

# BRCS150P02ZJ

Rev.A Apr.-2022

## 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

$V_{DS} (V) = -20V$

$I_D = -11A$

$R_{DS(ON)}@-4.5V \leq 17m\Omega$  (Type.15m $\Omega$ )

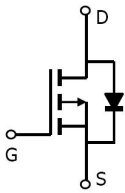
无卤产品。HF Product.

## 用途 / Applications

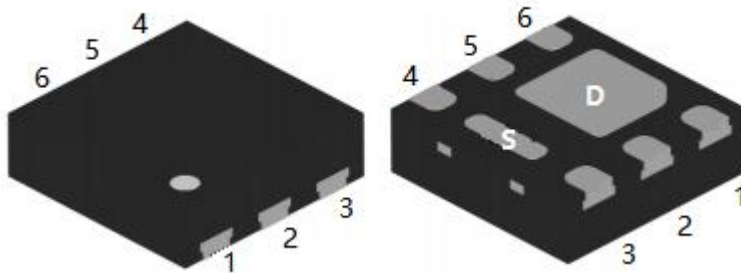
用于电源管理，便携式设备和电池供电系统。

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	$V_{DSS}$	-20	V	
Gate-Source Voltage	$V_{GSS}$	$\pm 12$	V	
Continuous Drain Current	$I_D (T_a=25^\circ\text{C})$	-11	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	$P_D (T_a=25^\circ\text{C})$	3.0	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	$t \leq 10\text{s}$	$R_{\theta JA}$	40	$^\circ\text{C/W}$
	Steady State		75	$^\circ\text{C/W}$

## 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	$BV_{DSS}$	$I_D=-250\mu A$ $V_{GS}=0V$	-20	-23		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V$ $V_{GS}=0V$			-1.0	$\mu A$
Gate-Body leakage current	$I_{GSS}$	$V_{DS}=0V$ $V_{GS}=\pm 12V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V$ $I_D=-10A$		15	17	m $\Omega$
		$V_{GS}=-2.5V$ $I_D=-5A$		19	25	
		$V_{GS}=-1.8V$ $I_D=-1A$		27	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	$R_g$	$V_{GS}=0V$ , $V_{DS}=0V$ , $f=1MHz$		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	$t_{d(ON)}$	$V_{GS}=-4.5V$ $V_{DS}=-6V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		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

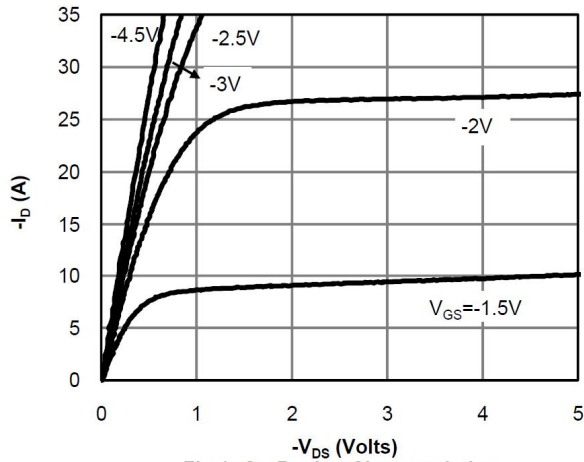


Fig 1: On-Region Characteristics

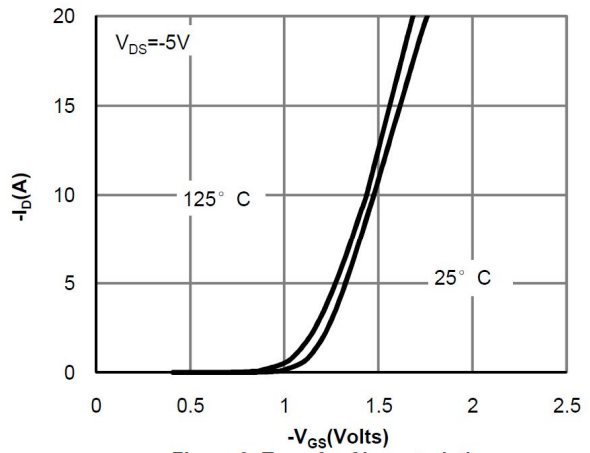


Figure 2: Transfer Characteristics

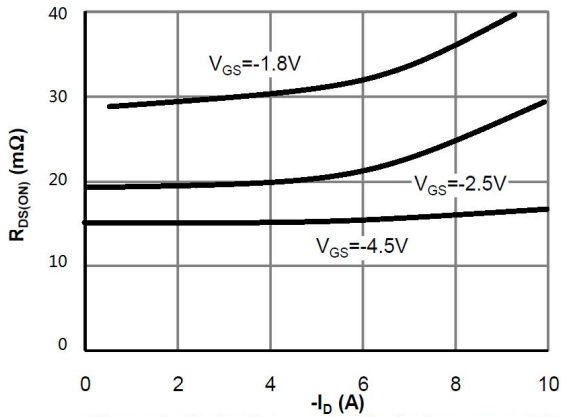


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

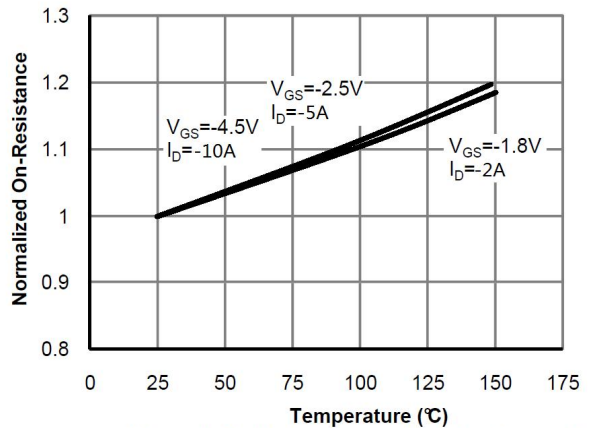


Figure 4: On-Resistance vs. Junction Temperature

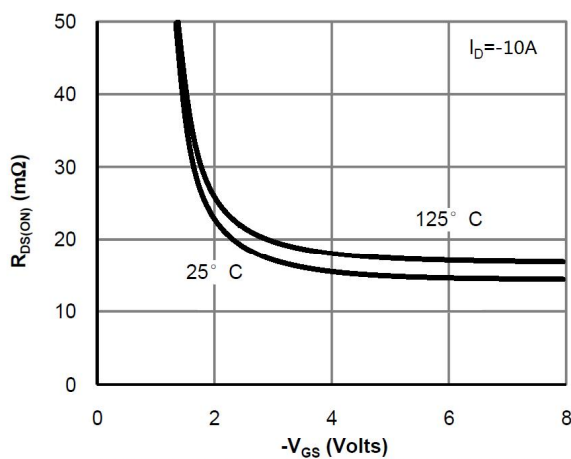


Figure 5: On-Resistance vs. Gate-Source Voltage

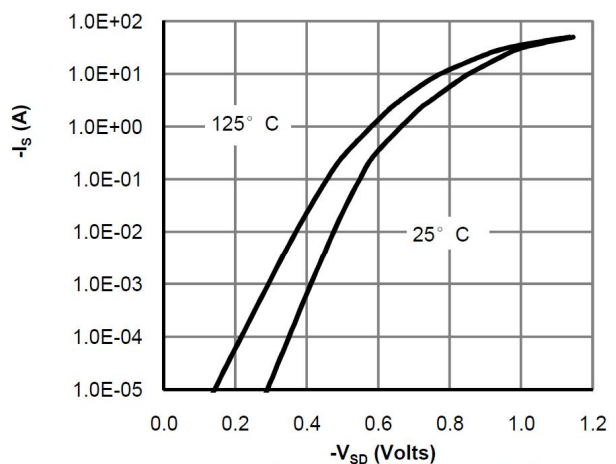
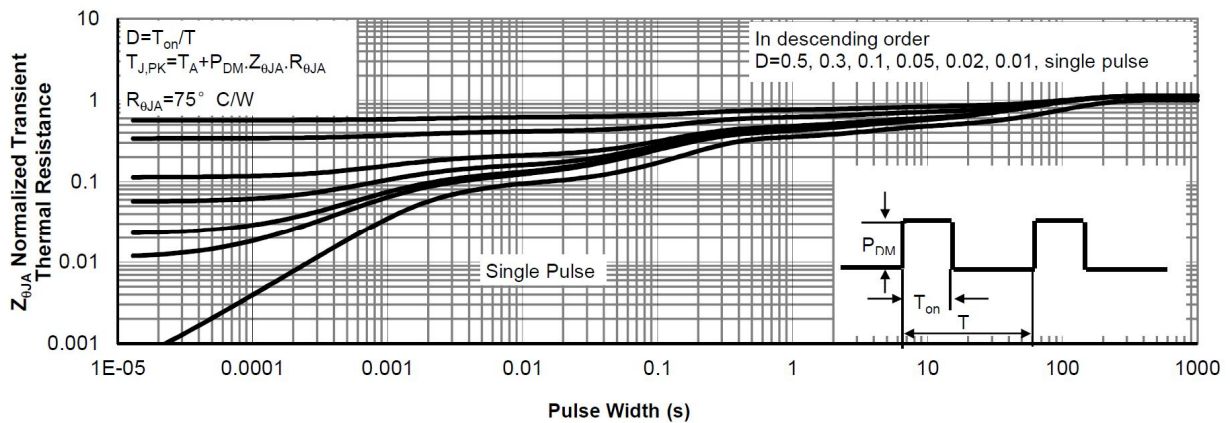
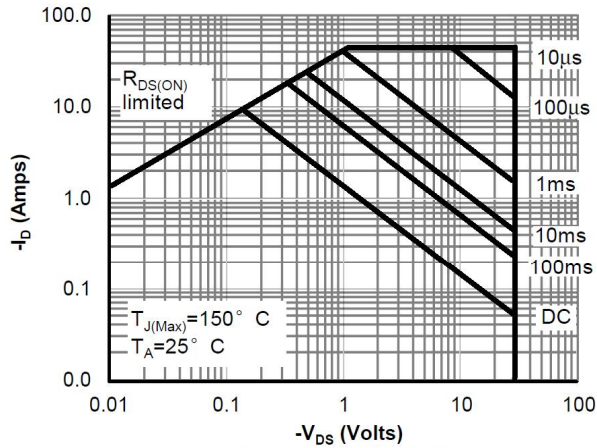
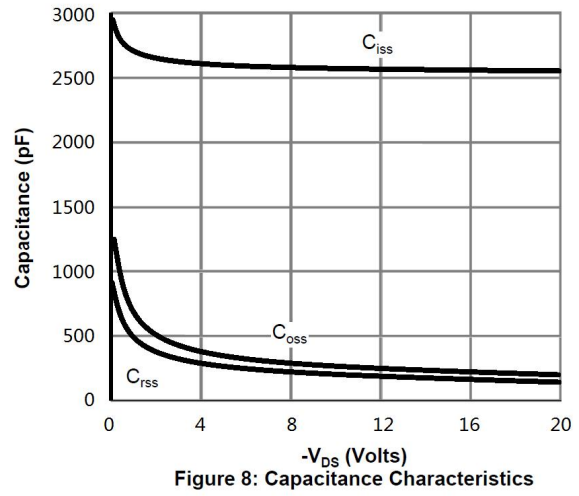
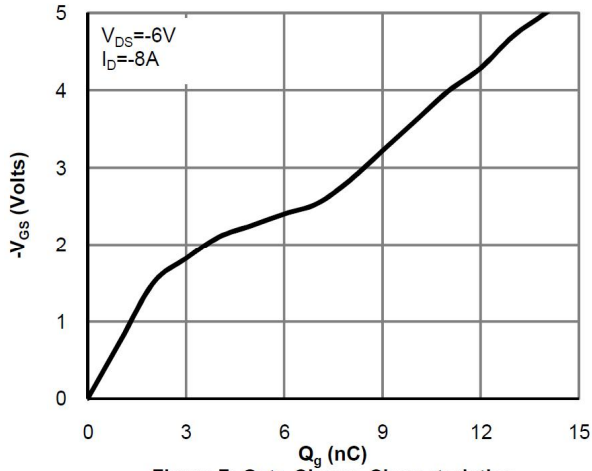


Figure 6: Body-Diode Characteristics

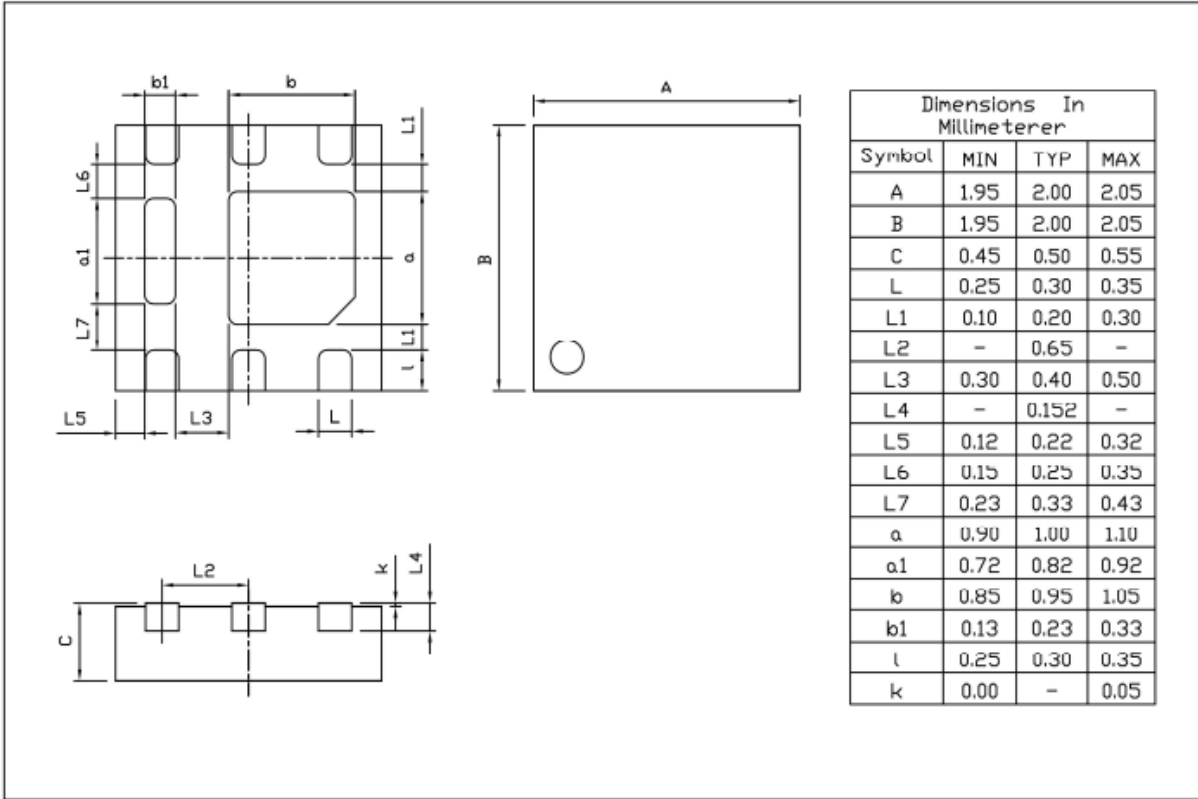
**电参数曲线图 / Electrical Characteristic Curve**



**外形尺寸图 / Package Dimensions**

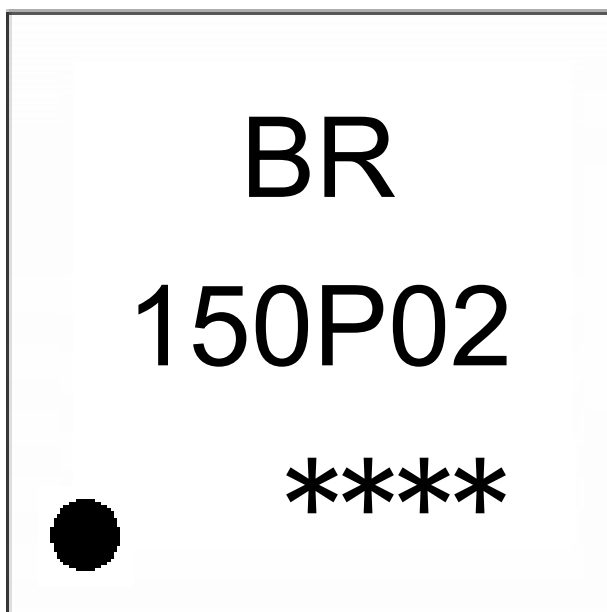
DFN2×2B-6L-0.5

Unit:mm



Rev.01 202006

印章说明 / Marking Instructions



说明：

BR： 为公司代码

150P02： 为型号代码

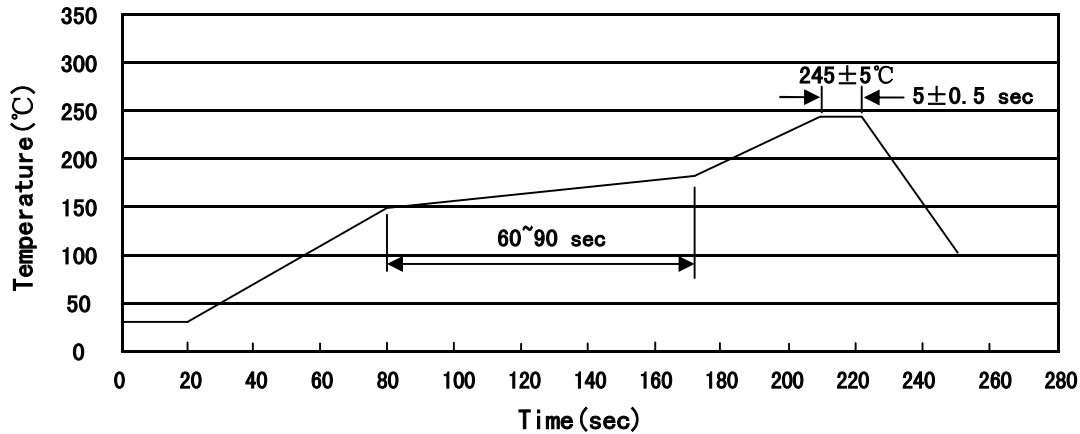
\*\*\*\*： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

150P02: Product Type

\*\*\*\*: 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
DFN 2×2B-6L	4,000	10	40,000	4	160,000	7" ×8	210×205×205	445×230×435

**使用说明 / Notices**



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