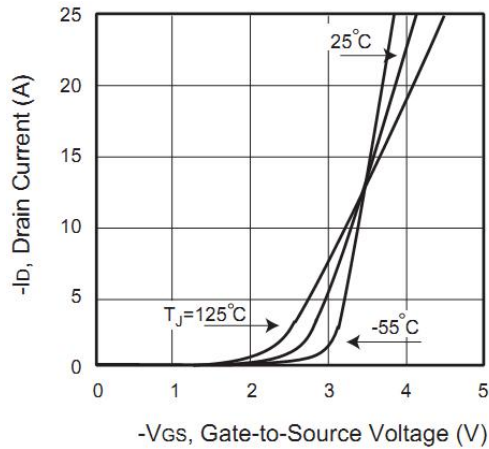
Figure3.Gate Threshold Variation with Temperatures
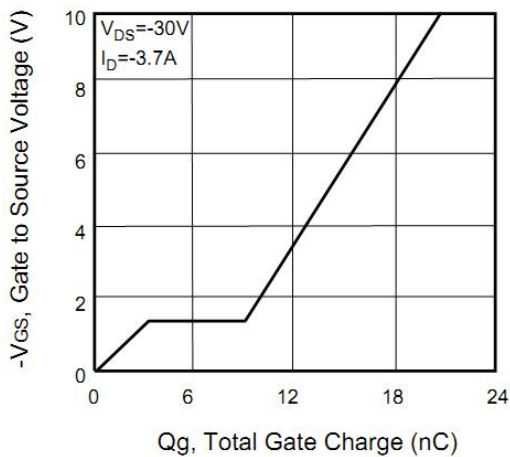
Figure4. Transfer Characteristics
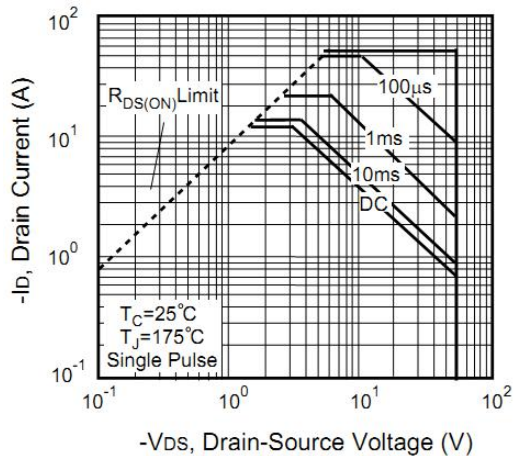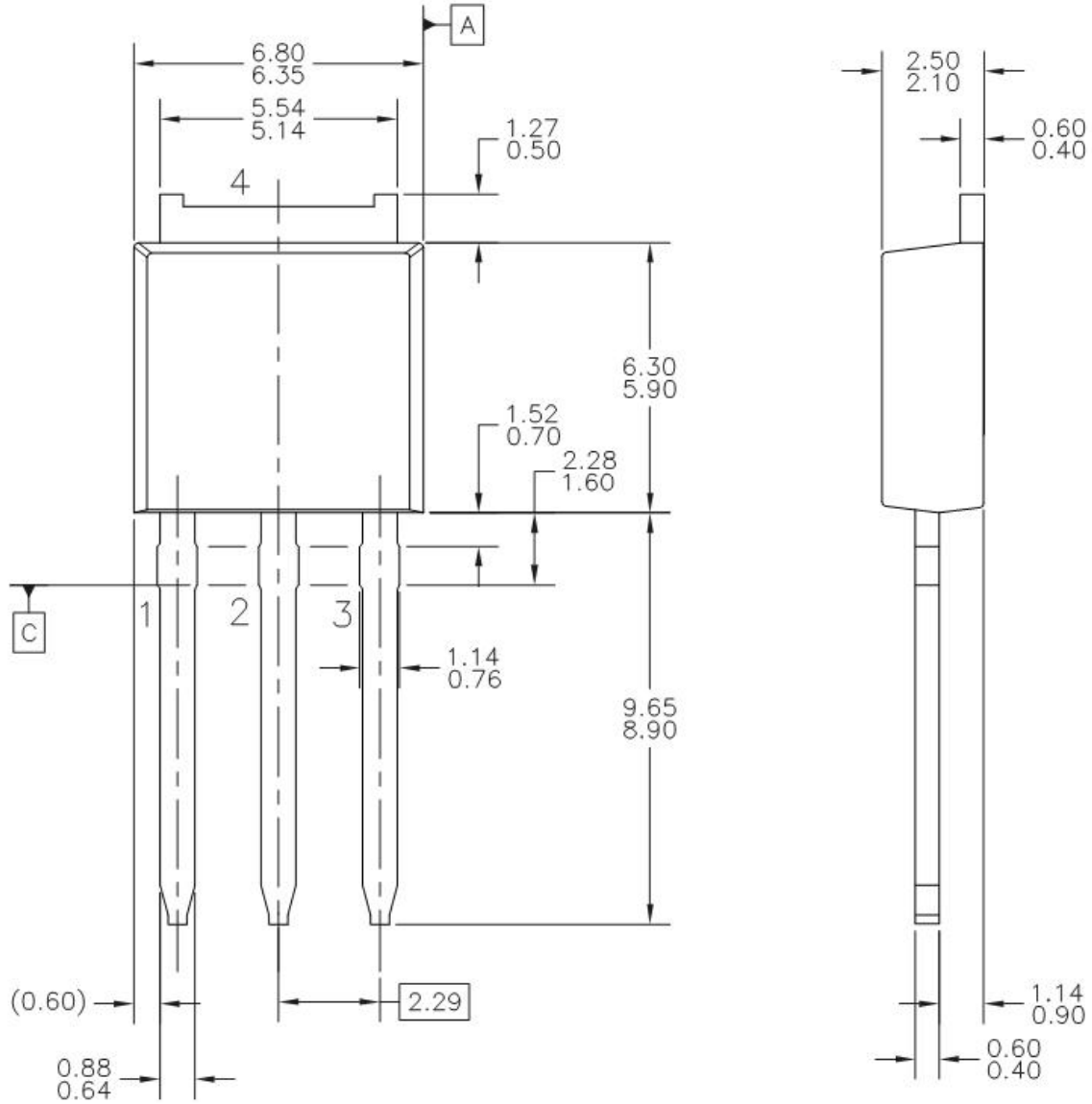
Figure5. Gate charge VS. Gate-source Voltage

Figure6.Maximum Safe Operating Area

■TO-251 DIMENSION 外形封裝尺寸

單位(UNIT)：mm

PART NO.

LOT NO.

MARK