

●特点：热阻低 开关速度快 输入阻抗高 符合RoHS规范

●FEATURES: ■LOW THERMAL RESISTANCE ■FAST SWITCHING ■HIGH INPUT RESISTANCE
■RoHS COMPLIANT

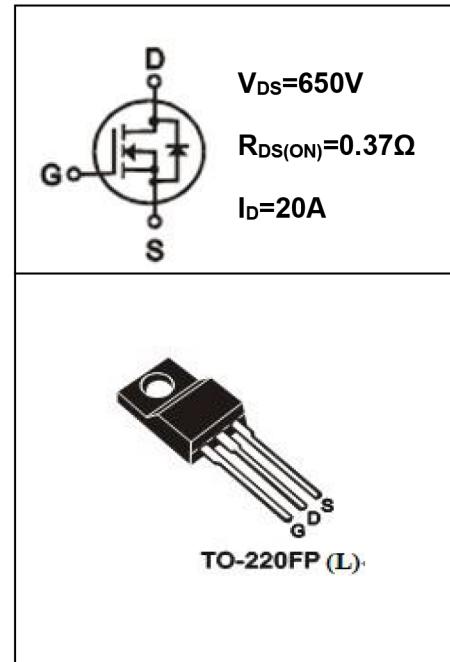
●应用：电子镇流器 电子变压器 开关电源

●APPLICATION: ■ELECTRONIC BALLAST ■ELECTRONIC TRANSFORMER ■SWITCH MODE POWER SUPPLY

●最大额定值 (TC=25°C)

●Absolute Maximum Ratings (Tc=25°C) TO-220FP(L)

参数 PARAMETER	符号 SYMBOL	额定值 VALUE	单位 UNIT
漏-源电压 Drain-source Voltage	V _{DS}	650	V
栅-源电压 gate-source Voltage	V _{GS}	±30	V
漏极电流 Continuous Drain Current TC=25°C	I _D	20*	A
漏极电流 Continuous Drain Current TC=100°C	I _D	11*	A
最大脉冲电流 Drain Current - Pulsed ①	I _{DM}	80*	A
耗散功率 Power Dissipation	P _D	65	W
最高结温 Junction Temperature	T _j	150	°C
存储温度 Storage Temperature	T _{STG}	-55-150	°C
单脉冲雪崩能量 Single Pulse Avalanche Energy②	E _{AS}	1000	mJ



*漏极电流由最高结温限制

*Drain current limited by maximum junction temperature

●电特性 (Tc=25°C)

●Electronic Characteristics (Tc=25°C)

参数 PARAMETER	符号 SYMBOL	测试条件 TEST CONDITION	最小值 MIN	典型值 TYP	最大值 MAX	单位 UNIT
漏-源击穿电压 Drain-source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	650			V
击穿电压温度系数 Breakdown Voltage Temperature Coefficient	Δ BV _{DSS} / Δ T _j	I _D =250μA, Referenced to 25°C		0.6		V/°C
栅极开启电压 Gate Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =250μA	2.0		4.0	V
漏-源漏电流 Drain-source Leakage Current	I _{DSS}	V _{DS} =650V, V _{GS} =0V, T _j =25°C			1	μA
		V _{DS} =520V, V _{GS} =0V, T _j =125°C			10	μA
跨导 Forward Transconductance	g _{fs}	V _{DS} =15V, I _D =10A ③		8		s

参数 PARAMETER	符号 SYMBOL	测试条件 TEST CONDITION	最小值 MIN	典型值 TYP	最大值 MAX	单位 UNIT
栅极漏电流 Gate-body Leakage Current ($V_{DS} = 0$)	I_{GSS}	$V_{GS} = \pm 30V$			± 100	nA
漏-源导通电阻 Static Drain-source On Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 10A$ ③		0.37	0.45	Ω
输入电容 Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V$ $F = 1.0MHz$		2650		pF
输出电容 Output Capacitance	C_{oss}			290		
反向传输电容 Reverse transfer Capacitance	C_{rss}			38		
关断延迟 Turn -Off Delay Time	$T_{d(off)}$	$V_{DD} = 320V, I_D = 20A$ $R_G = 5\Omega$ ③		62		ns
栅极电荷 Total Gate Charge	Q_g	$I_D = 10A, V_{DS} = 320V$ $V_{GS} = 10V$ ③		50		nC
栅源电荷 Gate-to-Source Charge	Q_{gs}			15		nC
栅漏电荷 Gate-to-Drain Charge	Q_{gd}			18		nC
二极管正向电流 Continuous Diode Forward Current	I_S				20	A
二极管正向压降 Diode Forward Voltage	V_{SD}	$T_j = 25^\circ C, I_S = I_f$ $V_{GS} = 0V$ ③			1.5	V
反向恢复时间 Reverse Recovery Time	t_{rr}	$T_j = 25^\circ C, I_f = 20A$ $di/dt = 100A/\mu s$ ③			200	ns
反向恢复电荷 Reverse Recovery Charge	Q_{rr}			0.8		uC

●热特性

●Thermal Characteristics

参数 PARAMETER	符号 SYMBOL	最大值 MAX	单位 UNIT
		TO-220FP(L)	
热阻结-壳 Thermal Resistance Junction-case	R_{thJC}	1.92	°C/W
热阻结-环境 Thermal Resistance Junction-ambient	R_{thJA}	62.5	°C/W

注释(Notes):

① 脉冲宽度：以最高节温为限制

Repetitive rating: Pulse width limited by maximum junction temperature

② Starting $T_j = 25^\circ C, V_{DD} = 50V, L = 5mH, R_G = 25\Omega, I_{AS} = 18A$

③ 脉冲测试：脉冲宽度≤300μs，占空比≤2%

Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2%

● 特性曲线

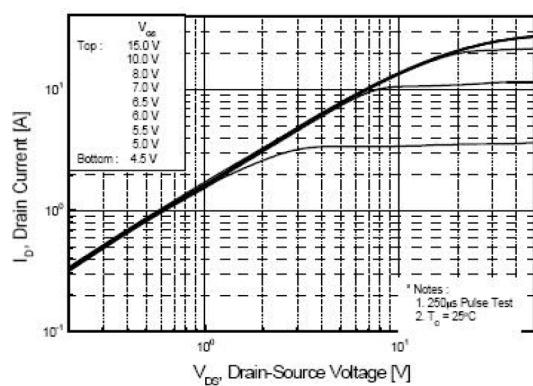


图1 输出特性曲线, $T_c=25^\circ\text{C}$

Fig1 Typical Output Characteristics, $T_c=25^\circ\text{C}$

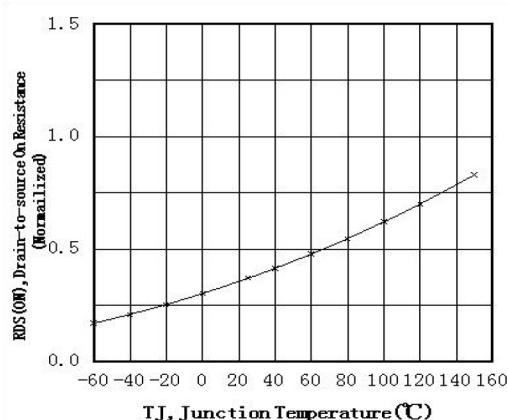


图2 导通电阻与漏极电流和栅极电压曲线

Fig2 On-Resistance Vs.Drain Current and Gate Voltage

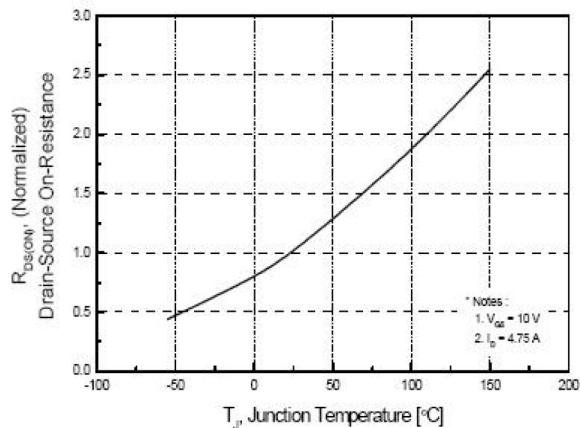


图3 归一化导通电阻与温度曲线

Fig3 Normalized On-Resistance Vs.Temperature

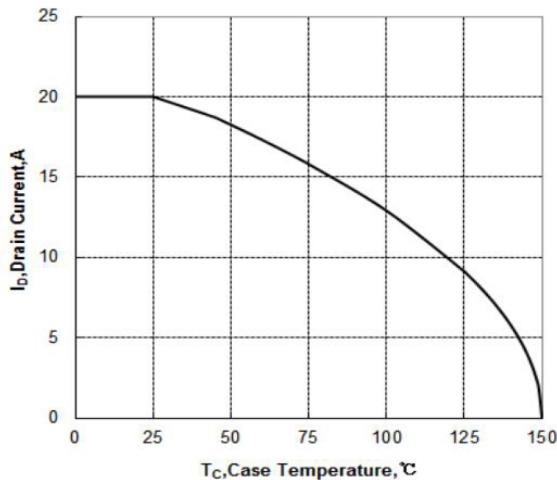


图5 最大漏极电流与壳温曲线

Fig5 Maximum Drain Current Vs.Case Temperature

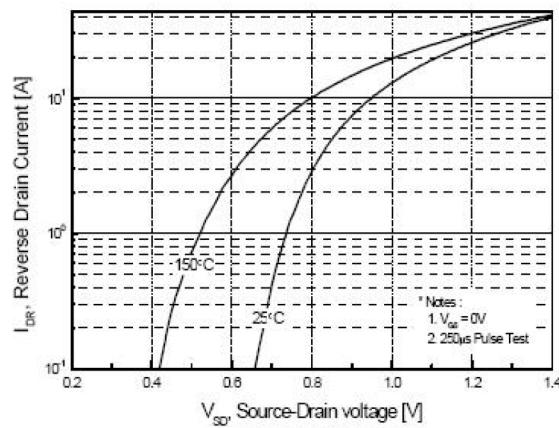


图4 二极管正向电压曲线

Fig4 Typical Source-Drain Diode Forward Voltage

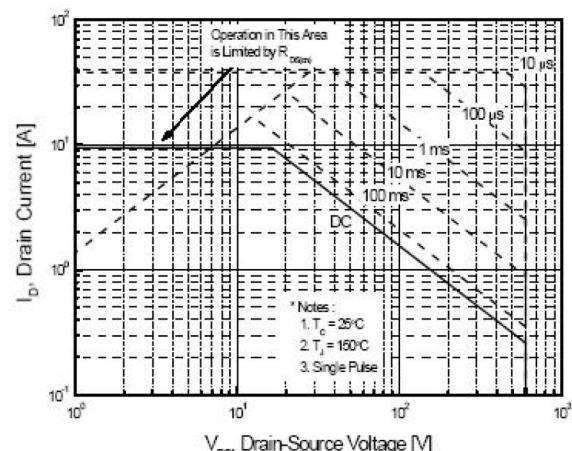


图6 最大安全工作区曲线

Fig6 Maximum Safe Operating Area