

N-channel 100V, 1A, SOT-23 Power MOSFET 功率场效应管
■ Features 特點

Low on-resistance and maximum DC current capability 低導通電阻和最大直流電流能力

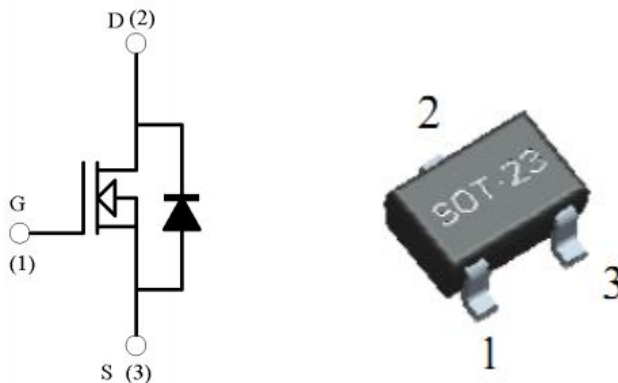
Super high density cell design 超高元胞密度設計

 $R_{DS(ON)TYP} 520m\Omega @ V_{GS}=10V$
 $R_{DS(ON)TYP} 550m\Omega @ V_{GS}=4.5V$
■ Applications 应用

Boost Converter 升壓轉換

Synchronous Rectifier 同步整流

LED Backlighting LED 背光驅動

■ Internal Schematic Diagram 内部结构

■ Absolute Maximum Ratings 最大额定值

Characteristic 特性參數	Symbol 符號	Rat 额定值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	BV_{DSS}	100	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 $T_C = 25^\circ C$)	1	A
Drain Current (pulsed) 漏極電流-脉冲	I_{DM}	4	A
Total Device Dissipation 總耗散功率	P_{TOT} (at $T_C = 25^\circ C$)	1.4	W
Thermal Resistance Junction-Ambient 熱阻	$R_{\theta JA}$	100	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150	$^\circ C$

Electrical Characteristics 電特性

 (T_A=25°C unless otherwise noted 如無特殊說明，溫度為 25°C)

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}	100	—	—	V
Gate Threshold Voltage 柵極開啓電壓(I _D =250uA, V _{GS} =V _{DS})	V _{GS(th)}	1	1.5	3	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V _{GS} =0V, V _{DS} =80V)	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 靜態漏源導通電阻(I _D =1A, V _{GS} =10V) (I _D =0.8A, V _{GS} =4.5V)	R _{DS(ON)}	—	520 550	630 720	mΩ
Source Drain Current 源極-漏極電流	I _{SD}	—	—	1	A
Diode Forward Voltage Drop 內附二極管正向壓降(I _{SD} =1A, V _{GS} =0V)	V _{SD}	—	—	1.2	V
Input Capacitance 輸入電容 (V _{GS} =0V, V _{DS} =50V, f=1MHz)	C _{ISS}	—	100	—	pF
Common Source Output Capacitance 共源輸出電容(V _{GS} =0V, V _{DS} =50V, f=1MHz)	C _{OSS}	—	13	—	pF
Gate Source Charge 柵源電荷密度 (V _{DS} =50V, I _D =1A, V _{GS} =10V)	Q _{gs}	—	0.4	—	nC
Gate Drain Charge 柵漏電荷密度 (V _{DS} =50V, I _D =1A, V _{GS} =10V)	Q _{gd}	—	0.8	—	nC
Turn-On Delay Time 開啓延遲時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _{d(on)}	—	5	—	ns
Turn-On Rise Time 開啓上升時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _r	—	4	—	ns
Turn-Off Delay Time 關斷延遲時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _{d(off)}	—	12	—	ns
Turn-On Fall Time 開啓下降時間 (V _{DS} =50V, I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _f	—	5	—	ns



■ TYPICAL CHARACTERISTIC CURVE 典型特性曲线

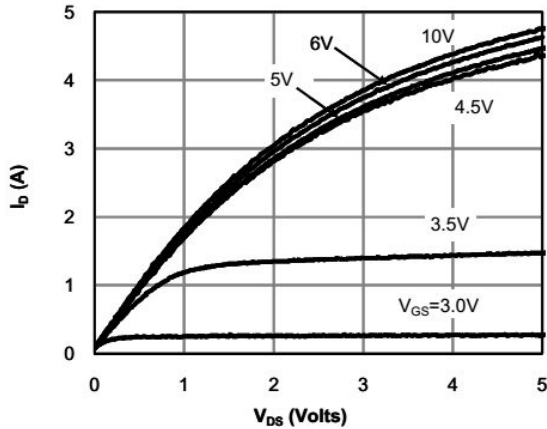


Figure 1. Output Characteristics

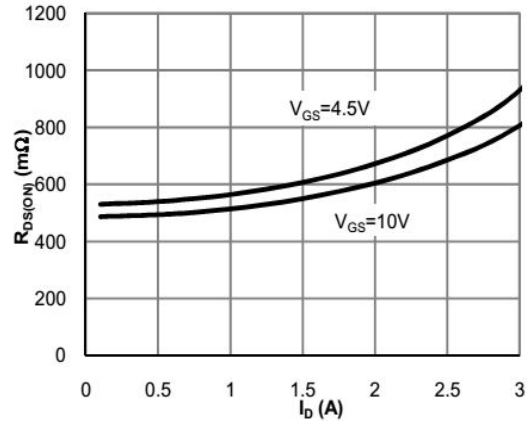


Figure 2. On-Resistance Characteristics

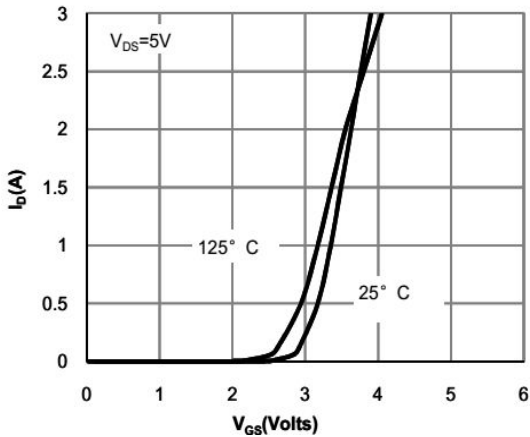


Figure 3. Transfer Characteristics

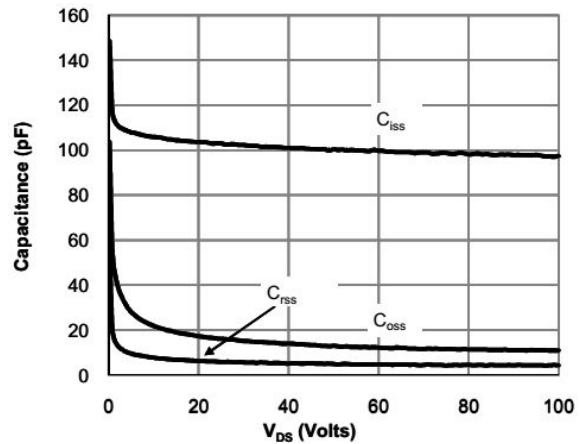


Figure 4. Capacitance Characteristics

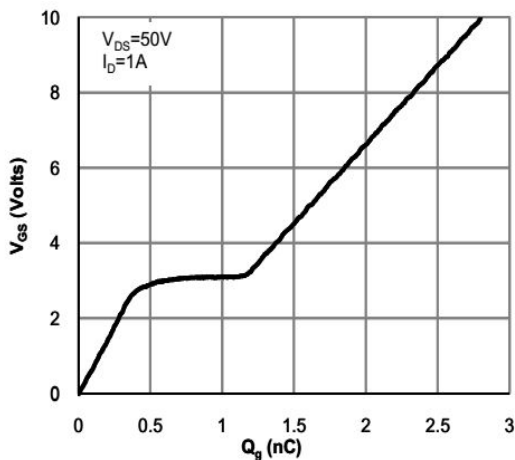


Figure 5. Gate charge

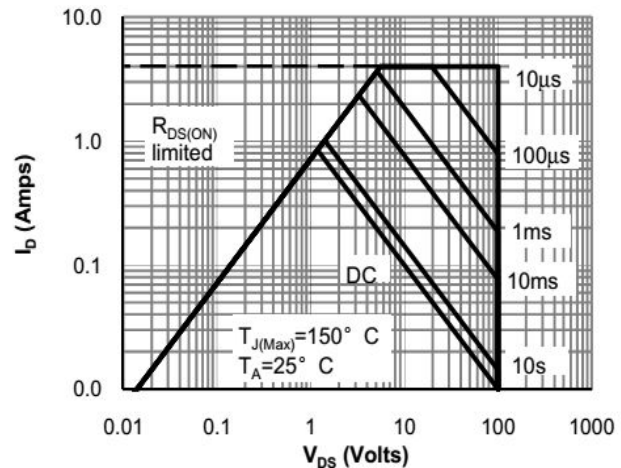


Figure 6. Maximum V_{DS} Safe Operating Area