描述 / Descriptions

DFN 2×2B-6L 塑封封装 P 沟道 MOS 场效应管。
P-Channel Enhancement Mode Field Effect Transistor in a DFN 2×2B-6L Plastic Package.

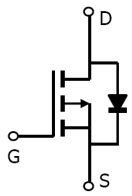
特征 / Features

V_{DS} (V) = -20V I_D = -12A
$R_{DS(ON)}$@-4.5V≤17mΩ(Type.14.5mΩ)
$R_{DS(ON)}$@-2.5V≤25mΩ(Type.18mΩ)
$R_{DS(ON)}$@-1.8V≤38mΩ(Type.24.5mΩ)
无卤产品。HF Product.

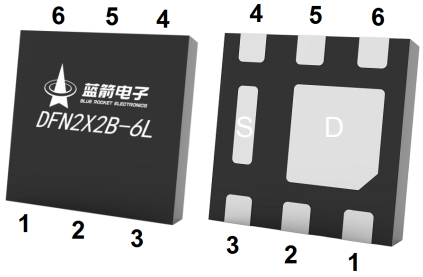
用途 / Applications

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	D
Pin2	D
Pin3	G
Pin4	S
Pin5	D
Pin6	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}	-20	V
Gate-Source Voltage		V_{GSS}	±12	V
Continuous Drain Current		I_D (T_a=25°C)	-12	A
Pulsed Drain Current		I_{DM}	-44	A
Avalanche Current		I_{AS}	-13	A
Avalanche energy L=0.5mH		E_{AS}	59	mJ
Power Dissipation for Single Operation		P_D (T_a=25℃)	3.0	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 ~ 150	℃
Thermal Resistance-Junction to Ambient	t≦10s	$R_{\theta JA}$	40	℃/W
	Steady State		75	℃/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	-20	-23		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V V_{GS}=0V			-1.0	μA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±12V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V I_D=-10A		14.5	17	mΩ
		V_{GS}=-2.5V I_D=-5A		18	25	
		V_{GS}=-1.8V I_D=-1A		24.5	38	
Diode Forward Voltage	V_{SD}	I_S=-1A V_{GS}=0V			-1.2	V
Total Gate Charge	Q_g	V_{GS}=-4.5V V_{DS}=-6V I_D=-8A		12.7		nC
Gate-Source Charge	Q_{gs}			1.7		
Gate-Drain Charge	Q_{gd}			3.4		
Gate resistance	Rg	V_{GS}=0V, V_{DS}=0V, f=1MHz		13.5		
Input Capacitance	C_{iss}	V_{GS}=0V V_{DS}=-20V f=1MHz		2550		pF
Output Capacitance	C_{oss}			205		
Reverse Transfer Capacitance	C_{rss}			190		
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-4.5V V_{DS}=-6V R_L=0.75Ω R_{GEN}=3Ω		11		ns
Turn-on Rise Time	t_r			25		
Turn-off Delay Time	$t_{d(OFF)}$			70		
Turn-off Fall Time	t_f			41.5		

电参数曲线图 / Electrical Characteristic Curve

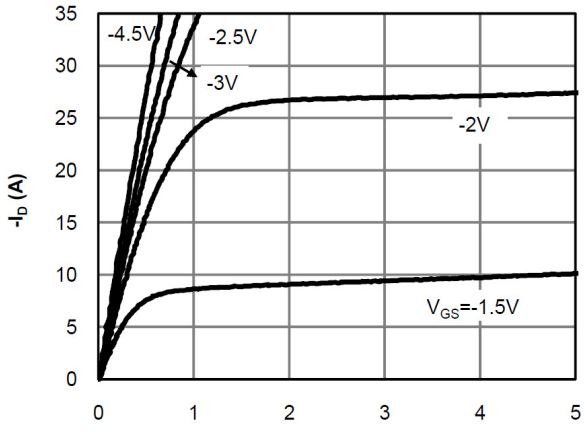


Fig 1: On-Region Characteristics

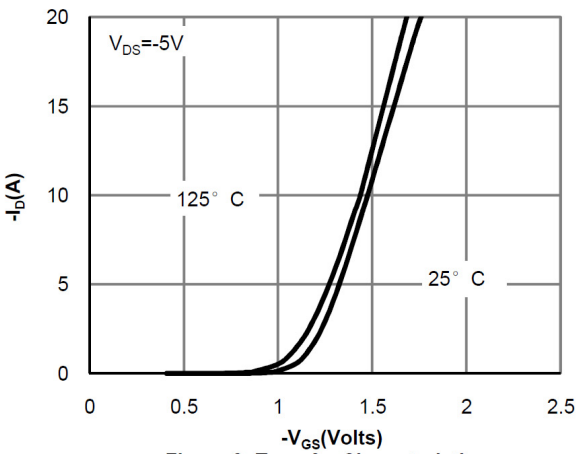


Figure 2: Transfer Characteristics

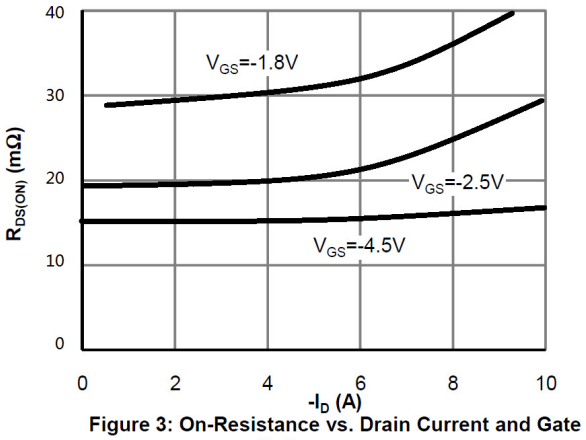


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

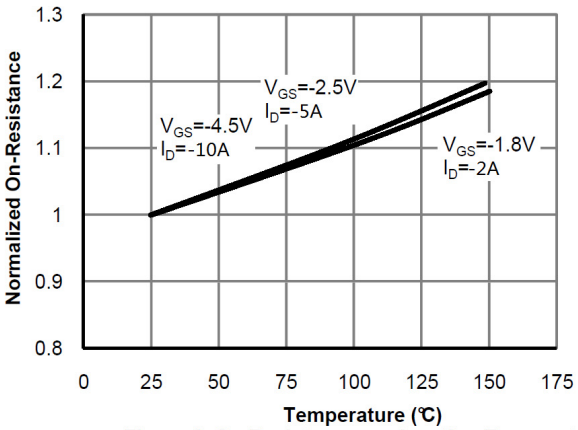


Figure 4: On-Resistance vs. Junction Temperature

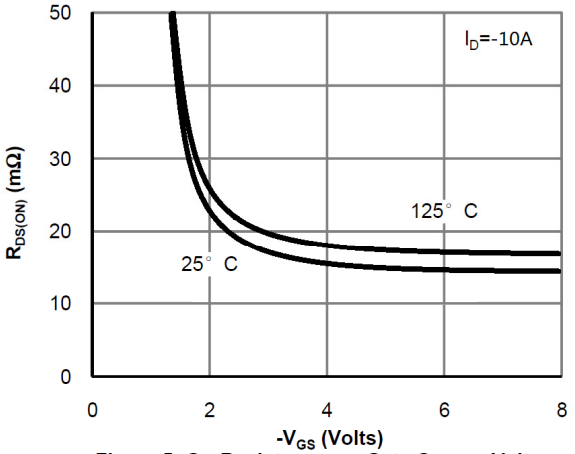


Figure 5: On-Resistance vs. Gate-Source Voltage

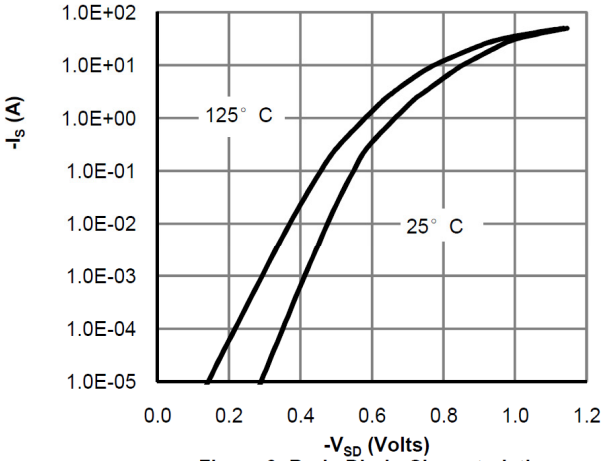


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

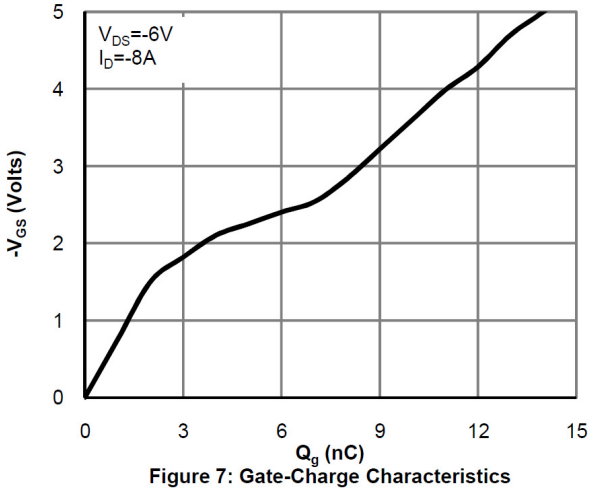


Figure 7: Gate-Charge Characteristics

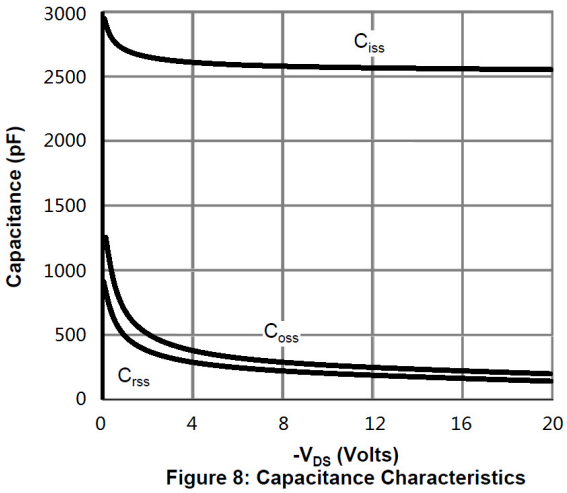
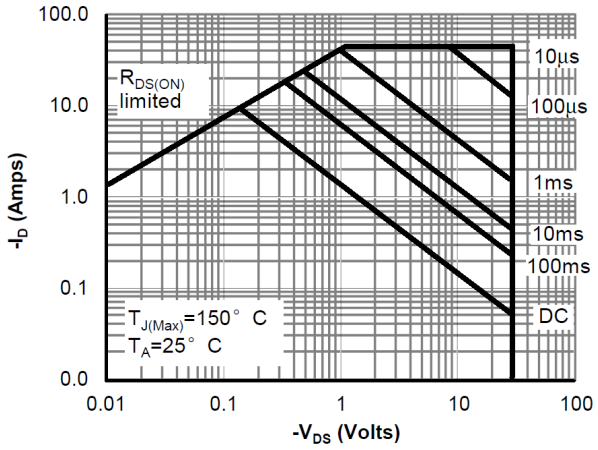


Figure 8: Capacitance Characteristics



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

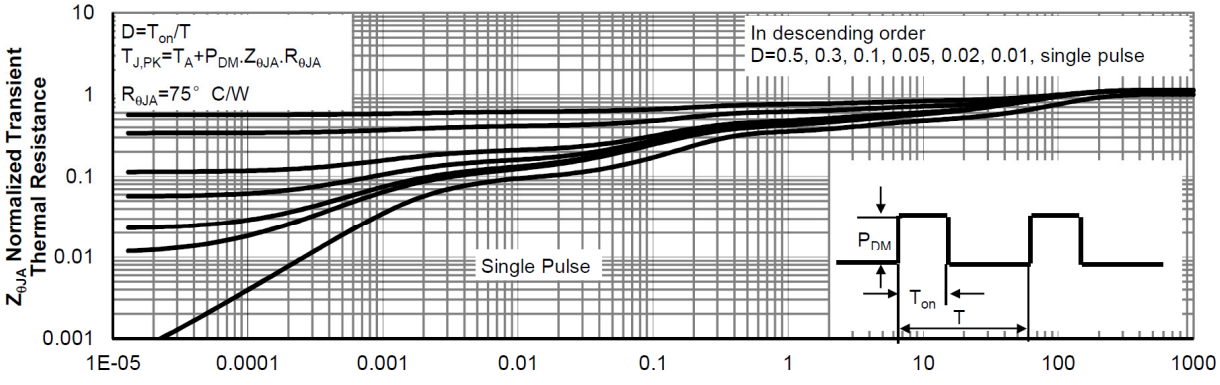
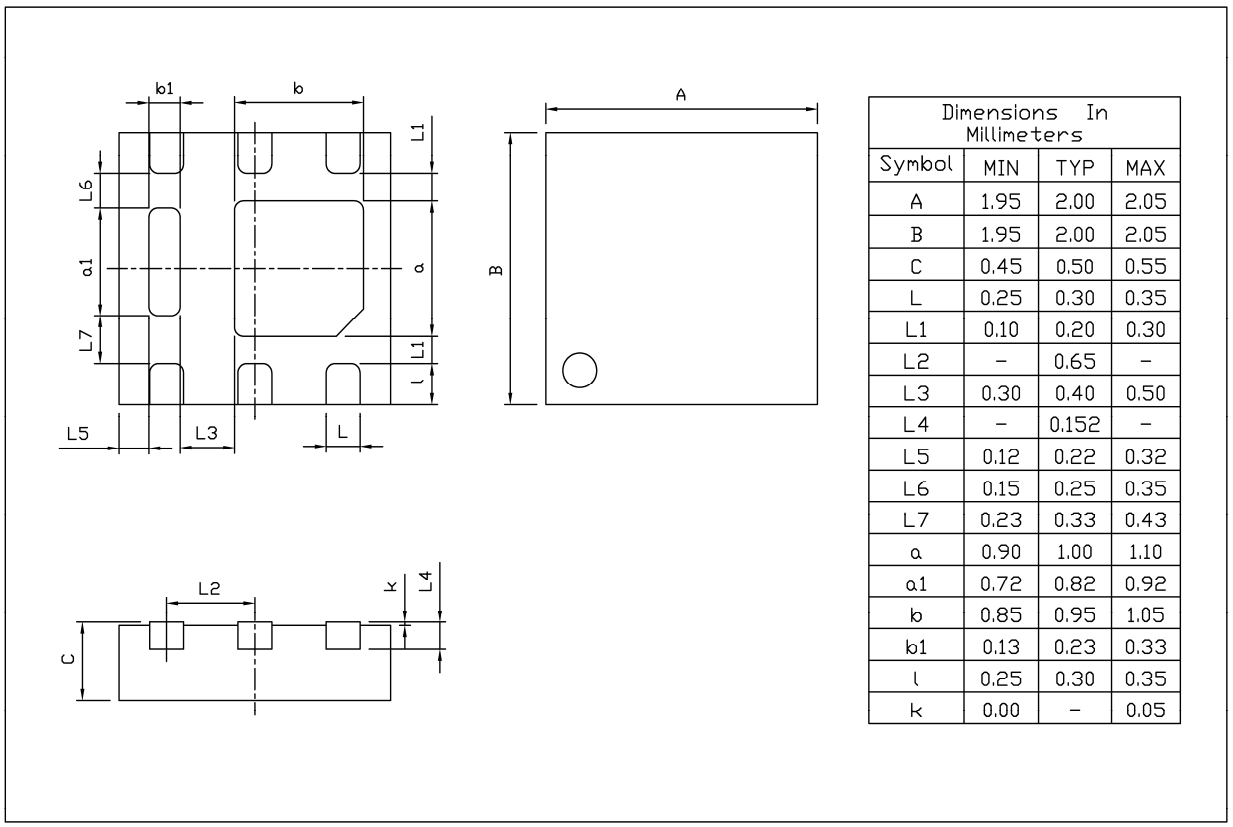


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

DFN2×2B-6L-0.5 Unit:mm



Dimensions In Millimeters			
Symbol	MIN	TYP	MAX
A	1.95	2.00	2.05
B	1.95	2.00	2.05
C	0.45	0.50	0.55
L	0.25	0.30	0.35
L1	0.10	0.20	0.30
L2	-	0.65	-
L3	0.30	0.40	0.50
L4	-	0.152	-
L5	0.12	0.22	0.32
L6	0.15	0.25	0.35
L7	0.23	0.33	0.43
a	0.90	1.00	1.10
a1	0.72	0.82	0.92
b	0.85	0.95	1.05
b1	0.13	0.23	0.33
l	0.25	0.30	0.35
k	0.00	-	0.05

Rev.01 202006

印章说明 / Marking Instructions

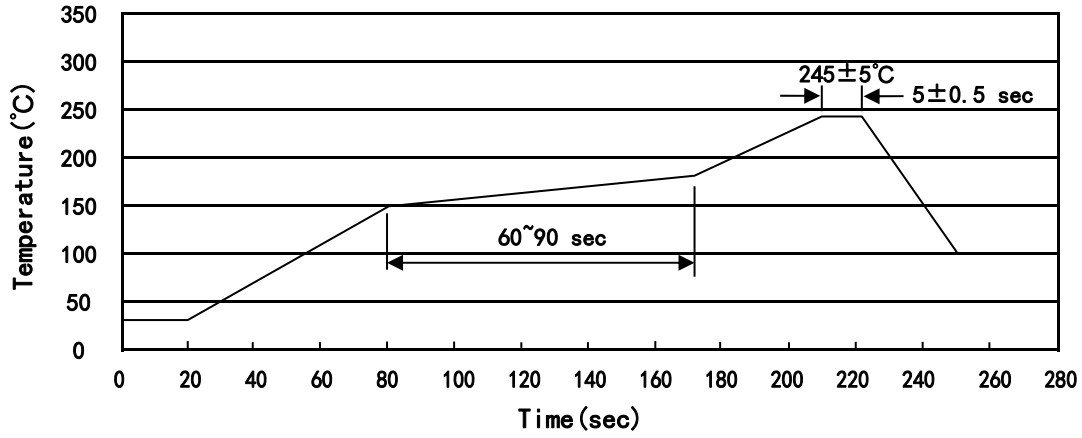
说明：

BR：	为公司代码
150P02：	为型号代码
**** ：	为生产批号代码，随生产批号变化

Note:

BR:	Company Code
150P02:	Product Type Code
****:	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	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
DFN2×2B-6L	4,000	10	40,000	4	160,000	7″ ×8	210×205×205	445×435×230

使用说明 / Notices