

SOP-8 30V Dual N Channel Enhancement 双 N 沟道增强型 MOS Field Effect Transistor 场效应管

■Features 特点

Low on-resistance 低导通电阻

$R_{DS(ON)}=7.5m\Omega(\text{Type})@V_{GS}=10V$

$R_{DS(ON)}=11m\Omega(\text{Type})@V_{GS}=4.5V$

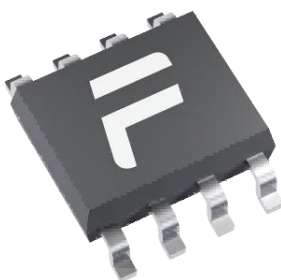
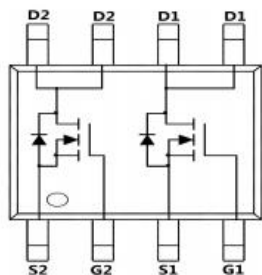
■Applications 应用

Load Switch 负载开关

DC/DC Converter 电源转换

Power Management in Note Book 笔记本电源管理

■Internal Schematic Diagram 内部结构



■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}	30	V
Gate- Source Voltage 栅极-源极电压	V_{GS}	± 20	V
Drain Current (continuous)漏极电流-连续	I_D (at $T_A = 25^\circ\text{C}$) (at $T_A = 75^\circ\text{C}$)	10 8	A
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	40	A
Total Device Dissipation 总耗散功率	P_D (at $T_A = 25^\circ\text{C}$) (at $T_A = 75^\circ\text{C}$)	1300 850	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	90	$^\circ\text{C}/\text{W}$
Avalanche Energy Single Pulse 雪崩能量	E_{AS}	20	mJ
Junction/Storage Temperature 结温/储存温度	T_J, T_{stg}	-55~150	$^\circ\text{C}$

■ Electrical Characteristics 电特性

 (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}	30	—	—	V
Gate Threshold Voltage 栅极开启电压(I _D =250uA, V _{GS} =V _{DS})	V _{GS(th)}	1.5	1.7	2.5	V
Zero Gate Voltage Drain Current 零栅压漏极电流(V _{GS} =0V, V _{DS} =30V)	I _{DSS}	—	—	1	uA
Gate Body Leakage 栅极漏电流(V _{GS} =±20V, V _{DS} =0V)	I _{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance 静态漏源导通电阻(I _D =8A, V _{GS} =10V) (I _D =6A, V _{GS} =4.5V)	R _{DS(ON)}	—	7.5 11	11 14	mΩ
Diode Forward Voltage Drop 内附二极管正向压降(I _{SD} =10A, V _{GS} =0V)	V _{SD}	—	—	1.1	V
Input Capacitance 输入电容 (V _{GS} =0V, V _{DS} =15V, f=1MHz)	C _{ISS}	—	1100	—	pF
Common Source Output Capacitance 共源输出电容(V _{GS} =0V, V _{DS} =15V, f=1MHz)	C _{OSS}	—	125	—	pF
Reverse Transfer Capacitance 反馈电容 (V _{GS} =0V, V _{DS} =15V, f=1MHz)	C _{RSS}	—	70	—	pF
Total Gate Charge 栅极电荷密度 (V _{DS} =15V, I _D =8A, V _{GS} =4.5V)	Q _g	—	15	—	nC
Gate Source Charge 栅源电荷密度 (V _{DS} =15V, I _D =8A, V _{GS} =4.5V)	Q _{gs}	—	2.5	—	nC
Gate Drain Charge 栅漏电荷密度 (V _{DS} =15V, I _D =8A, V _{GS} =4.5V)	Q _{gd}	—	3	—	nC
Turn-ON Delay Time 开启延迟时间 (V _{DS} =15V I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _{d(on)}	—	8	—	ns
Turn-ON Rise Time 开启上升时间 (V _{DS} =15V I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _r	—	10	—	ns
Turn-OFF Delay Time 关断延迟时间 (V _{DS} =15V I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _{d(off)}	—	18	—	ns
Turn-OFF Fall Time 关断下降时间 (V _{DS} =15V I _D =1A, R _{GEN} =3Ω, V _{GS} =10V)	t _f	—	6	—	ns

■ Typical Characteristic Curve 典型特性曲线

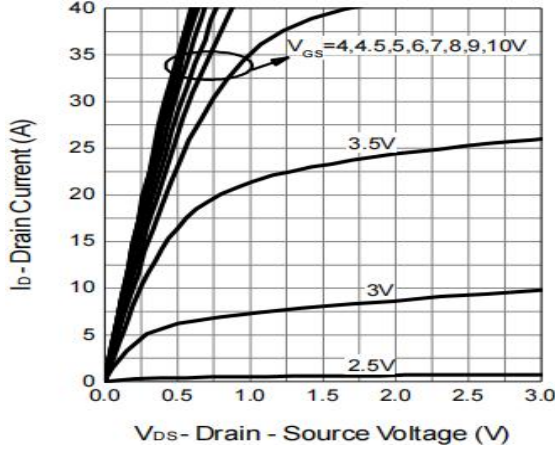


Figure 1: Output Characteristics

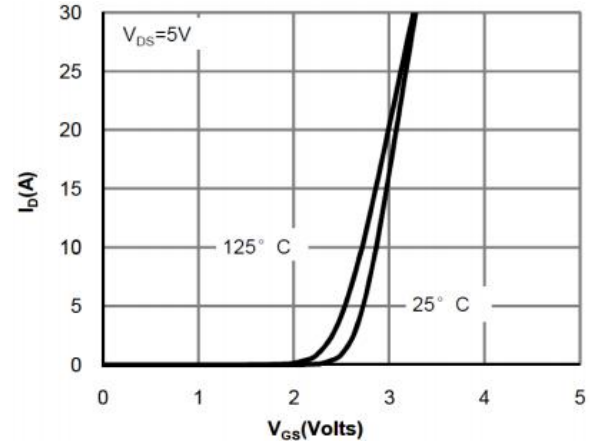


Figure 2: Transfer Characteristics

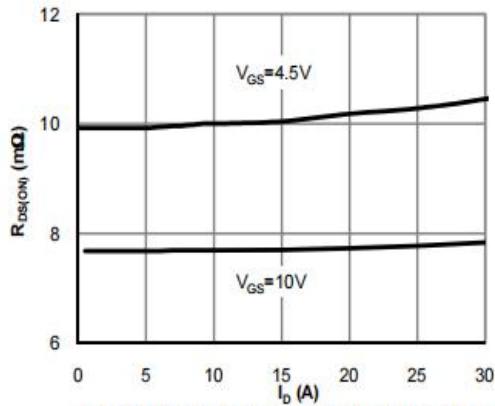


Figure 3: On-Resistance vs. Drain Current and Gate

Figure 3: On-Resistance vs. Drain Current

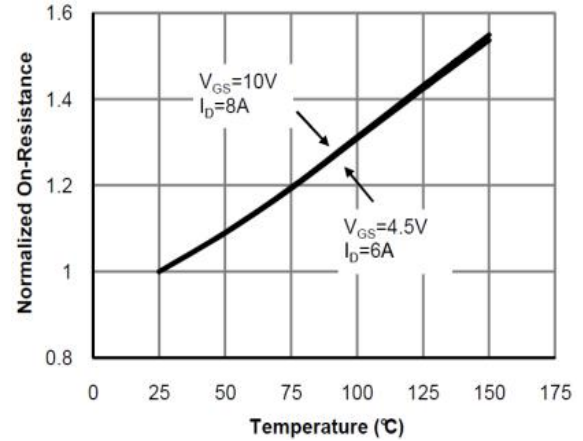


Figure 4: On-Resistance vs. Temperature

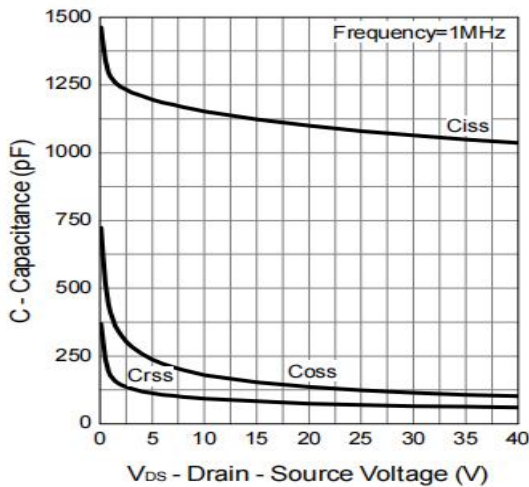


Figure 5: Capacitance Characteristics

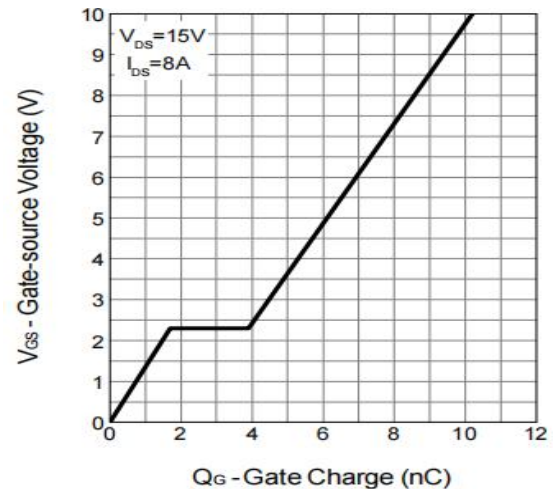


Figure 6: Gate-Charge Characteristics

■ Typical Characteristic Curve 典型特性曲线

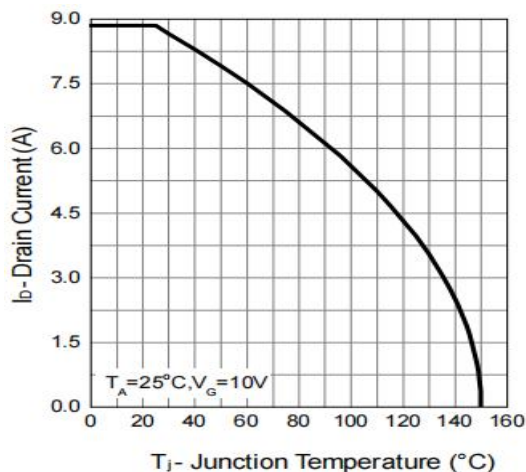


Figure 7: Drain Current vs. Temperature

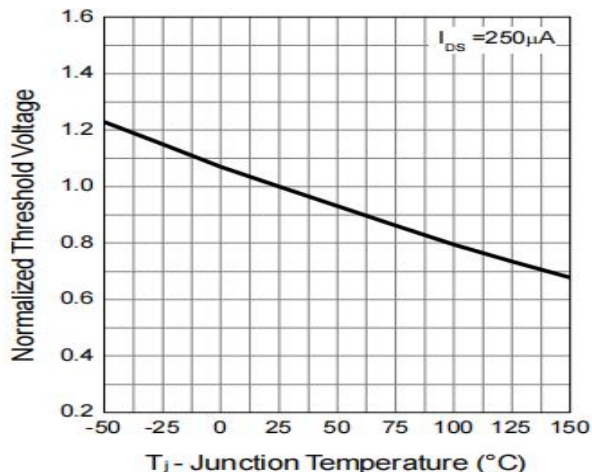


Figure 8: Threshold Voltage vs. Temperature

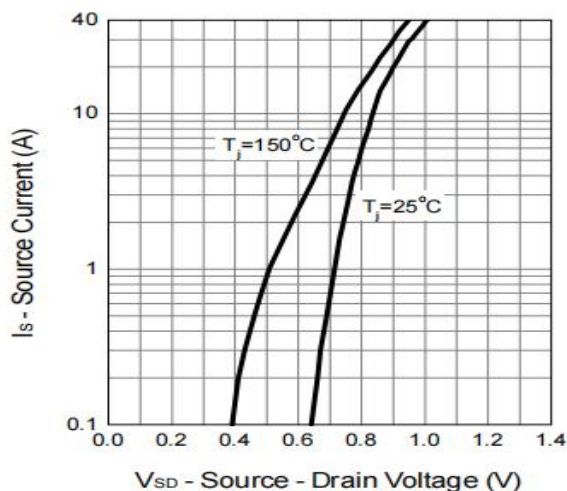


Figure 9: Diode Characteristics

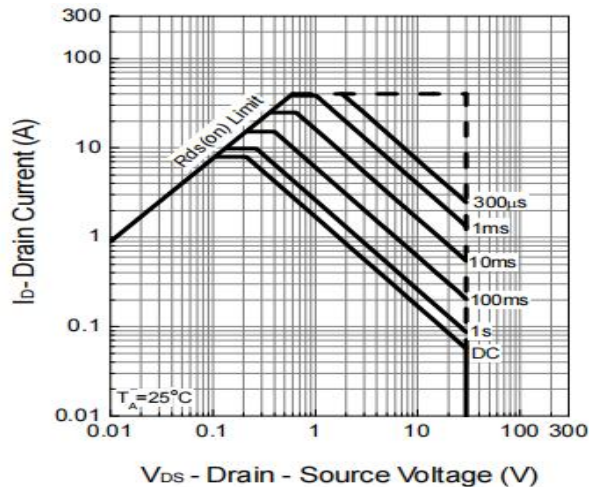


Figure 10: Safe Operating Area

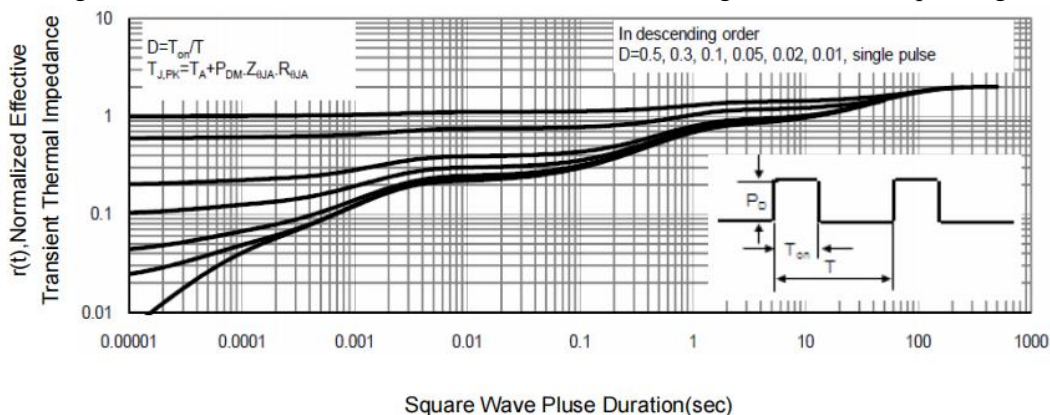
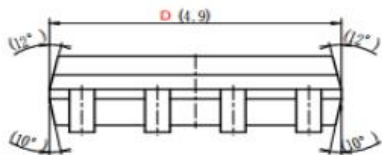
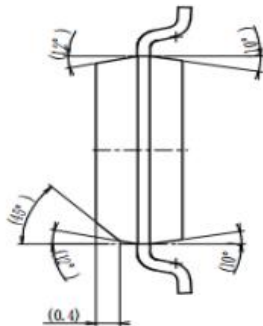
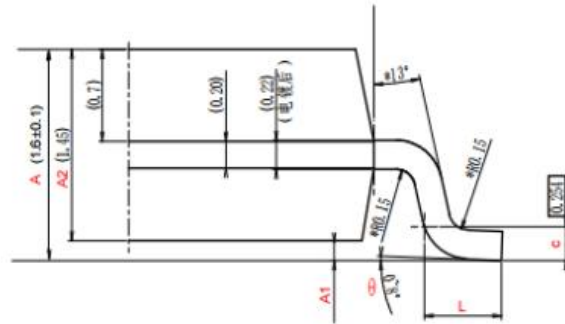
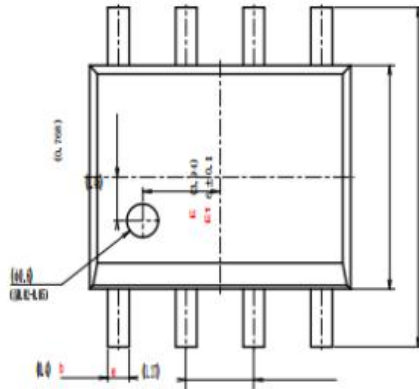


Figure 11: Transient Thermal Response Curve

■ Dimension 外形封装尺寸



字符	Dimension millimeters		
	Min	Standard	Max
A	1.500	1.600	1.700
A1	0.040	0.080	0.150
A2	1.350	1.450	1.550
b	0.300	0.400	0.500
c	0.220	0.254	0.280
D	4.800	4.900	5.000
E	3.840	3.940	4.040
E1	5.900	6.000	6.100
e		1.27 (BSC)	
L	0.400	0.550	0.700
θ	0°		8°