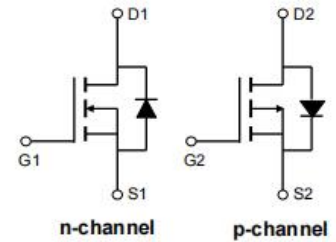
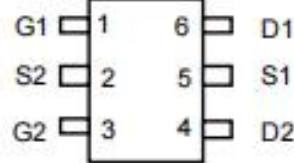
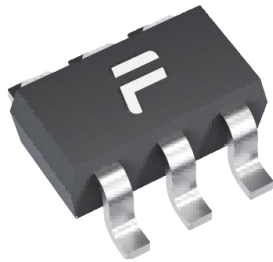


**SOT-23-6L 20/-20V N+P Channel Enhancement 双沟道增强型
MOS Field Effect Transistor 场效应管**



■ **Absolute Maximum Ratings 最大额定值**

Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
Drain-Source Voltage 漏极-源极电压	BV_{DSS}	20/-20	V
Gate- Source Voltage 栅极-源极电压	V_{GS}	$\pm 10/\pm 12$	V
Drain Current (continuous)漏极电流-连续	I_D (at $T_A = 25^\circ C$)	3.5/-3.5	A
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	13/-13	A
Total Device Dissipation 总耗散功率	P_D (at $T_A = 25^\circ C$)	700/900	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	178/140	$^\circ C/W$
Junction/Storage Temperature 结温/储存温度	T_J, T_{stg}	-55~150	$^\circ C$

■ **Device Marking 产品字标**

FS6604=6604

Electrical Characteristics 电特性(N)

 (T_A=25℃ unless otherwise noted 如无特殊说明, 温度为 25℃)

Characteristic 特性参数	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Drain-Source Breakdown Voltage 漏极-源极击穿电压(I _D =250uA, V _{GS} =0V)	BV _{DSS}	20	—	—	V
Gate Threshold Voltage 栅极开启电压(I _D =250uA, V _{GS} =V _{DS})	V _{GS(th)}	0.55	0.78	1.1	V
Zero Gate Voltage Drain Current 零栅压漏极电流(V _{GS} =0V, V _{DS} =20V)	I _{DSS}	—	—	1	uA
Gate Body Leakage 栅极漏电流(V _{GS} =±10V, V _{DS} =0V)	I _{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance 静态漏源导通电阻(I _D =3.5A, V _{GS} =4.5V) (I _D =2A, V _{GS} =2.5V)	R _{DS(ON)}	—	40 55	52 80	mΩ
Diode Forward Voltage Drop 内附二极管正向压降(I _{SD} =3.5A, V _{GS} =0V)	V _{SD}	—	—	1.2	V
Input Capacitance 输入电容 (V _{GS} =0V, V _{DS} =10V, f=1MHz)	C _{ISS}	—	220	—	pF
Common Source Output Capacitance 共源输出电容(V _{GS} =0V, V _{DS} =10V, f=1MHz)	C _{OSS}	—	34	—	pF
Reverse Transfer Capacitance 反馈电容(V _{GS} =0V, V _{DS} =10V, f=1MHz)	C _{RSS}	—	26	—	pF
Total Gate Charge 栅极电荷密度 (V _{DS} =10V, I _D =3A, V _{GS} =4.5V)	Q _g	—	3.6	—	nC
Gate Source Charge 栅源电荷密度 (V _{DS} =10V, I _D =3A, V _{GS} =4.5V)	Q _{gs}	—	0.9	—	nC
Gate Drain Charge 栅漏电荷密度 (V _{DS} =10V, I _D =3A, V _{GS} =4.5V)	Q _{gd}	—	0.8	—	nC
Turn-ON Delay Time 开启延迟时间 (V _{DS} =10V I _D =3A, R _{GEN} =3Ω, V _{GS} =4.5V)	t _{d(on)}	—	8	—	ns
Turn-ON Rise Time 开启上升时间 (V _{DS} =10V I _D =3A, R _{GEN} =3Ω, V _{GS} =4.5V)	t _r	—	58	—	ns
Turn-OFF Delay Time 关断延迟时间 (V _{DS} =10V I _D =3A, R _{GEN} =3Ω, V _{GS} =4.5V)	t _{d(off)}	—	15	—	ns
Turn-OFF Fall Time 关断下降时间 (V _{DS} =10V I _D =3A, R _{GEN} =3Ω, V _{GS} =4.5V)	t _f	—	53	—	ns

Electrical Characteristics 电特性(P)

 (T_A=25°C unless otherwise noted 如无特殊说明, 温度为 25°C)

Characteristic 特性参数	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Drain-Source Breakdown Voltage 漏极-源极击穿电压(I _D = -250uA, V _{GS} =0V)	BV _{DSS}	-20	—	—	V
Gate Threshold Voltage 栅极开启电压(I _D = -250uA, V _{GS} = V _{DS})	V _{GS(th)}	-0.4	-0.75	-1	V
Zero Gate Voltage Drain Current 零栅压漏极电流(V _{GS} =0V, V _{DS} = -20V)	I _{DSS}	—	—	1	uA
Gate Body Leakage 栅极漏电流(V _{GS} =±12V, V _{DS} =0V)	I _{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance 静态漏源导通电阻(I _D = -3.5A, V _{GS} = -4.5V) (I _D = -3A, V _{GS} = -2.5V)	R _{DS(ON)}	—	64 87	80 110	mΩ
Diode Forward Voltage Drop 内附二极管正向压降(I _{SD} = -3.5A, V _{GS} =0V)	V _{SD}	—	—	-1.2	V
Input Capacitance 输入电容 (V _{GS} =0V, V _{DS} = -10V, f=1MHz)	C _{ISS}	—	325	—	pF
Common Source Output Capacitance 共源输出电容(V _{GS} =0V, V _{DS} = -10V, f=1MHz)	C _{OSS}	—	63	—	pF
Reverse Transfer Capacitance 反馈电容(V _{GS} =0V, V _{DS} = -10V, f=1MHz)	C _{RSS}	—	37	—	pF
Total Gate Charge 栅极电荷密度 (V _{DS} = -10V, I _D = -2A, V _{GS} = -4.5V)	Q _g	—	3.2	—	nC
Gate Source Charge 栅源电荷密度 (V _{DS} = -10V, I _D = -2A, V _{GS} = -4.5V)	Q _{gs}	—	0.6	—	nC
Gate Drain Charge 栅漏电荷密度 (V _{DS} = -10V, I _D = -2A, V _{GS} = -4.5V)	Q _{gd}	—	0.9	—	nC
Turn-ON Delay Time 开启延迟时间 (V _{DS} = -10V I _D = -1A, R _{GEN} =2.5Ω, V _{GS} = -4.5V)	t _{d(on)}	—	11	—	ns
Turn-ON Rise Time 开启上升时间 (V _{DS} = -10V I _D = -1A, R _{GEN} =2.5Ω, V _{GS} = -4.5V)	t _r	—	5.5	—	ns
Turn-OFF Delay Time 关断延迟时间 (V _{DS} = -10V I _D = -1A, R _{GEN} =2.5Ω, V _{GS} = -4.5V)	t _{d(off)}	—	22	—	ns
Turn-OFF Fall Time 关断下降时间 (V _{DS} = -10V I _D = -1A, R _{GEN} =2.5Ω, V _{GS} = -4.5V)	t _f	—	8	—	ns

■ Typical Characteristic Curve 典型特性曲线(N)

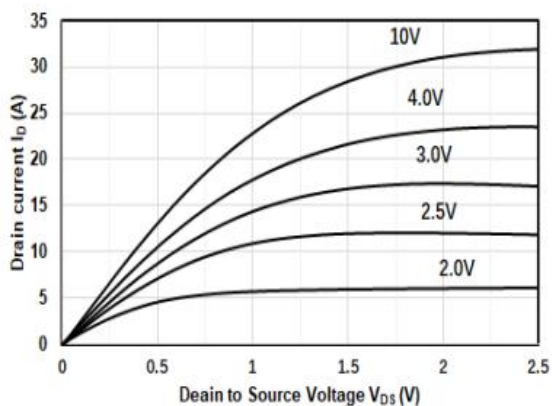


Figure 1: Output Characteristics

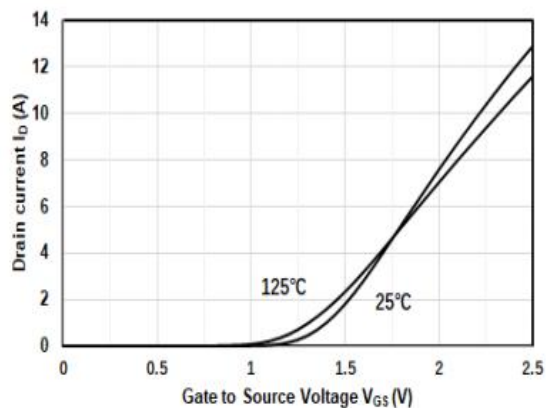


Figure 2: Transfer Characteristics

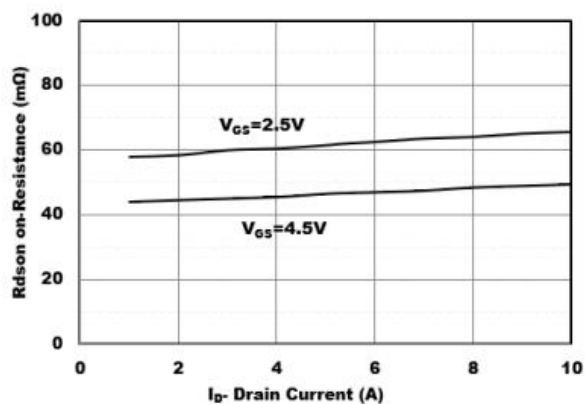


Figure 3: On-Resistance vs. Drain Current

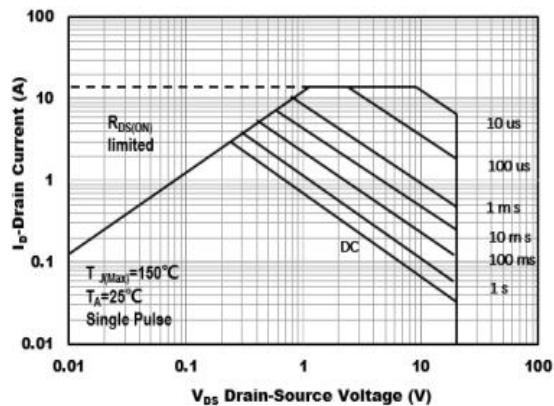


Figure 4: Safe Operating Area

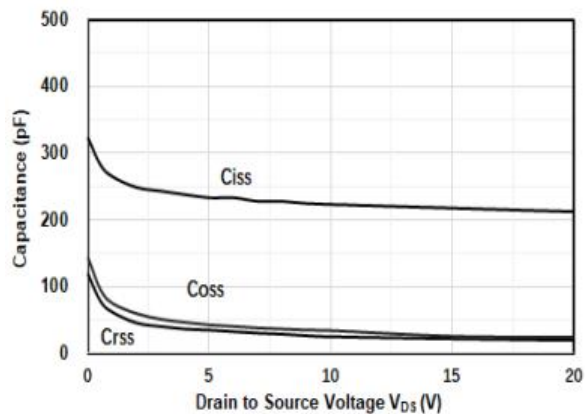


Figure 5: Capacitance Characteristics

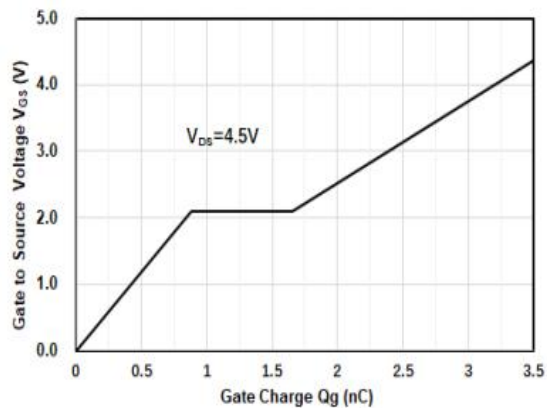


Figure 6: Gate-Charge Characteristics

■ Typical Characteristic Curve 典型特性曲线(P)

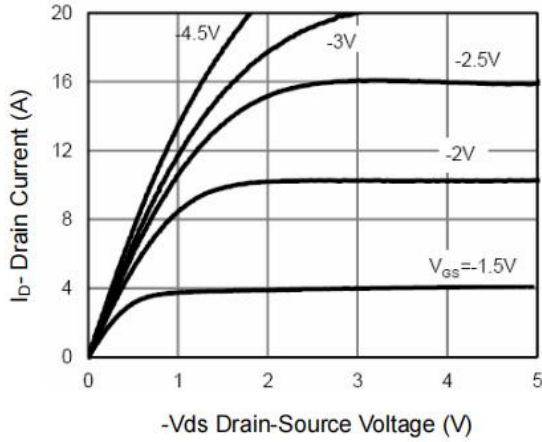


Figure 1: Output Characteristics

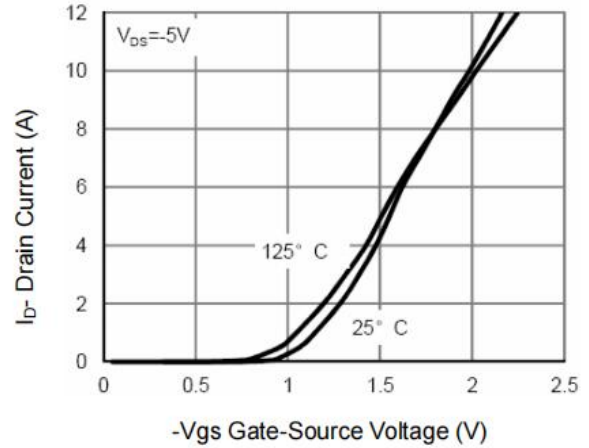


Figure 2: Transfer Characteristics

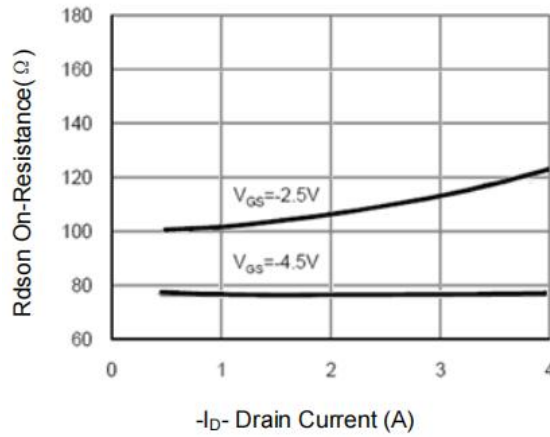


Figure 3: On-Resistance vs. Drain Current

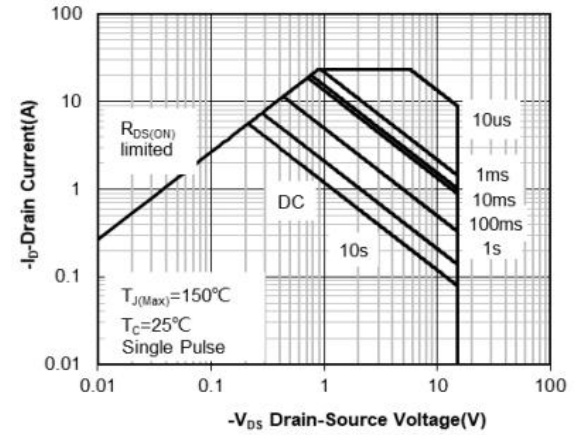


Figure 4: Safe Operating Area

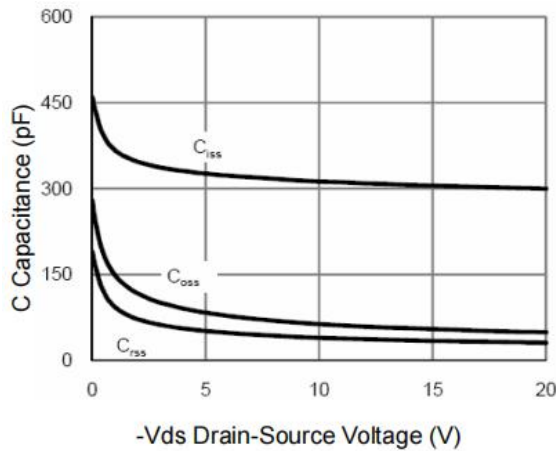


Figure 5: Capacitance Characteristics

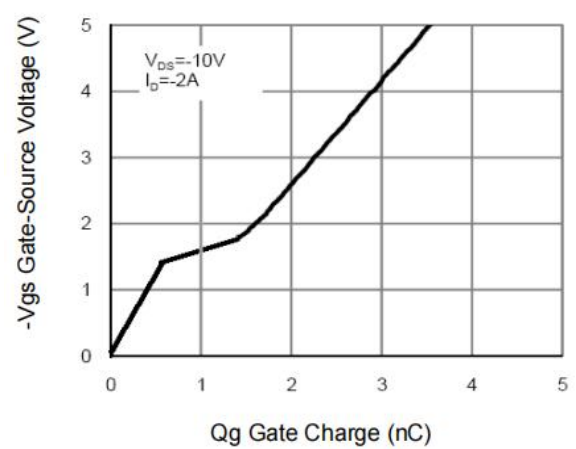
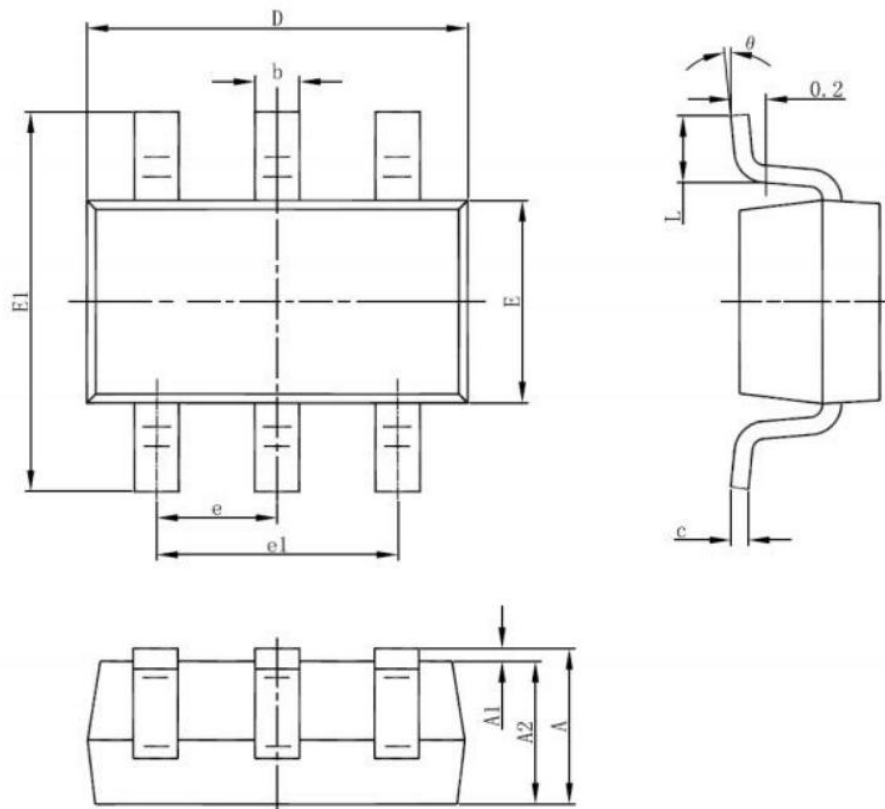


Figure 6: Gate-Charge Characteristics

■ Dimension 外形封装尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.900	1.00	0.035	0.039
e1	1.800	2.000	0.071	0.079
L	0.450	0.650	0.018	0.026
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°