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

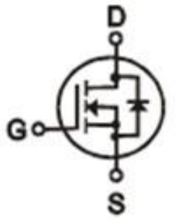
●**FEATURES:** ■LOW THERMAL RESISTANCE ■FAST SWITCHING ■HIGH INPUT RESISTANCE ■RoHS COMPLIANT

●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-220/220FP

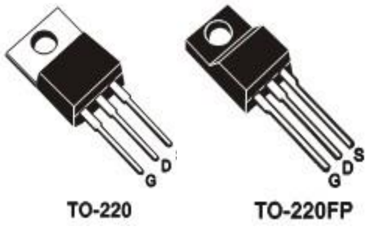
参数 PARAMETER	符号 SYMBOL	额定值 VALUE	单位 UNIT
漏-源电压 Drain-source Voltage	V_{DS}	800	V
栅-源电压 gate-source Voltage	V_{GS}	±30	V
漏极电流 Continuous Drain Current TC=25℃	I_D	12.0*	A
漏极电流 Continuous Drain Current TC=100℃	I_D	6.6*	A
最大脉冲电流 Drain Current －Pulsed ①	I_{DM}	48*	A
耗散功率 Power Dissipation	P_{tot}	80	W
最高结温 Junction Temperature	Tj	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}	700	mJ



V_{DS}=800V

$R_{DS(ON)}$=1.0Ω

I_D=12.0A



JFPC12N80C　JFFM12N80C

*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	800			V
击穿电压温度系数 Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta Tj$	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, Tj=25°C			10	μA
		V_{DS} =640V, V_{GS} =0V, Tj=125°C			100	μA
跨导 Forward Transconductance	gfs	V_{DS} =40V, I_D=5.0A ③		9.0		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} =±30V			±100	nA
漏-源导通电阻 Static Drain-source On Resistance	$R_{DS(ON)}$	V_{GS} =10V, I_D=5.0A ③		0.7	1.0	Ω
输入电容 Input Capacitance	Ciss	V_{GS} = 0V, V_{DS} = 25V F = 1.0MHZ		2260		pF
输出电容 Output Capacitance	Coss			200		
反向传输电容 Reverse transfer Capacitance	Crss			28		
关断延迟 Turn -Off Delay Time	Td(off)	V_{DD}=400V, I_D =10.0A R_G=25Ω ③		90		ns
栅极电荷 Total Gate Charge	Qg	I_D =10.0A, V_{DS} = 640V V_{GS} = 10V ③		59		nC
栅源电荷 Gate-to-Source Charge	Qgs			12		nC
栅漏电荷 Gate-to-Drain Charge	Qgd			19		nC
二极管正向电流 Continuous Diode Forward Current	I_S				10.0	A
二极管正向压降 Diode Forward Voltage	V_{SD}	Tj=25°C, Is=10.0A V_{GS} =0V ③			1.4	V
反向恢复时间 Reverse Recovery Time	trr	Tj=25°C, If=10.0A di/dt=100A/μs ③		730		ns
反向恢复电荷 Reverse Recovery Charge	Qrr			10.9		uC

●热特性

●Thermal Characteristics

参数 **PARAMETER**	符号 **SYMBOL**	最大值 **MAX**	单位 **UNIT**
		TO-220FP	
热阻结-壳 Thermal Resistance Junction-case	Rth_{JC}	1.79	℃/W
热阻结-环境 Thermal Resistance Junction-ambient	Rth_{JA}	62.5	℃/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 Tj=25°C, V_{DD} =50V, L=10mH, R_G =25Ω, I_{AS}=10.0A

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**

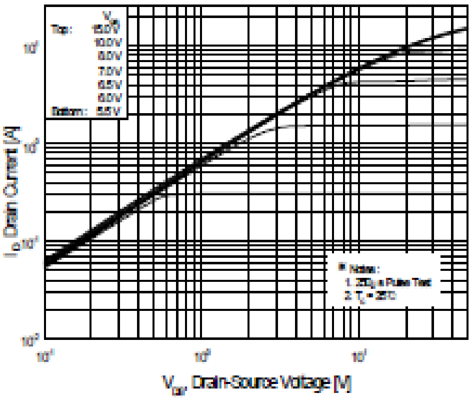


图 1 输出特性曲线, Tc=25℃

Fig1 Typical Output Characteristics, Tc=25℃

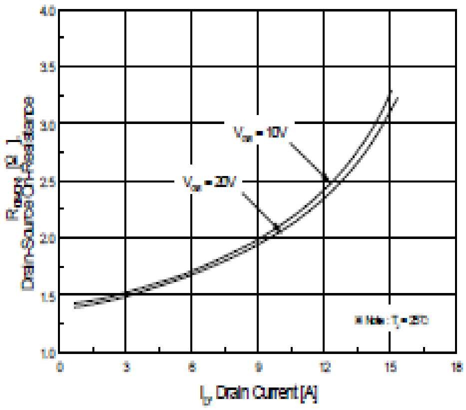


图 2 导通电阻与漏极电流和栅极电压曲线

Fig2 On-Resistance Vs.Drain Current and Gate Voltage

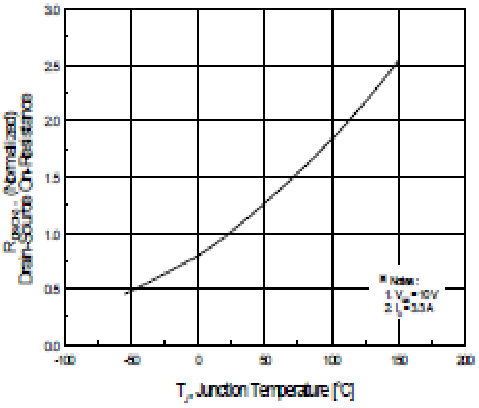


图 3 导通电阻与温度曲线

Fig3 Normalized On-Resistance Vs.Temperature

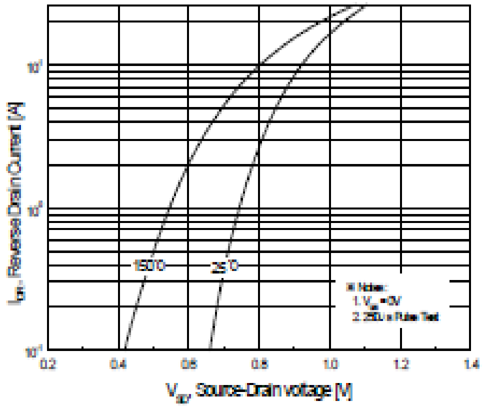
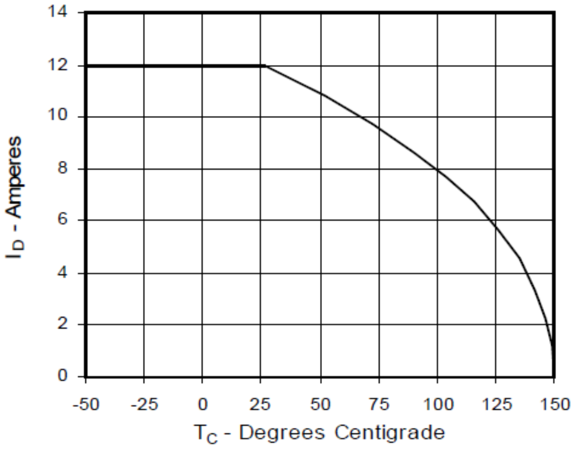
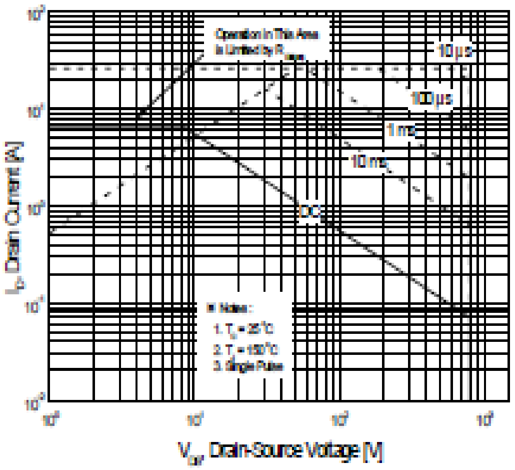


图 4 二极管正向电压曲线

Fig4 Typical Source-Drain Diode Forward Voltage





线

图 6 最大安全工作区曲线

Fig5 Maximum Drain Current Vs.Case Temperature

Fig6 Maximum Safe Operating Area