

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

$V_{DS} (V) = -30V$

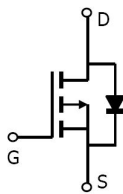
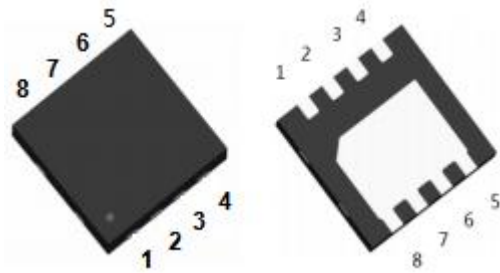
$I_D = -22 A (V_{GS} = -20V)$

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°C)

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	$I_D (T_a=25^\circ\text{C})$	-22	A
Continuous Drain Current	$I_D (T_a=70^\circ\text{C})$	-18	A
Pulsed Drain Current	I_{DM}	-64	A
Avalanche energy L=0.5mH	E_{AS}	270	mJ
Power Dissipation for Single Operation	$P_D (T_a=25^\circ\text{C})$	22.7	W
Power Dissipation for Single Operation	$P_D (T_a=100^\circ\text{C})$	10	W
Maximum Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA} (t \leq 10s)$	30	$^\circ\text{C/W}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	60	$^\circ\text{C/W}$
Maximum Junction-to-Case	$R_{\theta JC}$	5.5	$^\circ\text{C/W}$


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

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}	$I_D = -250\mu A$ $V_{GS} = 0V$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V$ $V_{GS} = 0V$			-1.0	μA
		$V_{DS} = -30V$ $V_{GS} = 0V$ $T_J = 55^\circ C$			-5.0	
Gate-Body leakage current	I_{GSS}	$V_{DS} = 0V$ $V_{GS} = \pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ $I_D = -250\mu A$	-1.0	-1.7	-3.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = -10V$ $I_D = -10A$		17.6	20	m Ω
		$V_{GS} = -4.5V$ $I_D = -10A$		26.4	30	
Forward Transconductance	g_{FS}	$V_{DS} = -5V$ $I_D = -10A$		17		S
Diode Forward Voltage	V_{SD}	$I_S = -1A$ $V_{GS} = 0V$		-0.72	-1.0	V
Maximum Body-Diode Continuous Current	I_S				-22	A
Total Gate Charge	$Q_{g(10V)}$	$V_{GS} = -10V$ $V_{DS} = -15V$ $I_D = -12A$		21	34	nC
Total Gate Charge	$Q_{g(4.5V)}$			11	18	
Gate-Source Charge	Q_{gs}			6		
Gate-Drain Charge	Q_{gd}			3		
Gate Resistance	R_g	$V_{GS} = 0V$ $V_{DS} = 0V$ $f = 1MHz$		2.0	5.0	Ω
Input Capacitance	C_{iss}	$V_{GS} = 0V$ $V_{DS} = -15V$ $f = 1MHz$		1650		pF
Output Capacitance	C_{oss}			330		
Reverse Transfer Capacitance	C_{rss}			220		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS} = -10V$ $V_{DS} = -15V$ $R_L = 1.3\Omega$ $R_{GEN} = 3\Omega$		10.5		ns
Turn-on Rise Time	t_r			8.5		
Turn-off Delay Time	$t_{d(OFF)}$			30		
Turn-off Fall Time	t_f			11.5		
Body Diode Reverse Recovery Time	t_{rr}	$I_F = -12A$ $dI/dt = 500A/\mu s$		10		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F = -12A$ $dI/dt = 500A/\mu s$		15		nC

电参数曲线图 / Electrical Characteristic Curve

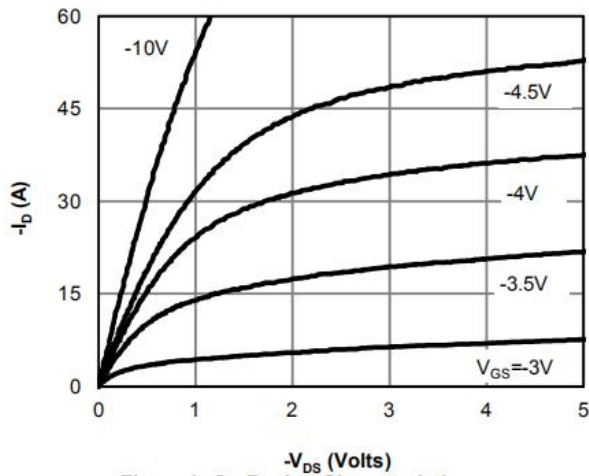


Figure 1: On-Region Characteristics

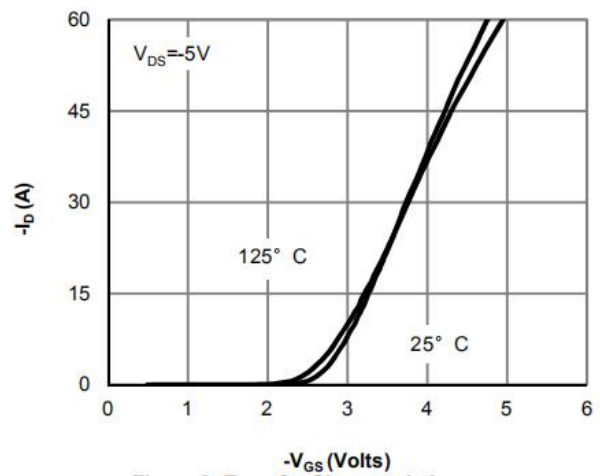


Figure 2: Transfer Characteristics

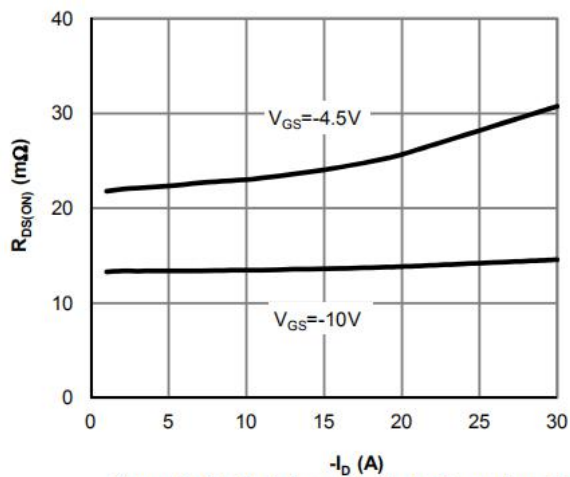


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

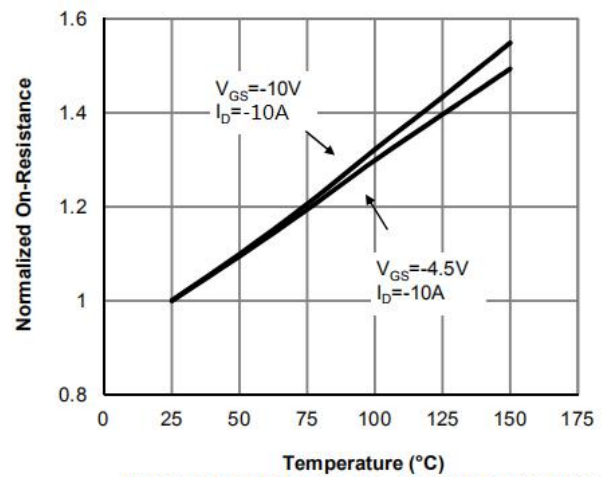


Figure 4: On-Resistance vs. Junction Temperature

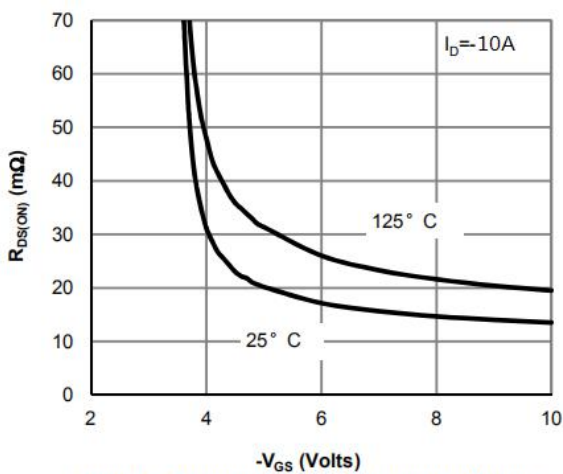


Figure 5: On-Resistance vs. Gate-Source Voltage

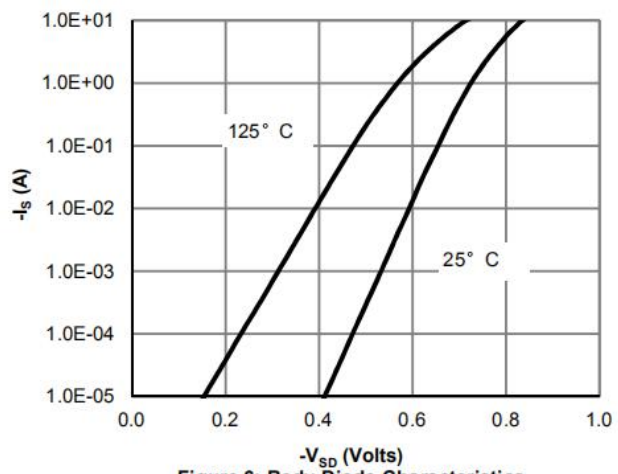
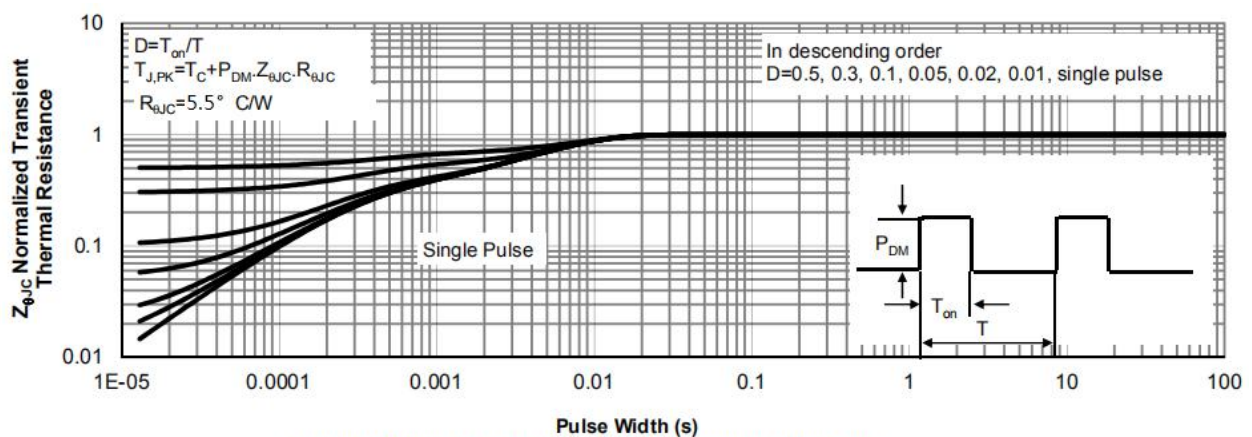
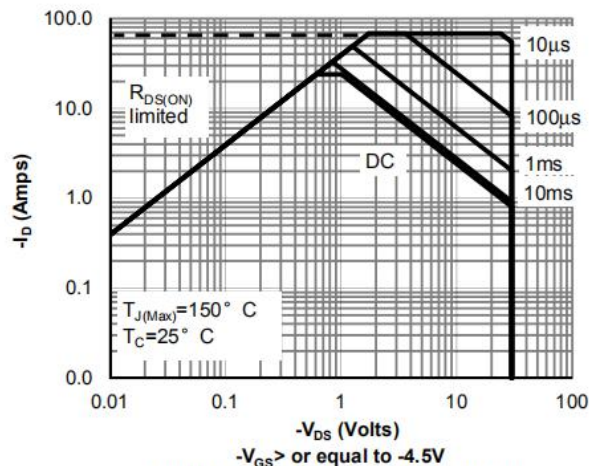
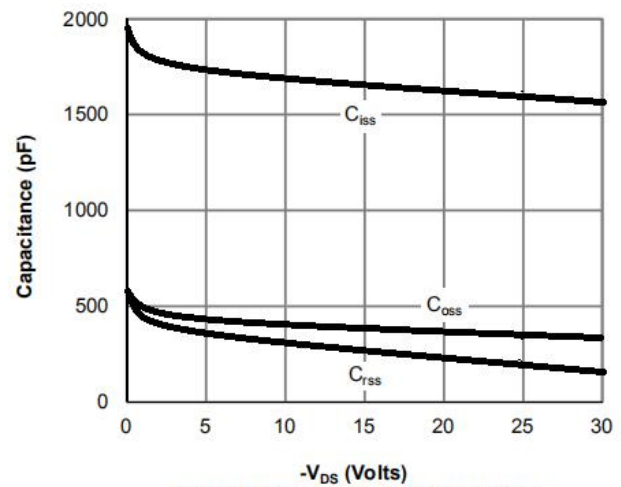
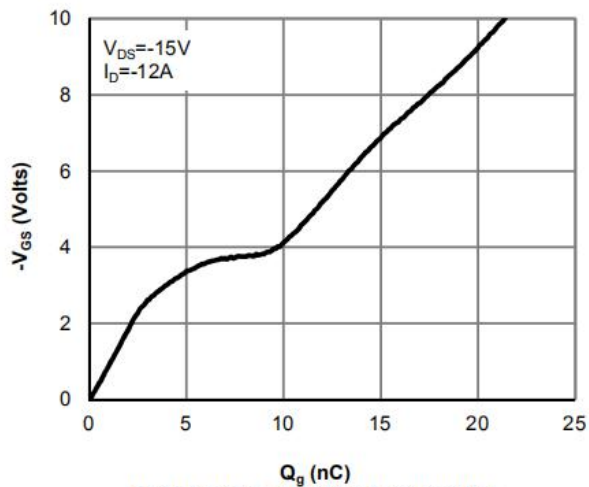


Figure 6: Body-Diode Characteristics

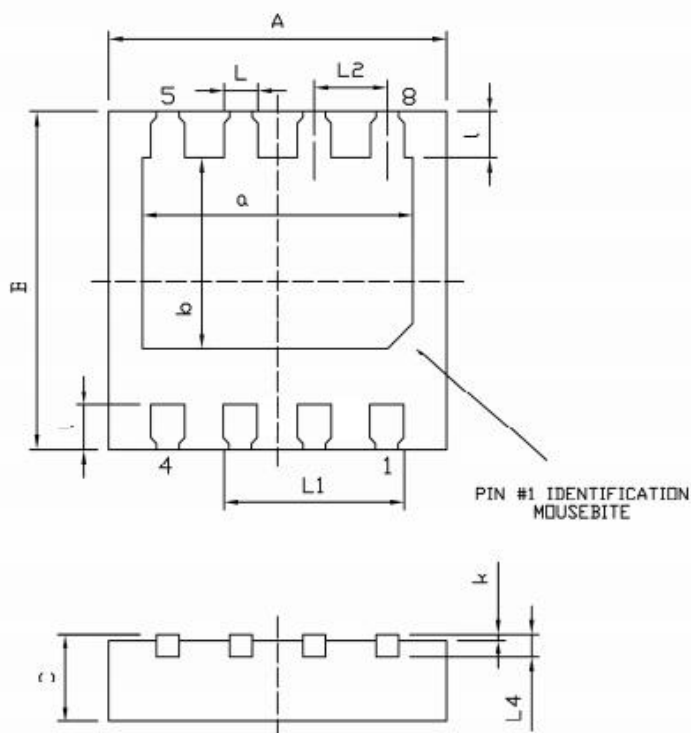
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

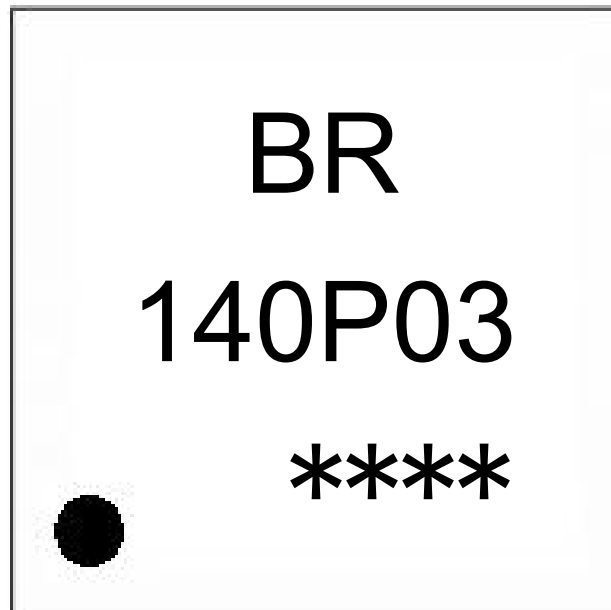
DFN3X3A-8L

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

140P03： 为型号代码

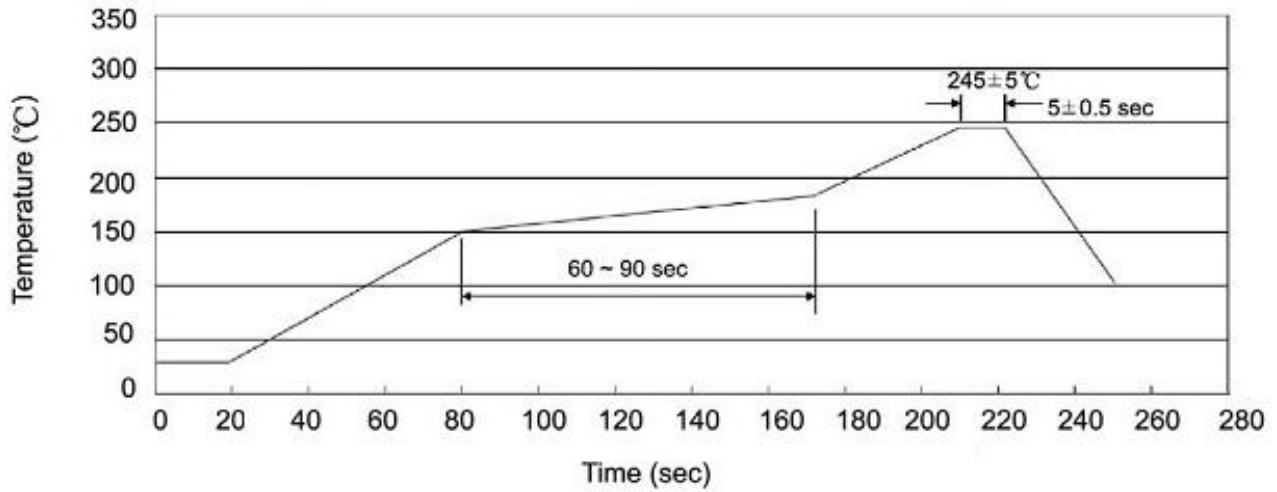
*****： 为生产批号代码，随生产批号变化。

Note:

BR: Company Code.

140P03: 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°C，时间 60 ~ 90sec；
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec；
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

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

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

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: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner 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