

# BRCS150P016ZJ

Rev.A Oct.-2024

## 描述 / Descriptions

DFN2×2B-6L 塑封封装 P 沟道 MOS 场效应管。

P-Channel Enhancement Mode Field Effect Transistor in a DFN2×2B-6L Plastic Package.

## 特征 / Features

$V_{DS} (V) = -16V$      $I_D = -12A$

$R_{DS(ON)}@-4.5V \leq 15m\Omega$  (Type. 13m $\Omega$ )

$R_{DS(ON)}@-2.5V \leq 25m\Omega$  (Type. 18m $\Omega$ )

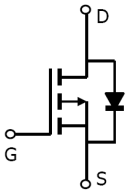
无卤产品。HF Product.

## 用途 / Applications

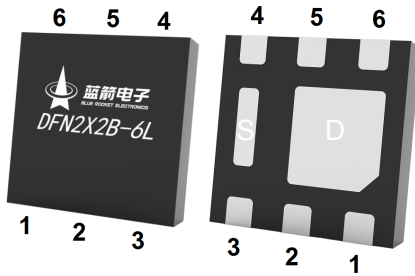
用于电源管理，便携式设备和电池供电系统。

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°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit	
Drain-Source Voltage	V <sub>DSS</sub>	-16	V	
Gate-Source Voltage	V <sub>GSS</sub>	±10	V	
Continuous Drain Current	I <sub>D</sub> (T <sub>a</sub> =25°C)	-12	A	
Pulsed Drain Current	I <sub>DM</sub>	-42	A	
Power Dissipation for Single Operation	P <sub>D</sub> (T <sub>a</sub> =25°C)	3.0	W	
Maximum Junction Temperature	T <sub>j</sub>	150	°C	
Storage Temperature Range	T <sub>stg</sub>	-55 ~ 150	°C	
Thermal Resistance-Junction to Ambient	t <sub>≤10s</sub>	R <sub>θJA</sub>	41.7	°C/W
	Steady State		75	°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 <sub>DSS</sub>	I <sub>D</sub> =-250μA V <sub>GS</sub> =0V	-16	-19		V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-16V V <sub>GS</sub> =0V			-1.0	μA
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V V <sub>GS</sub> =±10V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250μA	-0.3	-0.7	-1.5	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-4.5V I <sub>D</sub> =-10A		13	15	mΩ
		V <sub>GS</sub> =-2.5V I <sub>D</sub> =-5A		18	25	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A V <sub>GS</sub> =0V			-1.2	V
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		10		
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V V <sub>DS</sub> =-8V f=1MHz		1750		pF
Output Capacitance	C <sub>oss</sub>			300		
Reverse Transfer Capacitance	C <sub>rss</sub>			250		
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V V <sub>DS</sub> =-6V I <sub>D</sub> =-10A		13		nC
Gate-Source Charge	Q <sub>gs</sub>			1.9		
Gate-Drain Charge	Q <sub>gd</sub>			3.5		

## 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
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-4.5V$ $V_{DS}=-6V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		11.3		ns
Turn-on Rise Time	$t_r$			25.4		
Turn-off Delay Time	$t_{d(OFF)}$			72		
Turn-off Fall Time	$t_f$			43.5		

电参数曲线图 / Electrical Characteristic Curve

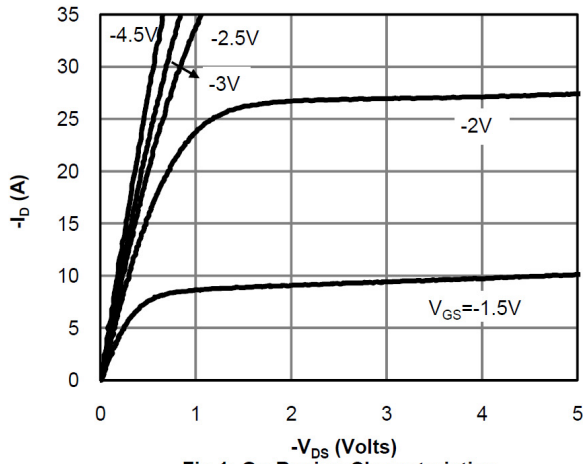


Fig 1: On-Region Characteristics

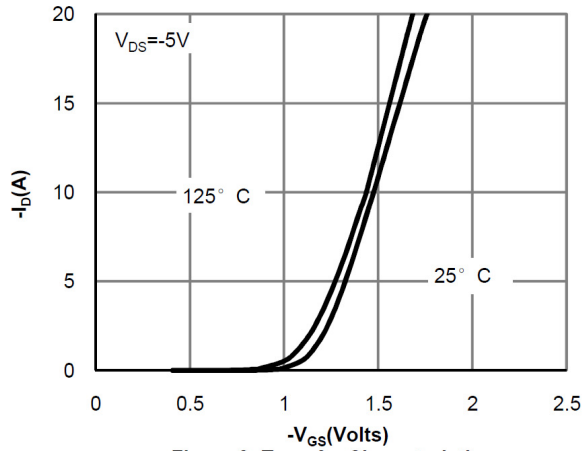


Figure 2: Transfer Characteristics

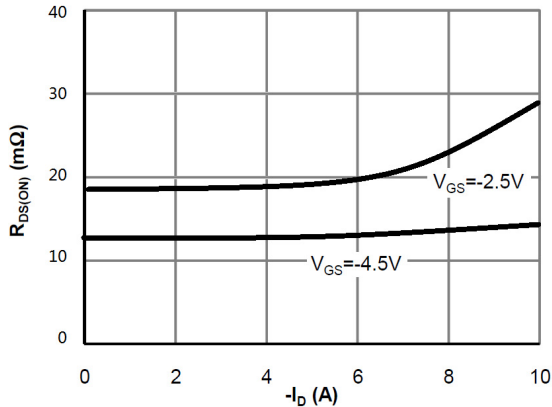


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

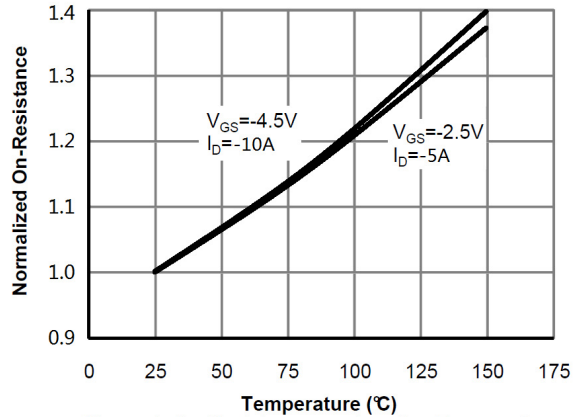


Figure 4: On-Resistance vs. Junction Temperature

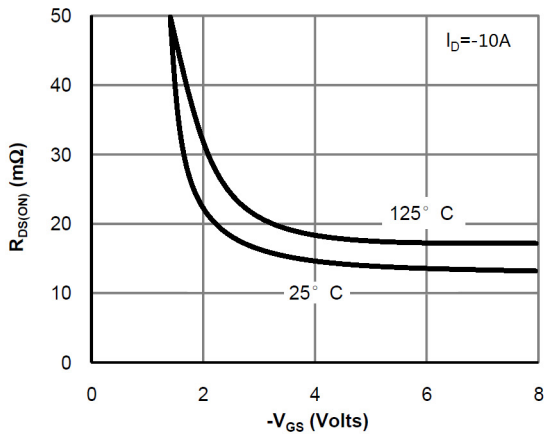


Figure 5: On-Resistance vs. Gate-Source Voltage

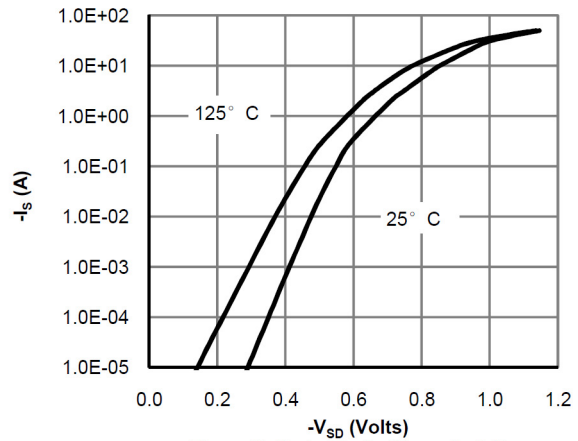


Figure 6: Body-Diode Characteristics

## 电参数曲线图 / Electrical Characteristic Curve

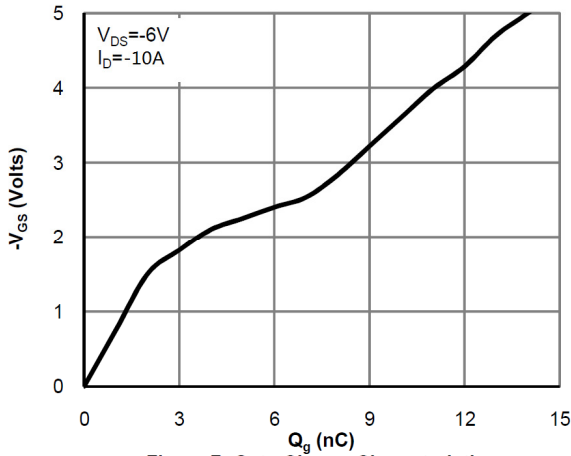


Figure 7: Gate-Charge Characteristics

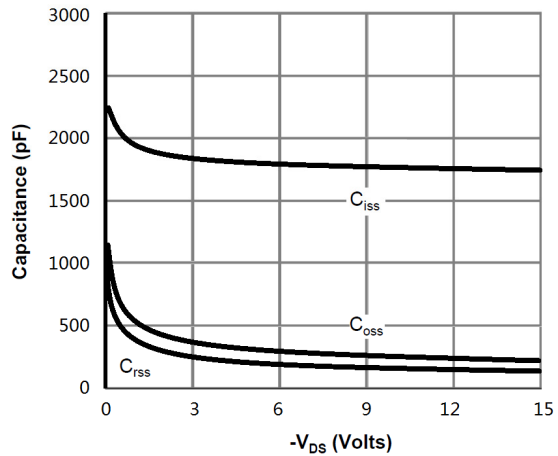


Figure 8: Capacitance Characteristics

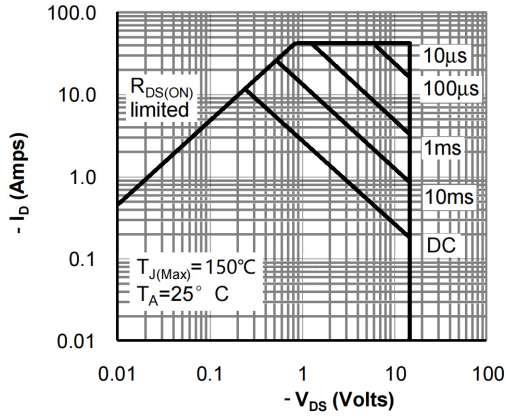


Figure 9: Maximum Forward Biased Safe Operating Area

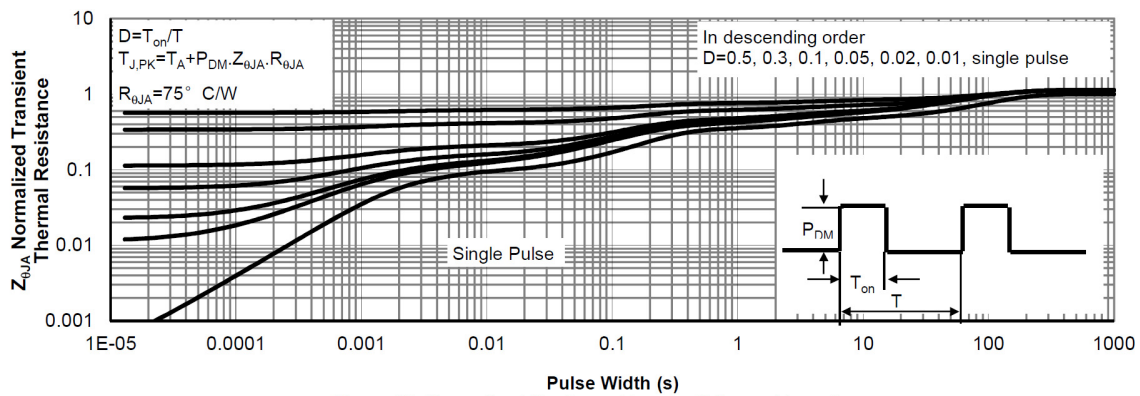


Figure 10: Normalized Maximum Transient Thermal Impedance

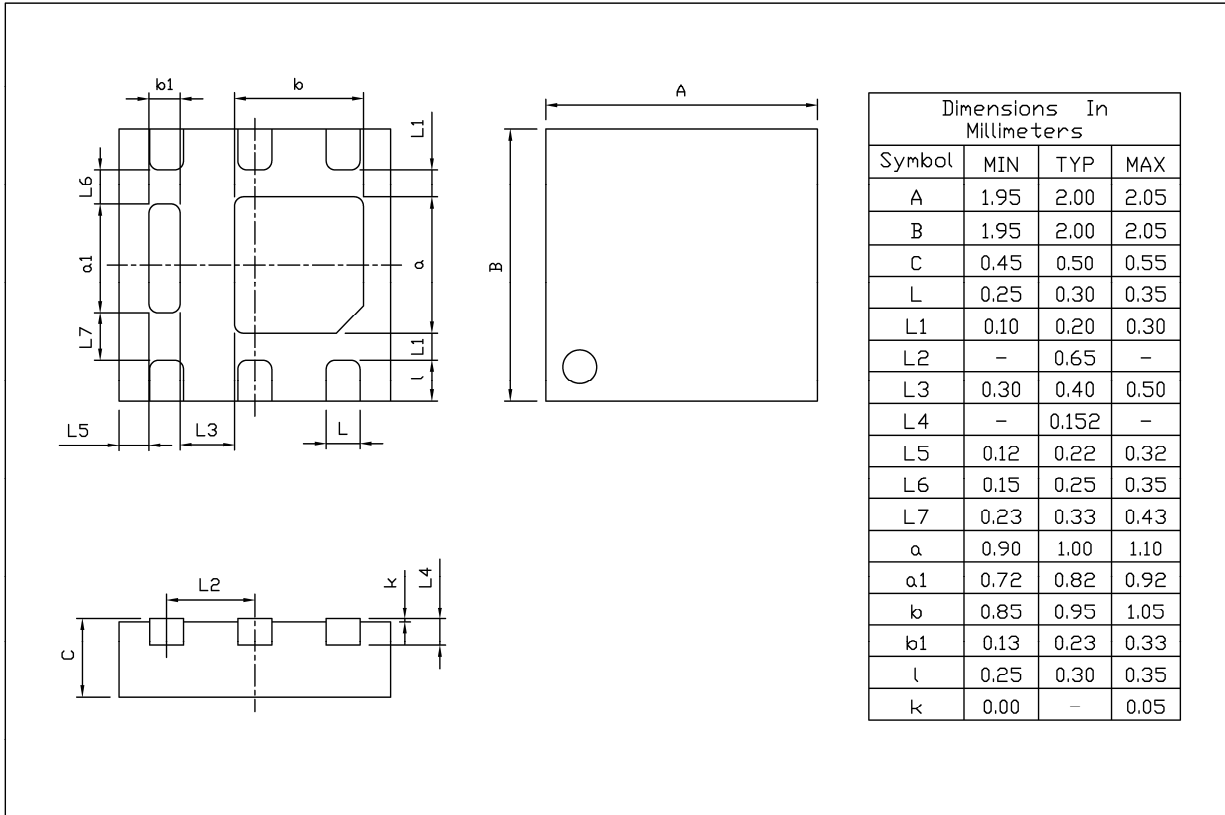
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## 外形尺寸图 / Package Dimensions

DFN2 x2B-6L-0.5

Unit:mm



Rev.01 202006

印章说明 / Marking Instructions



说明：

BR： 为公司代码

150P016： 为型号代码

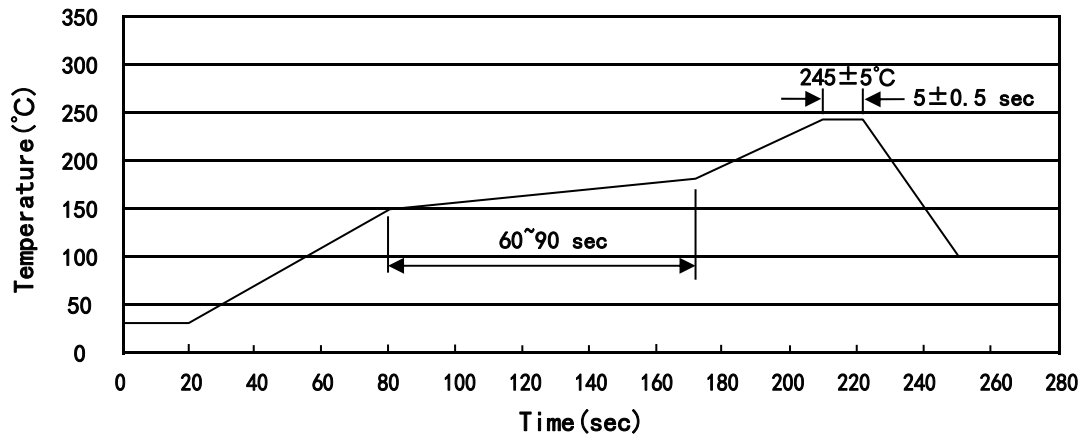
\*\*\*\*： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

150P016: 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°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 <sup>3</sup> )		
	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**