描述 / Descriptions

DFN 3*3A-8L 塑封封装 P 沟道 MOS 场效应管。
P-Channel Enhancement Mode Field Effect Transistor in a DFN 3*3A-8L Plastic Package.

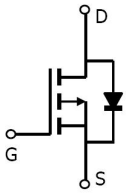
特征 / Features

V_{DS} (V) = -30V
I_D = -19 A (V_{GS} = -20V)
无卤产品。HF Product.

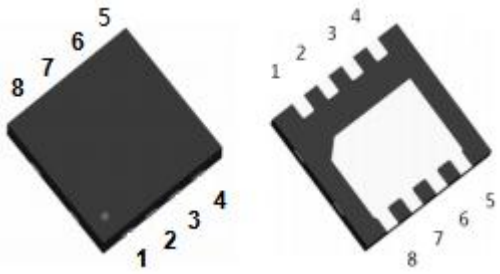
用途 / Applications

用于电源管理，便携式设备和电池供电系统。
Power Management in Notebook computer, Portable Equipment and Battery powered systems.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



出脚	定义
Pin1	S
Pin2	S
Pin3	S
Pin4	G
Pin5	D
Pin6	D
Pin7	D
Pin8	D

印章代码 / Marking

见印章说明 See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25℃)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D (T_a=25°C)	-19	A
Continuous Drain Current	I_D (T_a=70°C)	-14	A
Pulsed Drain Current	I_{DM}	-56	A
Avalanche energy L=0.5mH	E_{AS}	170	mJ
Power Dissipation for Single Operation	P_D (T_a=25℃)	13	W
Power Dissipation for Single Operation	P_D (T_a=100℃)	5.2	W
Maximum Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 ~ 150	℃
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$ (t≦10s)	35	℃/W
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	67	℃/W
Maximum Junction-to-Case	$R_{\theta JC}$	9.6	℃/W

电性能参数 / Electrical Characteristics(Ta=25℃)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA V_{GS}=0V	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V V_{GS}=0V			-1.0	μA
		V_{DS}=-30V V_{GS}=0V T_J=55°C			-5.0	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-1.0	-1.7	-3.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V I_D=-10A		17.8	20	mΩ
		V_{GS}=-4.5V I_D=-10A		28.5	30	
Forward Transconductance	g_{FS}	V_{DS}=-5V I_D=-8.8A		11		S
Diode Forward Voltage	V_{SD}	I_S=-1A V_{GS}=0V		-0.72	-1.0	V
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=-10V I_D=-10A V_{DS}=-15V		19	30	nC
Total Gate Charge	$Q_{g(4.5V)}$			9.6	20	
Gate-Source Charge	Q_{gs}			3.5		
Gate-Drain Charge	Q_{gd}			4.5		
Gate Resistance	R_g	V_{GS}=0V f=1MHz V_{DS}=0V		8.8		Ω
Input Capacitance	C_{iss}	V_{GS}=0V f=1MHz V_{DS}=-25V		1770		pF
Output Capacitance	C_{oss}			550		
Reverse Transfer Capacitance	C_{rss}			290		
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-10V R_L=1.5Ω V_{DS}=-15V R_{GEN}=3Ω		10		ns
Turn-on Rise Time	t_r			5.5		
Turn-off Delay Time	$t_{d(OFF)}$			26		
Turn-off Fall Time	t_f			9		

电参数曲线图 / Electrical Characteristic Curve

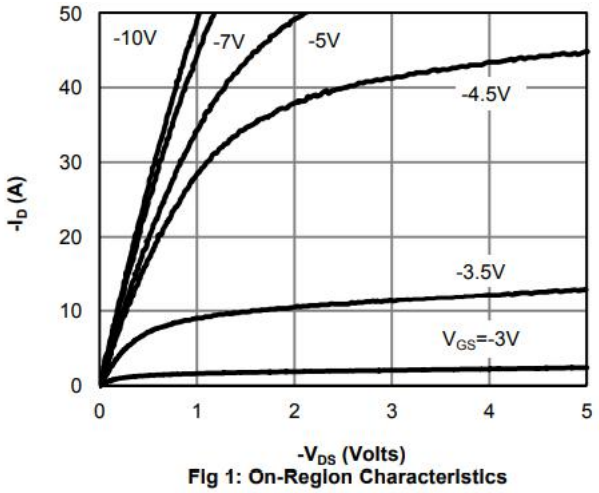


Fig 1: On-Region Characteristics

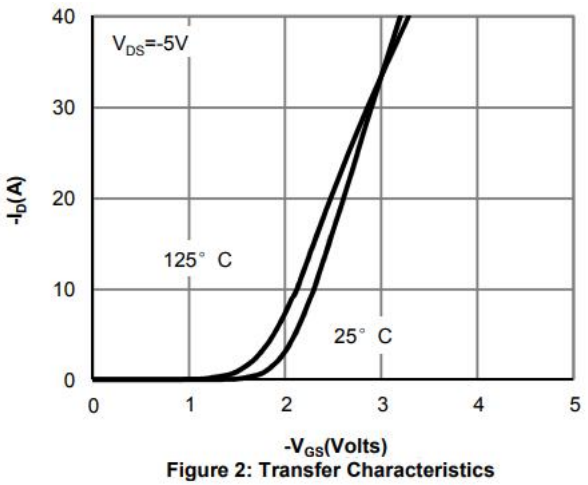


Figure 2: Transfer Characteristics

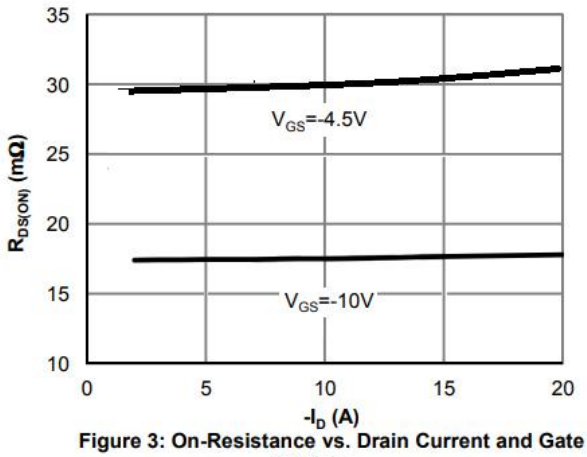


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

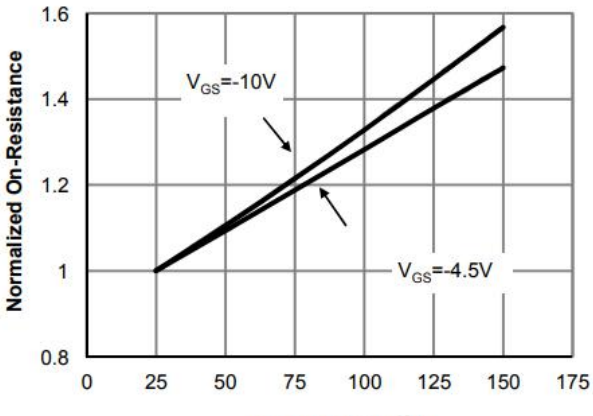


Figure 4: On-Resistance vs. Junction Temperature

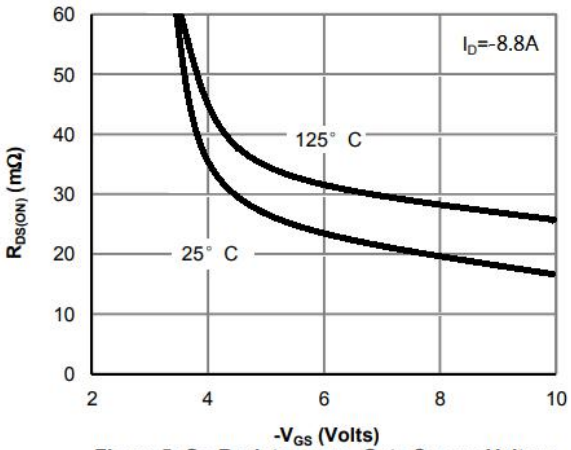


Figure 5: On-Resistance vs. Gate-Source Voltage

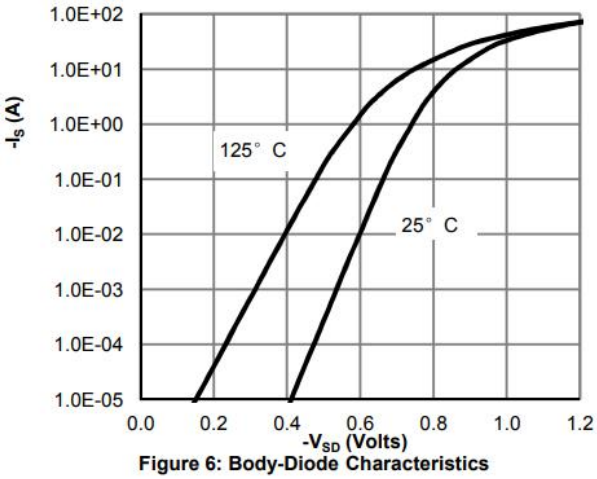


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

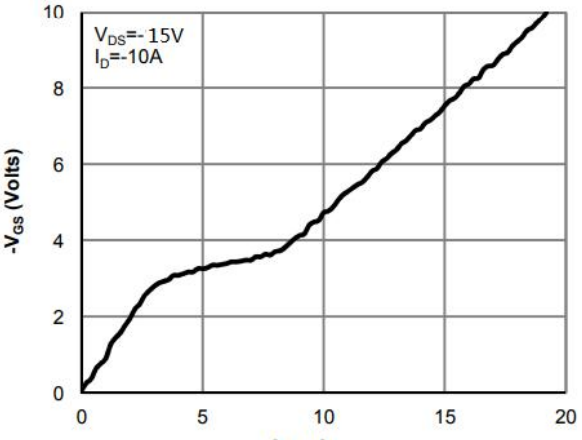


Figure 7: Gate-Charge Characteristics

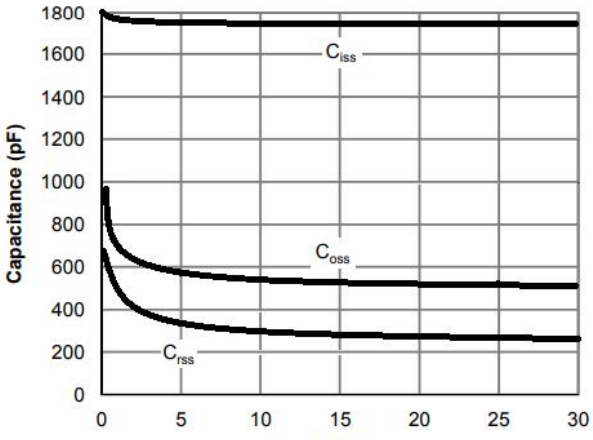
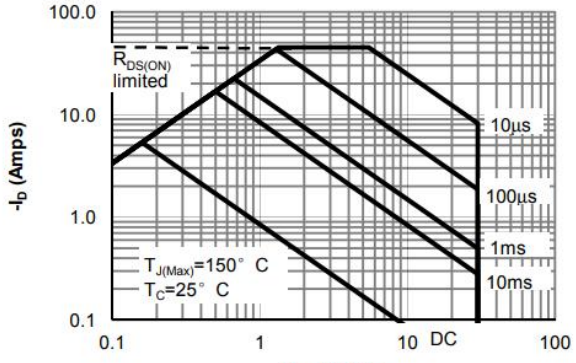


Figure 8: Capacitance Characteristics



V_{GS}> or equal to 4.5V
Figure 9: Maximum Forward Biased Safe Operating Area

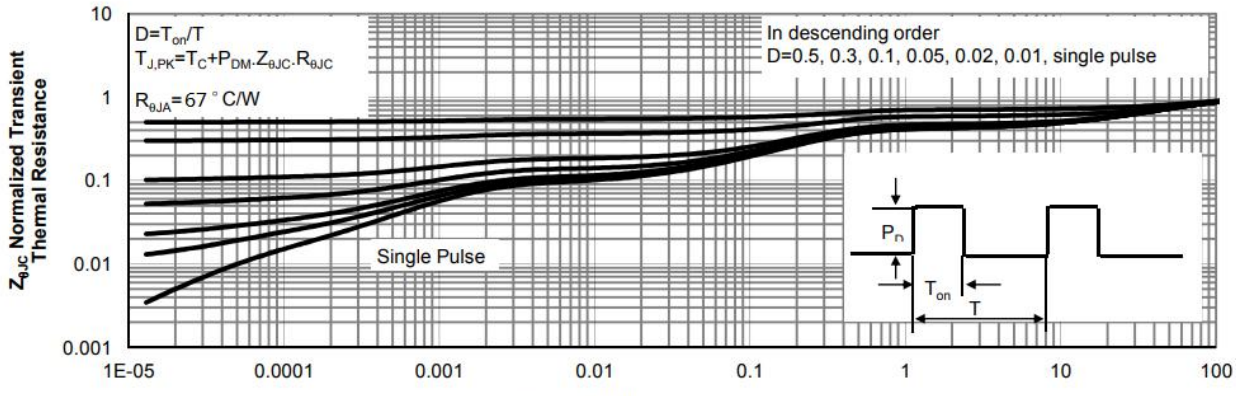
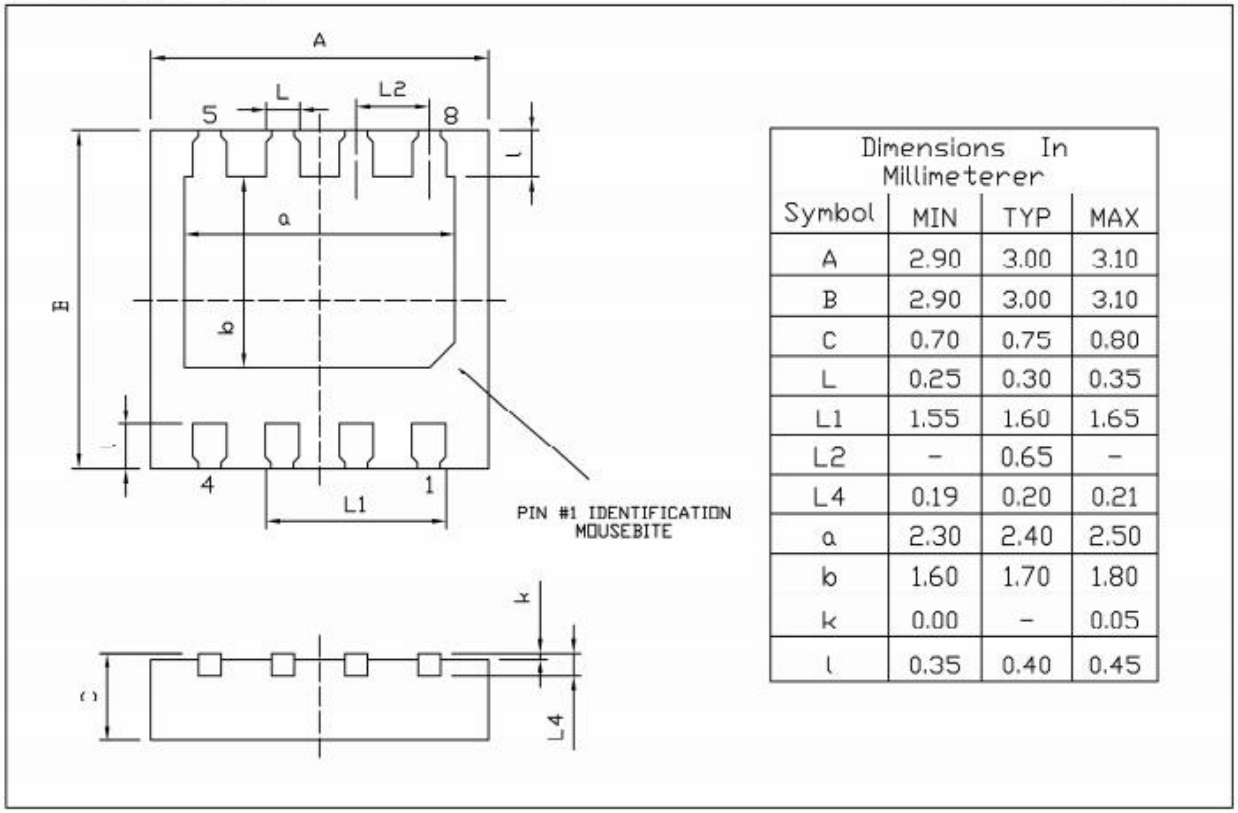


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

DFN3X3A-8L Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	2.90	3.00	3.10
B	2.90	3.00	3.10
C	0.70	0.75	0.80
L	0.25	0.30	0.35
L1	1.55	1.60	1.65
L2	–	0.65	–
L4	0.19	0.20	0.21
a	2.30	2.40	2.50
b	1.60	1.70	1.80
k	0.00	–	0.05
l	0.35	0.40	0.45

印章说明 / Marking Instructions

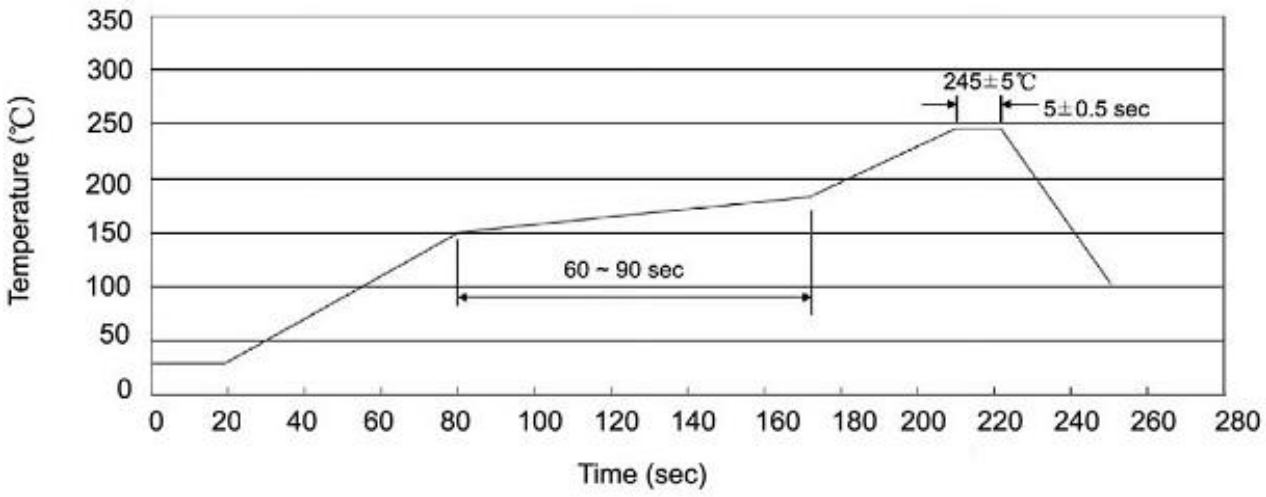
说明：

BR：	为公司代码
200P03：	为型号代码
****：	为生产批号代码，随生产批号变化。

Note:

BR:	Company Code.
200P03:	Product Type
****:	Lot No. Code, code change with Lot No.

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

1、预热温度 150～180℃，时间 60～90sec;

2、峰值温度 245±5℃，时间持续为 5±0.5sec;

3、焊接制程冷却速度为 2～10℃/sec.

Note:

1.Preheating:150~180℃, Time:60~90sec.

2.Peak Temp.:245±5℃, Duration:5±0.5sec.

3. Cooling Speed: 2~10℃/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5℃　　时间：10±1 sec.　　Temp.:260±5℃　　Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit：mm³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	nner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
DFN 3*3-8L	5,000	2	10,000	6	60,000	13″ ×12	360×360×50	380×335×366

使用说明 / Notices