

# BRCS200P03ZJ

Rev.A Sep.-2023

## 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

$V_{DS}(V)=-30V$   $I_D=-7.8A$

$R_{DS(ON)}<22m\Omega$  ( $V_{GS}=-10V$ )

$R_{DS(ON)}<35m\Omega$  ( $V_{GS}=-4.5V$ )

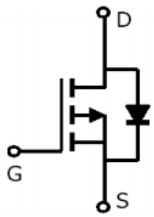
无卤产品。HF Product.

## 用途 / Applications

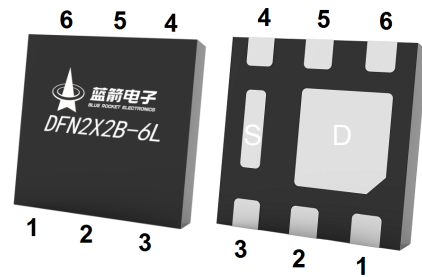
笔记本电脑、便携式设备和电池供电系统的电源管理。

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>DS</sub>	-30	V
Drain Current - Continuous	I <sub>D</sub>	-7.8	A
Drain Current – Pulsed	I <sub>DM</sub>	-29.4	A
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Power Dissipation	P <sub>D</sub>	2	W
Single Pulse Avalanche Energy(L=0.5mH)	E <sub>AS</sub>	152	mJ
Avalanche Current(L=0.5mH)	I <sub>AS</sub>	-19.5	A
Junction and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-55 to 150	°C
Thermal resistance, junction - ambient	t ≤ 10s	62.5	°C/W
	Steady-State	90	

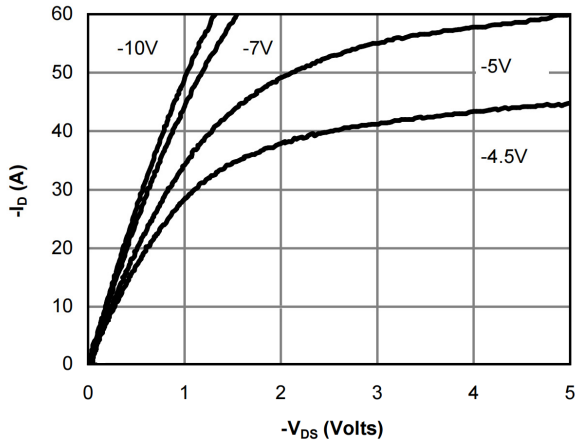
**电性能参数 / Electrical Characteristics(Ta=25°C)**

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	-30	-33		V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V V <sub>GS</sub> =0V			-1	uA
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250μA	-1	-1.3	-2.5	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-10A		19.5	22	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A		28	35	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V			-1.2	V
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-25V V <sub>GS</sub> =0V f=1.0MHz		1430		pF
Output Capacitance	C <sub>oss</sub>			580		
Reverse Transfer Capacitance	C <sub>rss</sub>			350		
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V V <sub>DS</sub> =0V f=1MHz		13		Ω
Total Gate Charge	Q <sub>g(10V)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, I <sub>D</sub> =-7.1A		20		nC
Total Gate Charge	Q <sub>g(4.5V)</sub>			9.8		
Gate Source Charge	Q <sub>gs</sub>			3.7		
Gate Drain Charge	Q <sub>gd</sub>			4.5		

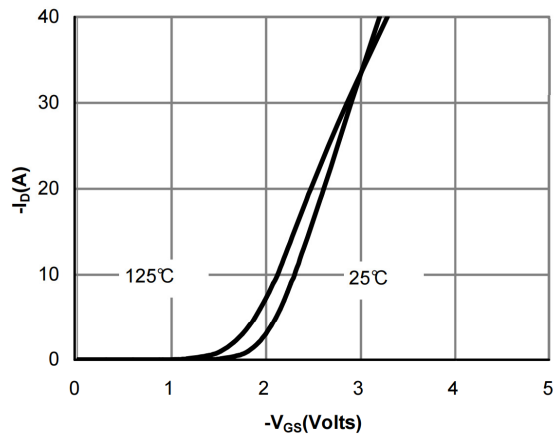
## 电性能参数 / Electrical Characteristics(Ta=25°C)

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	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $R_L=0.75\ \Omega$ $R_{GEN}=3\ \Omega$		11		ns
Turn-On Rise Time	$t_r$			5.6		
Turn-Off Delay Time	$t_{d(off)}$			28		
Turn-Off Fall Time	$t_f$			11		

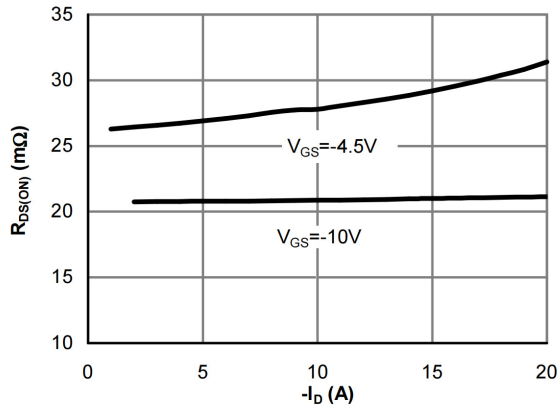
**电参数曲线图 / Electrical Characteristic Curve**



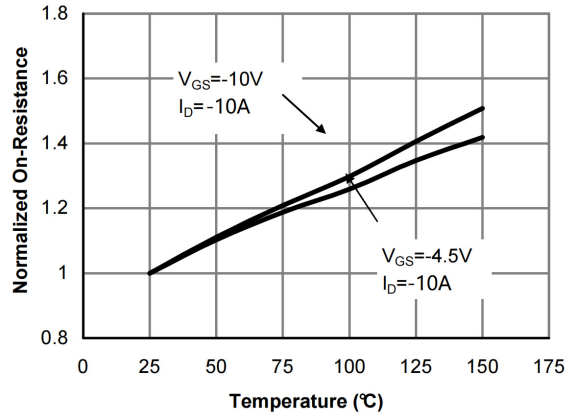
**Fig 1: On-Region Characteristics**



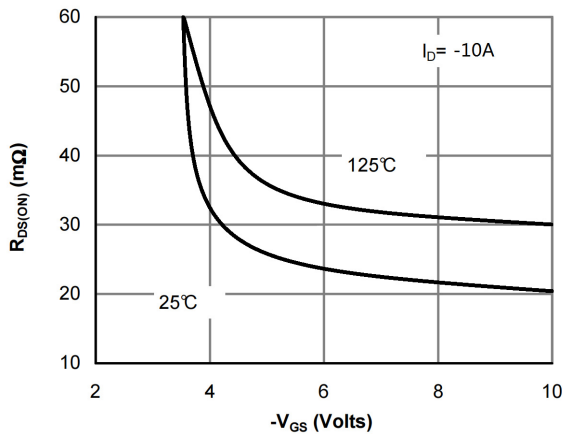
**Figure 2: Transfer Characteristics**



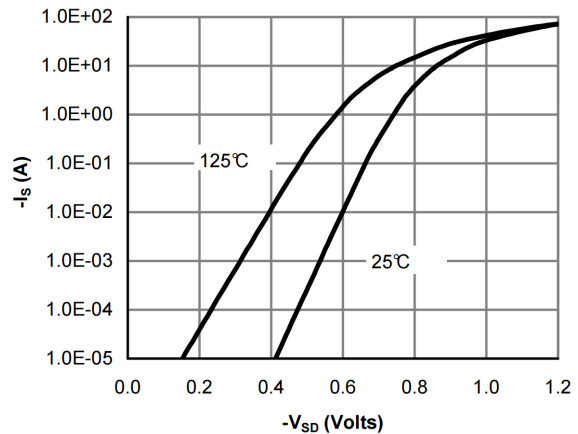
**Figure 3: On-Resistance vs. Drain Current and Gate Voltage**



**Figure 4: On-Resistance vs. Junction Temperature**

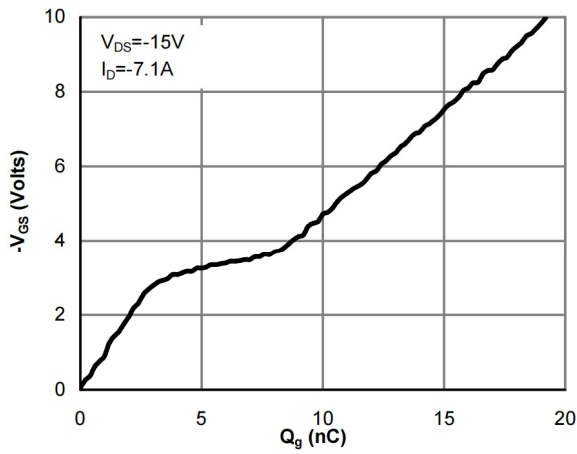


**Figure 5: On-Resistance vs. Gate-Source Voltage**

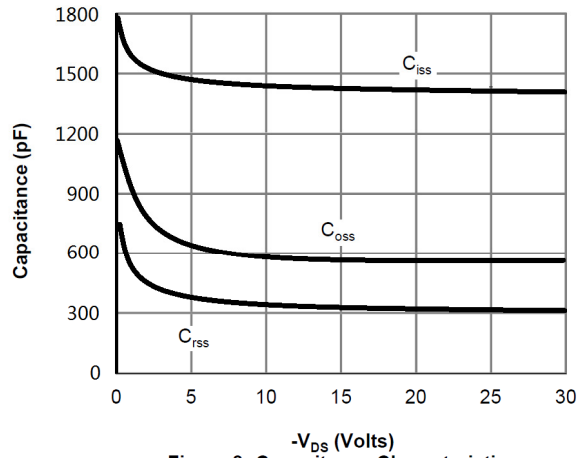


**Figure 6: Body-Diode Characteristics**

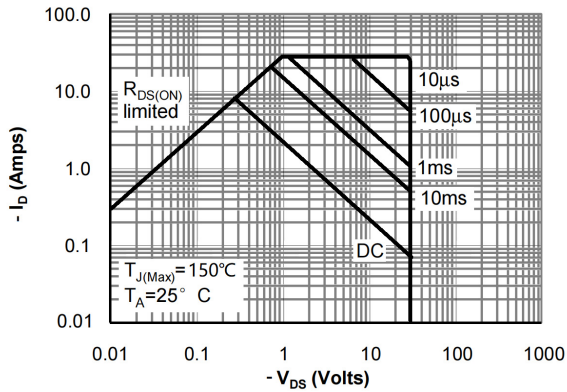
**电参数曲线图 / Electrical Characteristic Curve**



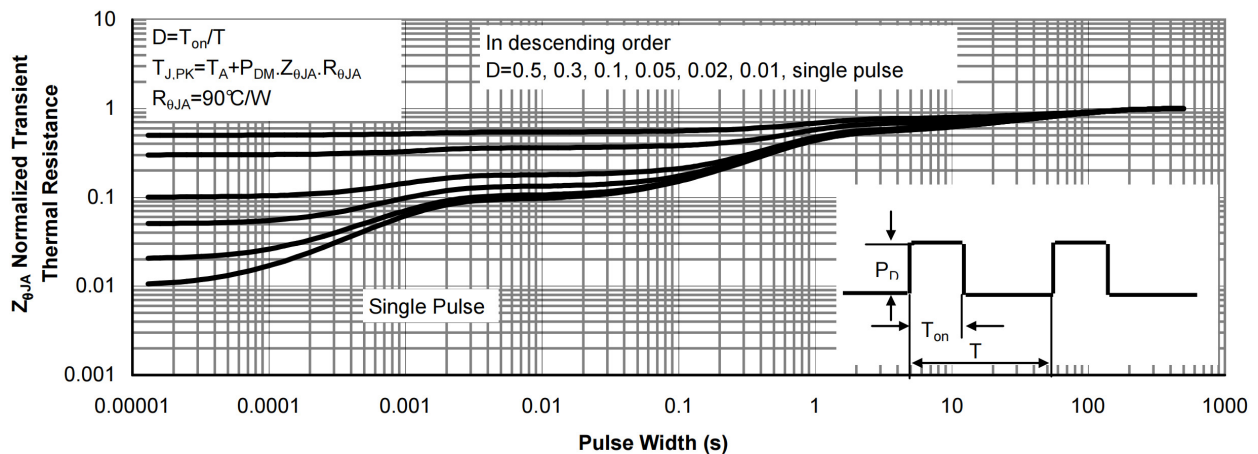
**Figure 7: Gate-Charge Characteristics**



**Figure 8: Capacitance Characteristics**



**Figure 9: Maximum Forward Biased Safe Operating Area**

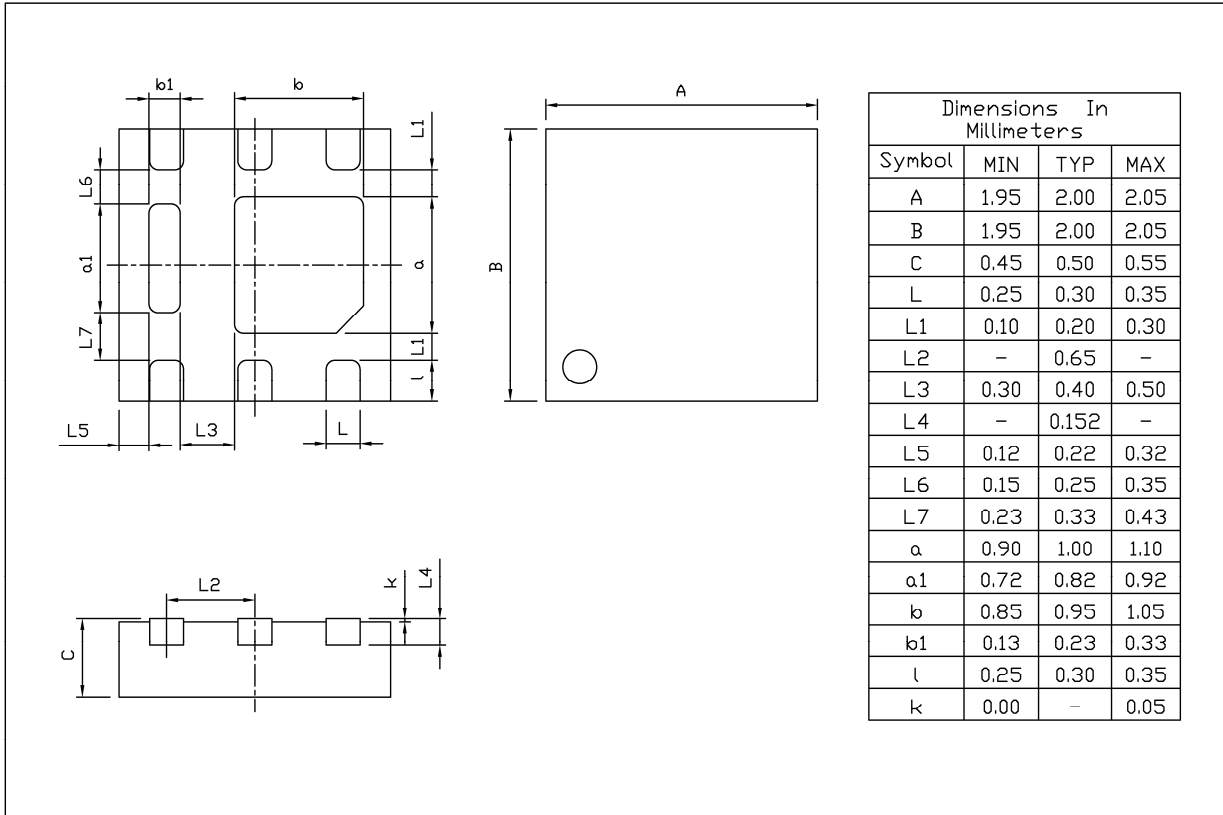


**Figure 10: Normalized Maximum Transient Thermal Impedance**

**外形尺寸图 / Package Dimensions**

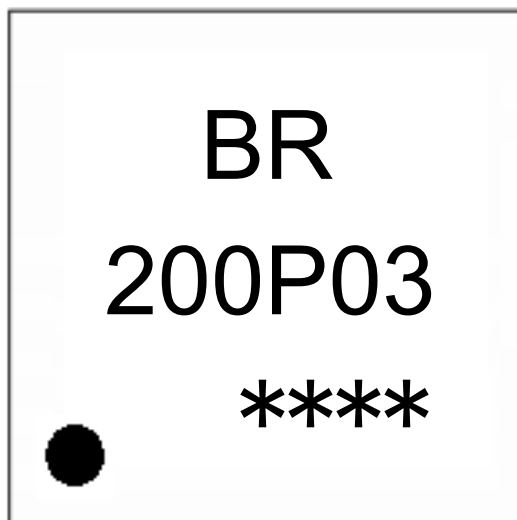
DFN2 x2B-6L-0.5

Unit:mm



Rev.01 202006

**印章说明 / Marking Instructions**



说明：

BR： 为公司代码

200P03： 为型号代码

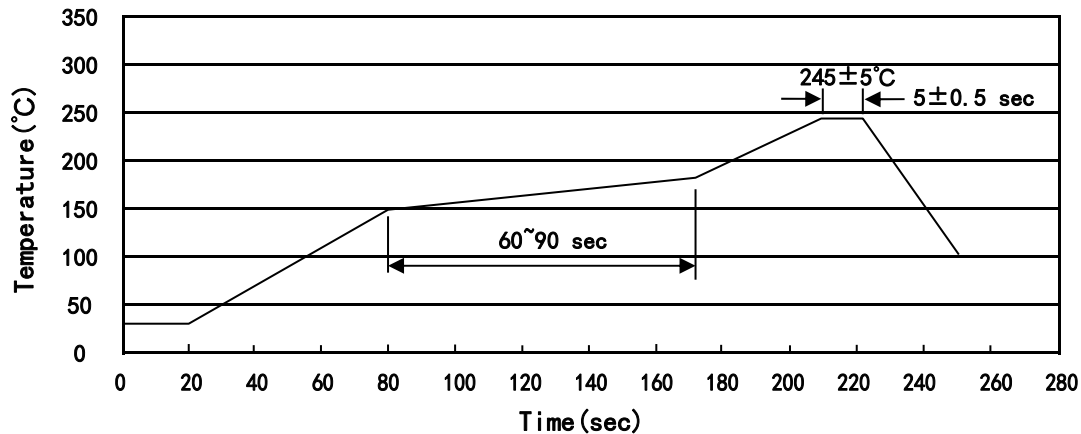
\*\*\*\*： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

200P03: Product Type 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**



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