

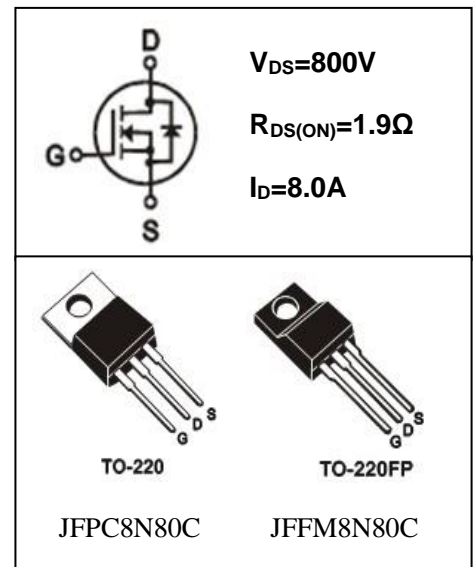
N-沟道功率 MOS 管/ N-CHANNEL POWER MOSFET

- 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-220/220F

参数 PARAMETER	符号 SYMBOL	额定值 VALUE	单位 UNIT
漏-源电压 Drain-source Voltage	V _{DS}	800	V
栅-源电压 gate-source Voltage	V _{GS}	±30	V
漏极电流 Continuous Drain Current TC=25°C	I _D	8.0*	A
漏极电流 Continuous Drain Current TC=100°C	I _D	3.5*	A
最大脉冲电流 Drain Current - Pulsed ①	I _{DM}	28*	A
耗散功率 Power Dissipation	P _{tot}	TO-220:167 TO-220F:56	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 Energy ②	E _{AS}	515	mJ



●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	800			V
击穿电压温度系数 Breakdown Voltage Temperature Coefficient	ΔBV _{DSS} / ΔT _j	I _D =250uA, Referenced to 25°C		0.93		V/°C
栅极开启电压 Gate Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =250μA	3.0		5.0	V
漏-源漏电流 Drain-source Leakage Current	I _{DSS}	V _{DS} =800V, V _{GS} =0V, T _j =25°C			10	μA
		V _{DS} =640V, V _{GS} =0V, T _j =125°C			100	μA
跨导 Forward Transconductance	g _{fs}	V _{DS} =40V, I _D =4.0A ③		5.5		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	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 4.0A$ ③		1.65	1.9	Ω
输入电容 Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V$ $F = 1.0MHz$		1290		pF
输出电容 Output Capacitance	C_{oss}			120		
反向传输电容 Reverse transfer Capacitance	C_{rss}			21		
关断延迟 Turn -Off Delay Time	$T_d(off)$	$V_{DD} = 350V, I_D = 8.0A$ $R_G = 25\Omega$ ③		50		ns
栅极电荷 Total Gate Charge	Q_g	$I_D = 8.0A, V_{DS} = 640V$ $V_{GS} = 10V$ ③		27		nC
栅源电荷 Gate-to-Source Charge	Q_{gs}			8.2		nC
栅漏电荷 Gate-to-Drain Charge	Q_{gd}			11		nC
二极管正向电流 Continuous Diode Forward Current	I_S				8.0	A
二极管正向压降 Diode Forward Voltage	V_{SD}	$T_j = 25^\circ C, I_S = 8.0A$ $V_{GS} = 0V$ ③			1.4	V
反向恢复时间 Reverse Recovery Time	t_{rr}	$T_j = 25^\circ C, I_f = 8.0A$ $di/dt = 100A/\mu s$ ③		650		ns
反向恢复电荷 Reverse Recovery Charge	Q_{rr}			7.0		μC

●热特性
●Thermal Characteristics

参数 PARAMETER	符号 SYMBOL	最大值 MAX		单位 UNIT
		TO-220	TO-220F	
热阻结-壳 Thermal Resistance Junction-case	R_{thJC}	0.75	2.23	$^\circ C/W$
热阻结-环境 Thermal Resistance Junction-ambient	R_{thJA}	62.5	62.5	$^\circ C/W$

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 初始结温= $25^\circ C$, $V_{DD} = 50V$, $L = 19.5mH$, $R_G = 25\Omega$, $I_{AS} = 8.0A$
 Starting $T_j = 25^\circ C$, $V_{DD} = 50V$, $L = 19.5mH$, $R_G = 25\Omega$, $I_{AS} = 8.0A$
- ③ 脉冲测试：脉冲宽度 $\leq 300\mu s$ ，占空比 $\leq 2\%$
 Pulse Test : Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$

特性曲线

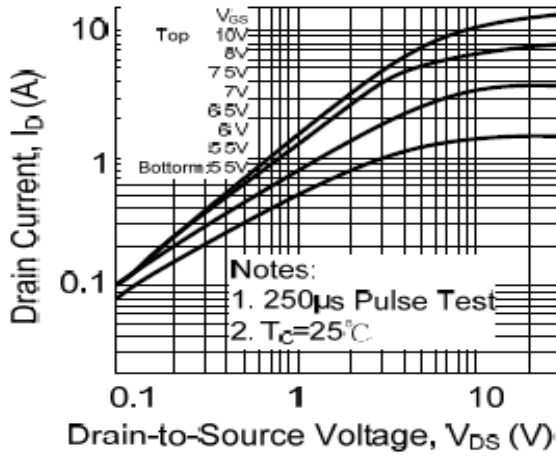


图1 输出特性曲线, $T_c=25^\circ\text{C}$
Fig1 Typical Output Characteristics, $T_c=25^\circ\text{C}$

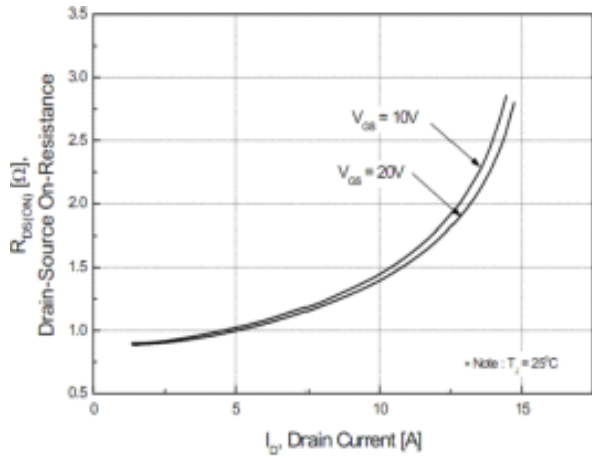


图2 导通电阻与漏极电流和栅极电压曲线
Fig2 On-Resistance Vs. Drain Current and Gate Voltage

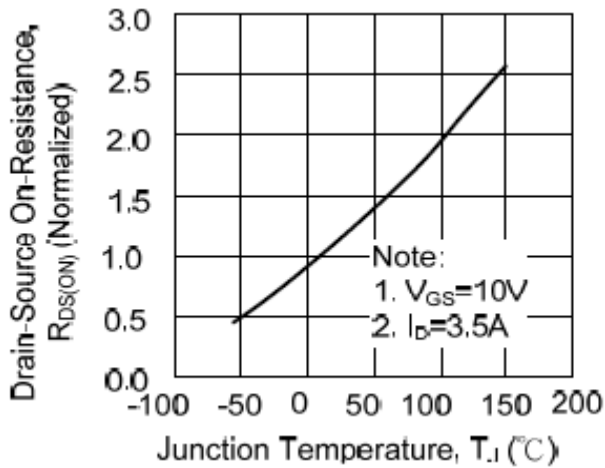


Fig3 Normalized On-Resistance Vs. Temperature

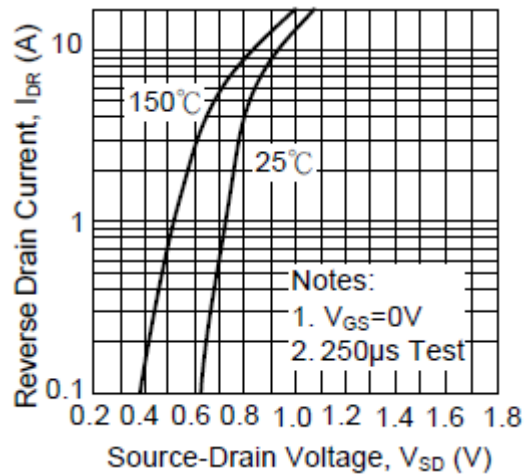


Fig4 Typical Source-Drain Diode Forward Voltage

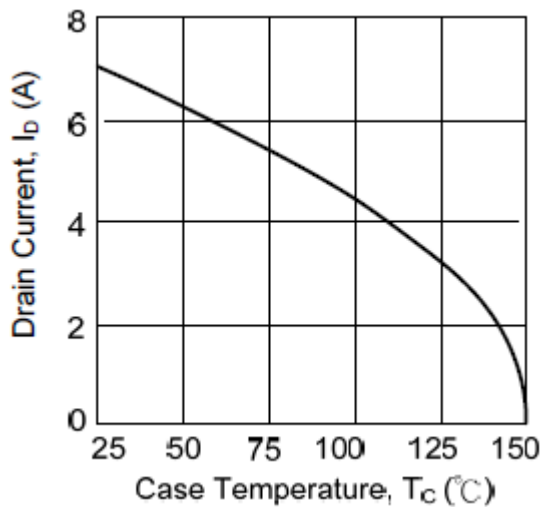


图5 最大漏极电流与壳温曲线
Fig5 Maximum Drain Current Vs. Case Temperature

● 特性曲线

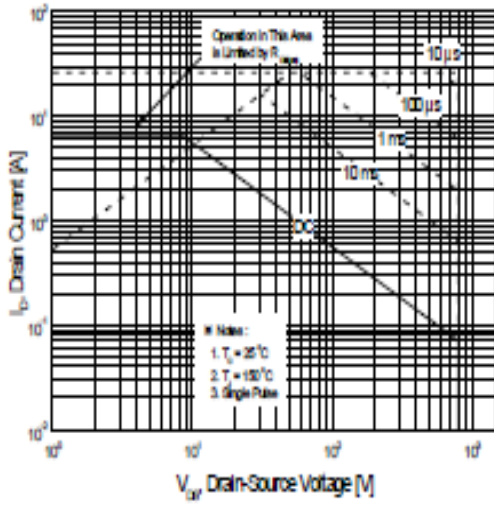


图 6-1 8N80C(TO-220)
最大安全工作区曲线
Fig6-1 Maximum Safe Operating Area

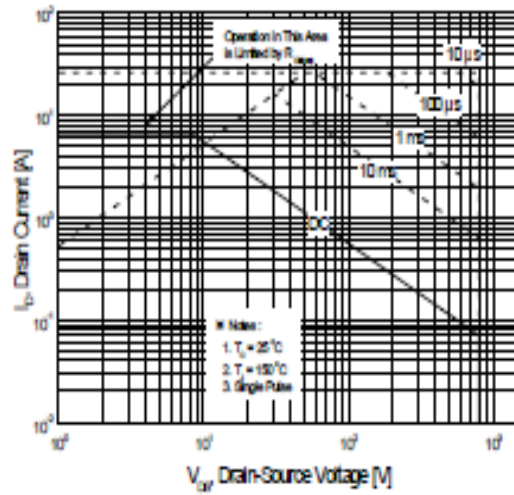


图 6-2 8N80C(TO-220F)
最大安全工作区曲线
Fig6-2 Maximum Safe Operating Area