

N-沟道功率 MOS 管/ N-CHANNEL POWER MOSFET

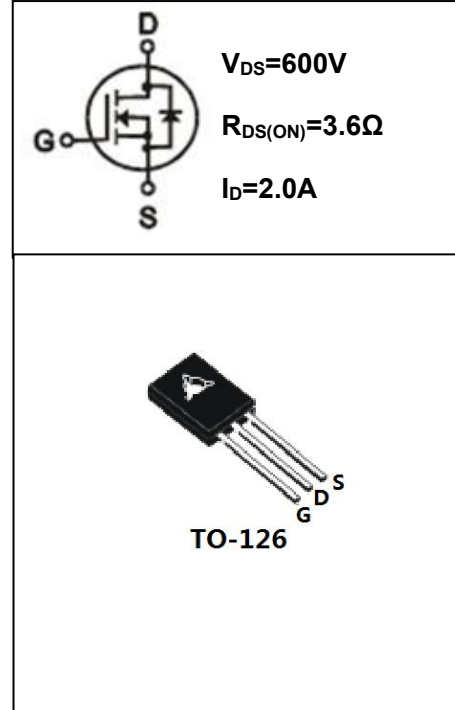
SIF2N60F

- 特点：导通电阻低 开关速度快 输入阻抗高 符合RoHS规范
- FEATURES: ■LOW ON-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-126

参数 PARAMETER	符号 SYMBOL	额定值 VALUE	单位 UNIT
漏-源电压 Drain-source Voltage	V <sub>DS</sub>	600	V
栅-源电压 gate-source Voltage	V <sub>GS</sub>	±30	V
漏极电流 Continuous Drain Current TC=25°C	I <sub>D</sub>	2.0*	A
漏极电流 Continuous Drain Current TC=100°C	I <sub>D</sub>	1.25*	A
最大脉冲电流 Drain Current — Pulsed ①	I <sub>DM</sub>	8.0*	A
耗散功率 Power Dissipation	P <sub>tot</sub>	24	W
最高结温 Junction Temperature	T <sub>j</sub>	150	°C
存储温度 Storage Temperature	T <sub>STG</sub>	-55-150	°C
单脉冲雪崩能量 Single Pulse Avalanche Energy ②	E <sub>AS</sub>	80	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 <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	600			V
击穿电压温度系数 Breakdown Voltage Temperature Coefficient	ΔBV <sub>DSS</sub> /ΔT <sub>j</sub>	I <sub>D</sub> =250uA, Referenced to 25°C		0.6		V/°C
栅极开启电压 Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250μA	2.0		4.0	V
漏-源漏电流 Drain-source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =600V, V <sub>GS</sub> =0V, T <sub>j</sub> =25°C			1	μA
		V <sub>DS</sub> =480V, V <sub>GS</sub> =0V, T <sub>j</sub> =125°C			100	μA
跨导 Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =1A ③		2.0		S

●订单信息/ORDERING INFORMATION:

包装形式/PACKING	订货编码/ORDERING CODE	
	普通塑封料 Normal Package Material	无卤塑封料 Halogen Free
TO-126 普通袋装/NORMAL PACKING	SIF2N60F TO-126	SIF2N60F TO-126-HF

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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 ( $V_{DS} = 0$ )	$I_{GSS}$	$V_{GS} = \pm 30V$			$\pm 100$	nA
漏-源导通电阻 Static Drain-source On Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 1A$ ③		3.6	4.5	$\Omega$
输入电容 Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V$ $F = 1.0MHz$		278		pF
输出电容 Output Capacitance	$C_{oss}$			20		
反向传输电容 Reverse transfer Capacitance	$C_{rss}$			5		
关断延迟 Turn -Off Delay Time	$T_d(off)$	$V_{DD} = 300V, I_D = 2.0A$ $R_G = 25\Omega$ ③		24		ns
栅极电荷 Total Gate Charge	$Q_g$	$I_D = 2.0A, V_{DS} = 480V$ $V_{GS} = 10V$ ③		6.6		nC
栅源电荷 Gate-to-Source Charge	$Q_{gs}$			1.4		nC
栅漏电荷 Gate-to-Drain Charge	$Q_{gd}$			2.0		nC
二极管正向电流 Continuous Diode Forward Current	$I_s$				2.0	A
二极管正向压降 Diode Forward Voltage	$V_{SD}$	$T_j = 25^\circ C, I_s = 2.0A$ $V_{GS} = 0V$ ③			1.4	V
反向恢复时间 Reverse Recovery Time	$t_{rr}$	$T_j = 25^\circ C, I_f = 2.0A$ $di/dt = 100A/\mu s$ ③		401		ns
反向恢复电荷 Reverse Recovery Charge	$Q_{rr}$			1.1		$\mu C$

● 热特性

● Thermal Characteristics

参数 PARAMETER	符号 SYMBOL	最大值 MAX	单位 UNIT
热阻结-壳 Thermal Resistance Junction-case	$R_{thJC}$	5.2	$^\circ C/W$
热阻结-环境 Thermal Resistance Junction-ambient	$R_{thJA}$	110.0	$^\circ C/W$

注释(Notes):

- ① 脉冲宽度: 以最高结温为限制  
Repetitive rating: Pulse width limited by maximum junction temperature
- ② 初始结温= $25^\circ C$ ,  $V_{DD} = 50V$ ,  $L = 38mH$ ,  $R_G = 25\Omega$ ,  $I_{AS} = 2.0A$   
Starting  $T_j = 25^\circ C$ ,  $V_{DD} = 50V$ ,  $L = 38mH$ ,  $R_G = 25\Omega$ ,  $I_{AS} = 2.0A$
- 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  $\leq 2\%$

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● 特性曲线

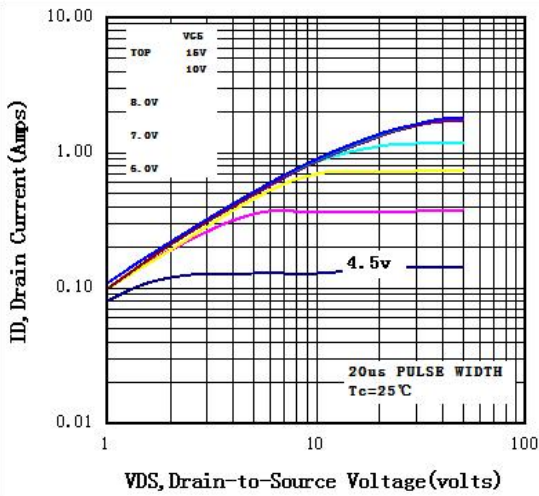


图 1 输出特性曲线, Tc=25°C

Fig1 Typical Output Characteristics, Tc=25°C

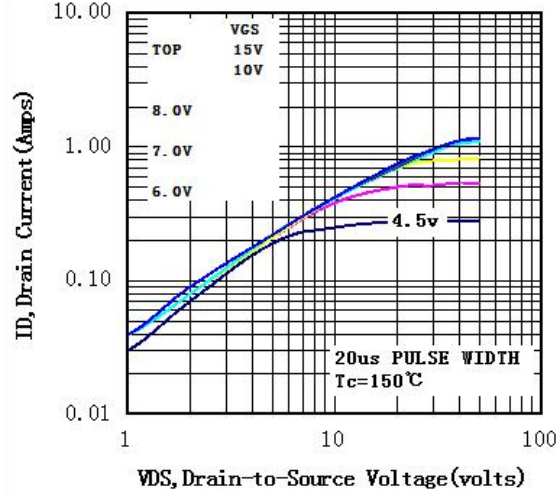


图 2 输出特性曲线, Tc=150°C

Fig2 Typical Output Characteristics, Tc=150°C

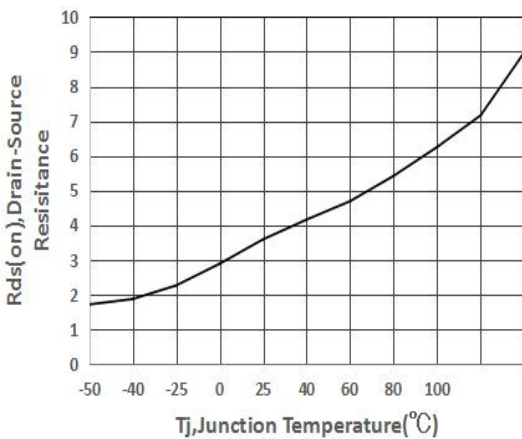


图 3 归一化导通电阻与温度曲线

Fig3 Normalized Resistance Vs. Temperature

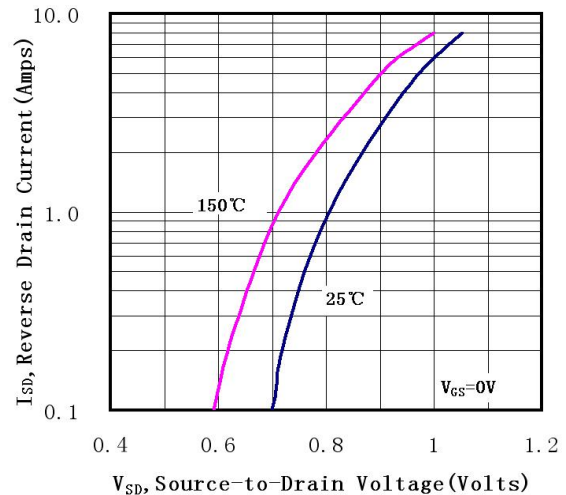


图 4 二极管正向压降曲线

Fig4 Typical Source-Drain Diode Forward Voltage

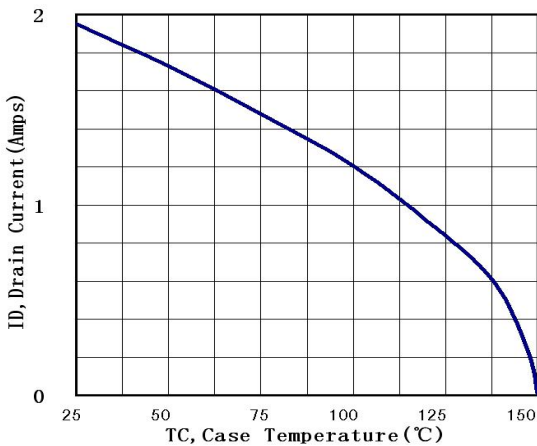


图 5 最大漏极电流与壳温曲线

Fig5 Maximum Drain Current Vs. Case Temperature

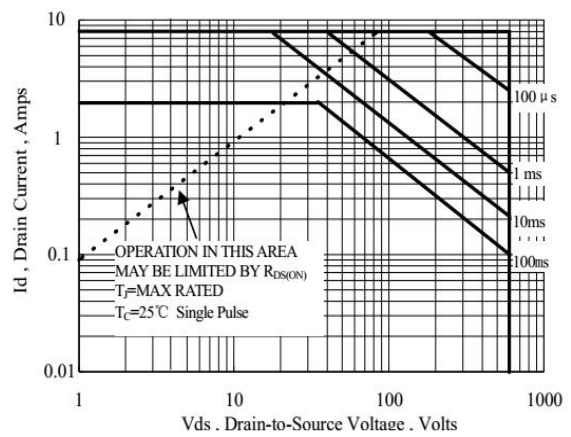


图 6 最大安全工作区曲线

Fig6 Maximum Safe Operating Area



## TO-126 封装机械尺寸 TO-126 MECHANICAL DATA

单位:毫米/UNIT: mm

符号 SYMBOL	最小值 min	典型值 nom	最大值 max	符号 SYMBOL	最小值 min	典型值 nom	最大值 max
A	2.30		2.80	L	15.00		16.50
B	1.15		1.42	L1	1.50		2.54
b	0.65		0.90	$\phi P$	2.90		3.60
c	0.35		0.65	$\phi P1$		5.00	
D	10.50		11.10	Q	3.60		4.40
E	7.20		7.80	Q1	0.90		1.50
e		2.29		R		0.50	

