FS60P06AD

TO-252 P Channel Enhancement 沟道增强型
MOS Field Effect Transistor 场效应管

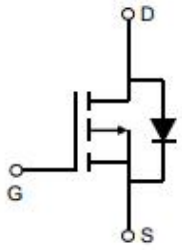
■Features 特点

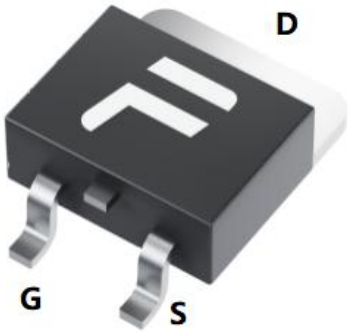
Low on-resistance 低导通电阻
$R_{DS(ON)}$=12.5mΩ(Type)@V_{GS}= -10V
$R_{DS(ON)}$=15mΩ(Type)@V_{GS}= -4.5V

■Applications 应用

Load switch 负载开关
PMW Application 脉宽调制
Power Management 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}	-60	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_C = 25°C）	-60	A
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	-240	A
Total Device Dissipation 总耗散功率	P_D(at T_C = 25°C)	73	W
Thermal Resistance Junction-Am 结到环境热阻	$R_{\theta JA}$	62.5	℃/W
Thermal Resistance Junction-Case 结壳热阻	$R_{\theta JC}$	1.72	℃/W
Avalanche Energy Single Pulse 雪崩能量	E_{AS}	300	mJ
Junction/Storage Temperature 结温/储存温度	T_J,T_{stg}	150，-55~150	℃

■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}	-60	—	—	V
Gate Threshold Voltage 栅极开启电压(I_D = -250uA,V_{GS}= V_{DS})	$V_{GS(th)}$	-1	-1.8	-2.5	V
Zero Gate Voltage Drain Current 零栅压漏极电流(V_{GS}=0V, V_{DS}= -60V)	I_{DSS}	—	—	-100	nA
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= -20A,V_{GS}= -10V) (I_D= -10A,V_{GS}= -4.5V)	$R_{DS(ON)}$	—	12.5 15	16 20	mΩ
Diode Forward Voltage Drop 内附二极管正向压降(I_{SD}= -20A,V_{GS}=0V)	V_{SD}	—	—	-1.2	V
Input Capacitance 输入电容 (V_{GS}=0V, V_{DS}= -25V,f=1MHz)	C_{ISS}	—	7067	—	pF
Common Source Output Capacitance 共源输出电容(V_{GS}=0V, V_{DS}= -25V,f=1MHz)	C_{OSS}	—	290	—	pF
Reverse Transfer Capacitance 反馈电容 (V_{GS}=0V, V_{DS}= -25V,f=1MHz)	C_{RSS}	—	252	—	pF
Total Gate Charge 栅极电荷密度 (V_{DS}= -30V, I_D= -20A, V_{GS}= -10V)	Q_g	—	115	—	nC
Gate Source Charge 栅源电荷密度 (V_{DS}= -30V, I_D= -20A, V_{GS}= -10V)	Q_{gs}	—	27	—	nC
Gate Drain Charge 栅漏电荷密度 (V_{DS}= -30V, I_D= -20A, V_{GS}= -10V)	Q_{gd}	—	50	—	nC
Turn-ON Delay Time 开启延迟时间 (V_{DS}= -30V I_D= -20A, R_{GEN}=1Ω,V_{GS}= -10V)	$t_{d(on)}$	—	24	—	ns
Turn-ON Rise Time 开启上升时间 (V_{DS}= -30V I_D= -20A, R_{GEN}=1Ω,V_{GS}= -10V)	t_r	—	18	—	ns
Turn-OFF Delay Time 关断延迟时间 (V_{DS}= -30V I_D= -20A, R_{GEN}=1Ω,V_{GS}= -10V)	$t_{d(off)}$	—	56	—	ns
Turn-OFF Fall Time 关断下降时间 (V_{DS}= -30V I_D= -20A, R_{GEN}=1Ω,V_{GS}= -10V)	t_f	—	30	—	ns

■Typical Characteristic Curve 典型特性曲线

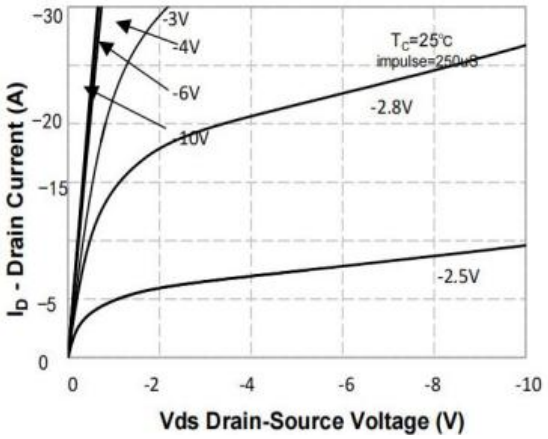


Figure 1: Output Characteristics

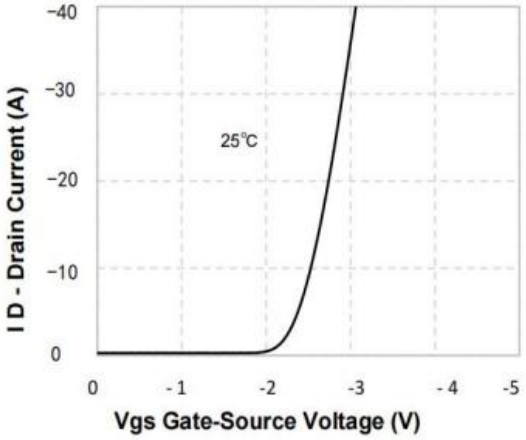


Figure 2: Transfer Characteristics

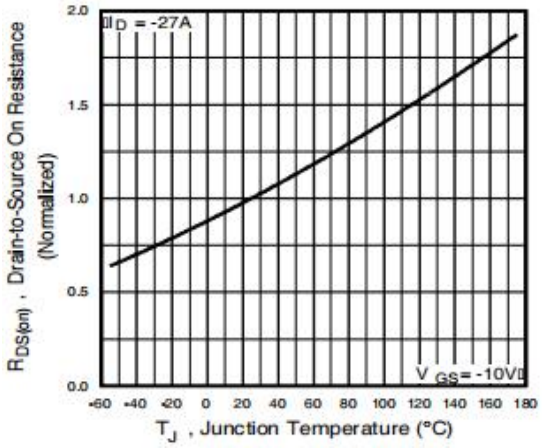


Figure 3: On-Resistance vs. T_J

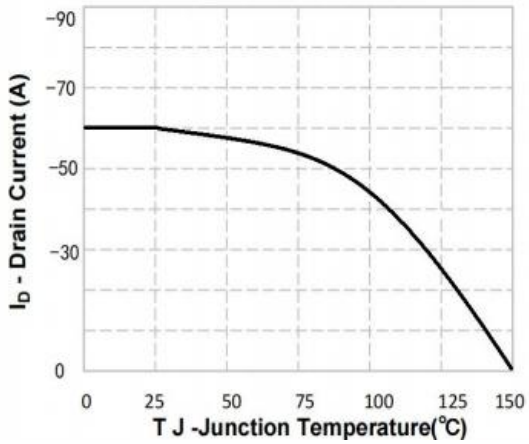


Figure 4: Drain Current vs. T_J

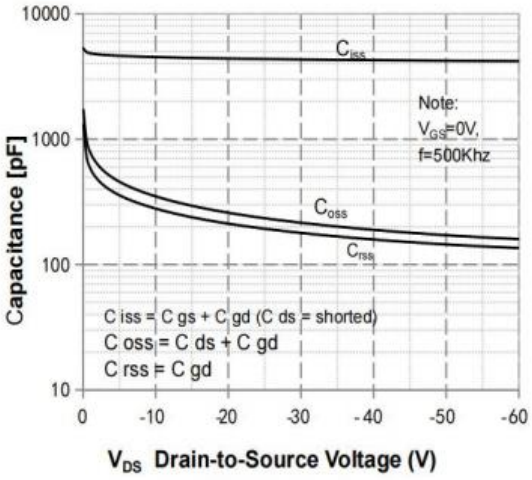


Figure 5: Capacitance Characteristics

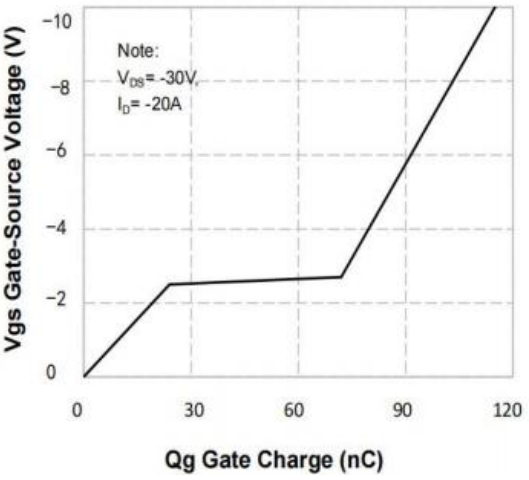


Figure 6: Gate-Charge Characteristics

■Typical Characteristic Curve 典型特性曲线

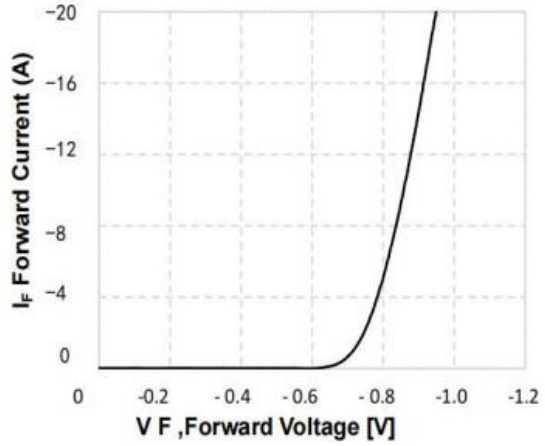


Figure 7: Diode Characteristics

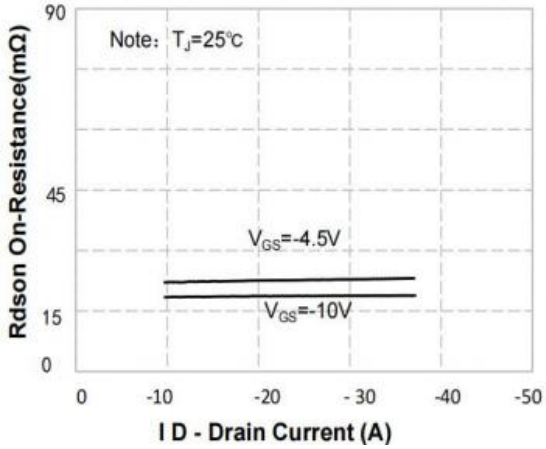


Figure 8: Rdson Id Characteristics

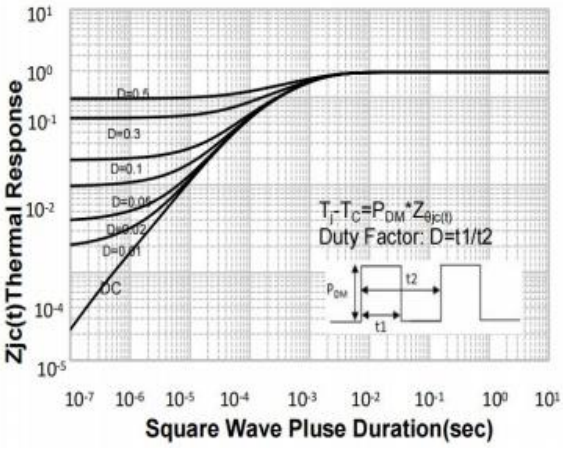


Figure 9: Transient Thermal Response Curve

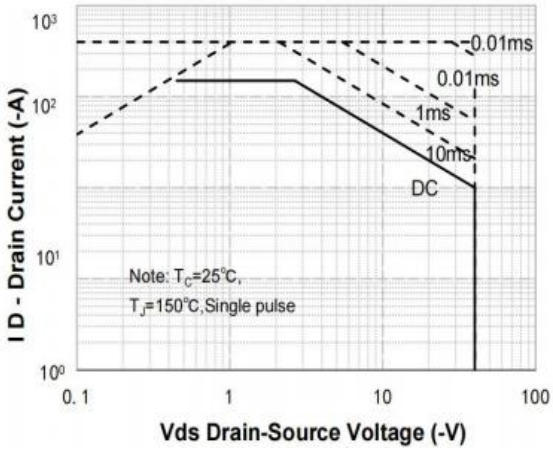
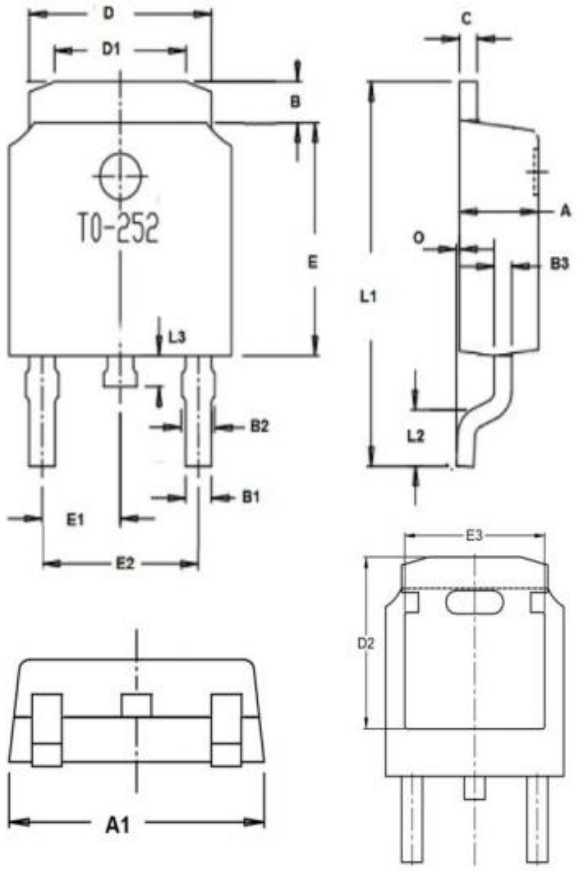


Figure 10: Safe Operating Area

■ Package Dimension 外形封装尺寸



Dim.	Min.	Max.
A	2.1	2.5
A1	6.3	6.9
B	0.96	1.42
B1	0.74	0.86
B2	0.74	0.94
C	Typ0.5	
D	5.33	5.53
D1	3.65	4.05
D2	5	5.4
E	6	6.2
E1	Typ2.29	
E2	Typ4.58	
E3	4.6	5
O	0	0.15
L1	9.9	10.5
L2	Typ1.65	
L3	0.6	1
All Dimensions in millimeter		