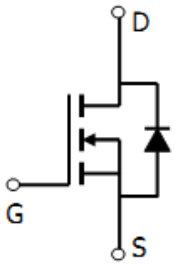
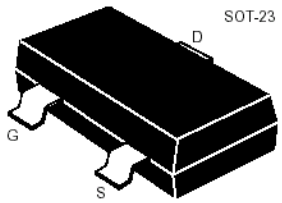
SOT-23 場效應晶體管(SOT-23 Field Effect Transistors)





N-Channel Enhancement-Mode MOS FETs

N 沟道增强型 MOS 场效应管

■MAXIMUM RATINGS 最大額定值

Characteristic 特性參數	Symbol 符號	Max 最大值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	BV_{DSS}	40	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	4	A
Drain Current (pulsed) 漏極電流-脉冲	I_{DM}	16	A
Total Device Dissipation 總耗散功率 T_A=25℃環境溫度爲 25℃	P_D	1040	mW
Junction 結溫	T_J	150	℃
Storage Temperature 儲存溫度	T_{stg}	-55to+150	℃

■DEVICE MARKING 打標

GM2318S=C18S

■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 =250uA,V_{GS}=0V)	BV_{DSS}	40	—	—	V
Gate Threshold Voltage 柵極開启電壓(I_D = 250uA,V_{GS}= V_{DS})	$V_{GS(th)}$	1	—	3	V
Diode Forward Voltage Drop 内附二極管正向壓降(I_S= 1A,V_{GS}=0V)	V_{SD}	—	0.8	1.2	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V_{GS}=0V, V_{DS}= 40V)	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= 4A,V_{GS}=10V)	$R_{DS(ON)}$	—	32	40	mΩ
Static Drain-Source On-State Resistance 静态漏源導通電阻(I_D= 3.5A,V_{GS}=4.5V)	$R_{DS(ON)}$	—	50	65	mΩ
Input Capacitance 輸入電容 (V_{GS}=0V, V_{DS}= 20V,f=1MHz)	C_{ISS}	—	560	—	pF
Output Capacitance 輸出電容 (V_{GS}=0V, V_{DS}= 20V,f=1MHz)	C_{OSS}	—	70	—	pF
Turn-ON Time 开启時間 (V_{DS}= 20V, V_{GS}= 10V, R_{GEN}=1Ω)	$t_{(on)}$	—	12	—	ns
Turn-OFF Time 关断時間 (V_{DS}= 20V, V_{GS}= 10V, R_{GEN}=1Ω)	$t_{(off)}$	—	37	—	ns

Pulse Width≤300 μs; Duty Cycle≤2.0%

■TYPICAL CHARACTERISTIC CURVE
典型特性曲线

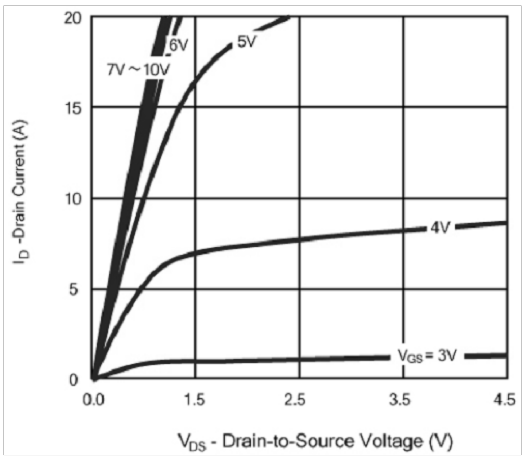


Figure 1: Output Characteristics

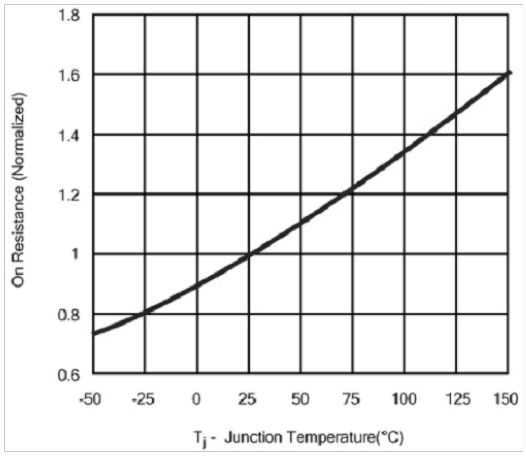


Figure 2: On-Resistance vs.Junction Temperature

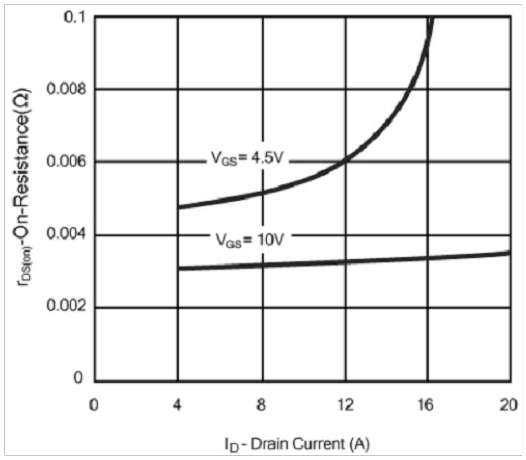


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

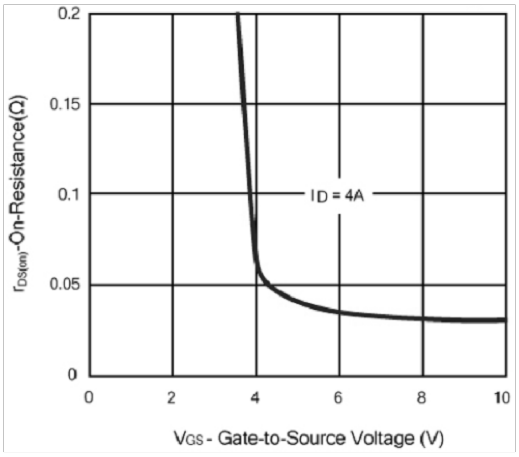


Figure 4: On-Resistance vs. Gate-Source Voltage

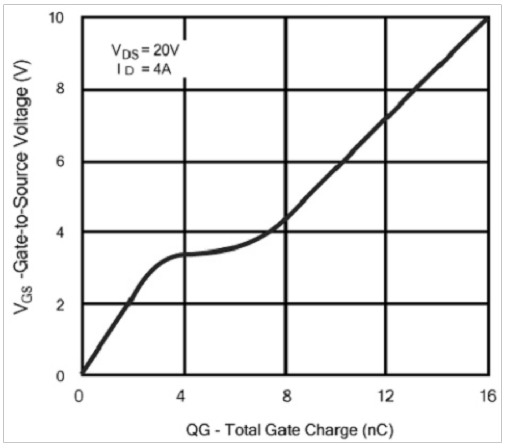


Figure 5: Gate-Charge Characteristics

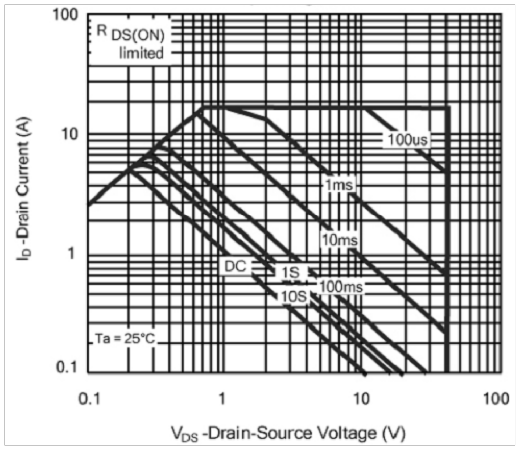


Figure 6: Safe Operating Area