

BRCS200P012ZJ

Rev.A Jun.-2023

DATA SHEET

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

$V_{DS} (V) = -12V$ $I_D = -20A$

$R_{DS(ON)}@-4.5V \leq 20m\Omega$ (Typ. 17.2m Ω)

$R_{DS(ON)}@-2.5V \leq 30m\Omega$ (Typ. 23.4m Ω)

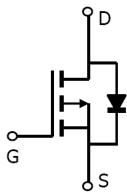
无卤产品。HF Product.

用途 / Applications

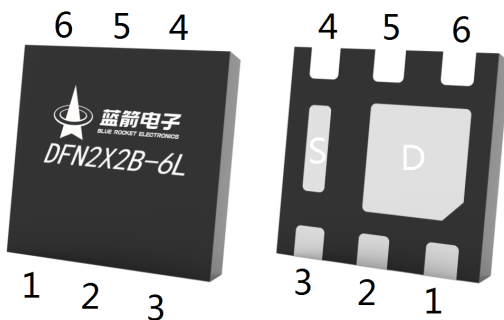
用于电源管理，便携式设备和电池供电系统。

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(Tc=25°C)

| 参数 Parameter | 符号 Symbol | 数值 Rating | 单位 Unit |
|--|------------------|--------------|------------|
| Drain-Source Voltage | V _{DSS} | -12 | V |
| Gate-Source Voltage | V _{GSS} | ±10 | V |
| Continuous Drain Current | I _D | -20 | A |
| Pulsed Drain Current | I _{DM} | -69 | A |
| Power Dissipation for Single Operation | P _D | 20 | W |
| Maximum Junction Temperature | T _j | 150 | °C |
| Storage Temperature Range | T _{stg} | -55 ~ 150 | °C |
| Thermal Resistance-Junction to Ambient | R _{θJA} | 50 | °C/W |
| Thermal Resistance-Junction to Case | R _{θJC} | 6.25 | °C/W |

电性能参数 / Electrical Characteristics(Tc=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} | $I_D=-250\mu A$ $V_{GS}=0V$ | -12 | -17.5 | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-12V$ $V_{GS}=0V$ | | | -1.0 | μA |
| Gate-Body leakage current | I_{GSS} | $V_{DS}=0V$ $V_{GS}=\pm 8V$ | | | ± 100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=-250\mu A$ | -0.5 | -0.7 | -1.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}=-4.5V$ $I_D=-3.0A$ | | 17.2 | 20 | m Ω |
| | | $V_{GS}=-2.5V$ $I_D=-3.0A$ | | 23.4 | 30 | |
| | | $V_{GS}=-1.8V$ $I_D=-2.0A$ | | 35 | 50 | |
| Diode Forward Voltage | V_{SD} | $I_S=-1A$ $V_{GS}=0V$ | | | -1.2 | V |
| Gate resistance | R_g | $V_{GS}=0V$, $V_{DS}=0V$, $f=1MHz$ | | 14 | | Ω |
| Input Capacitance | C_{iss} | $V_{GS}=0V$ $V_{DS}=-6V$ $f=1MHz$ | | 1700 | | pF |
| Output Capacitance | C_{oss} | | | 580 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 250 | | |
| Total Gate Charge | Q_g | $V_{GS}=-4.5V$ $V_{DS}=-6V$ $I_D=-8A$ | | 13 | | nC |
| Gate-Source Charge | Q_{gs} | | | 1.8 | | |
| Gate-Drain Charge | Q_{gd} | | | 3.5 | | |
| Turn-on Delay Time | $t_{d(ON)}$ | $V_{GS}=-4.5V$ $V_{DS}=-6V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$ | | 11.5 | | ns |
| Turn-on Rise Time | t_r | | | 25.3 | | |
| Turn-off Delay Time | $t_{d(OFF)}$ | | | 72 | | |
| Turn-off Fall Time | t_f | | | 42 | | |

电参数曲线图 / Electrical Characteristic Curve

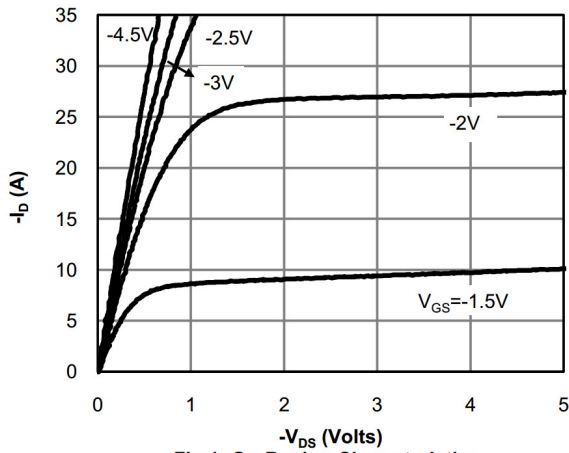


Fig 1: On-Region Characteristics

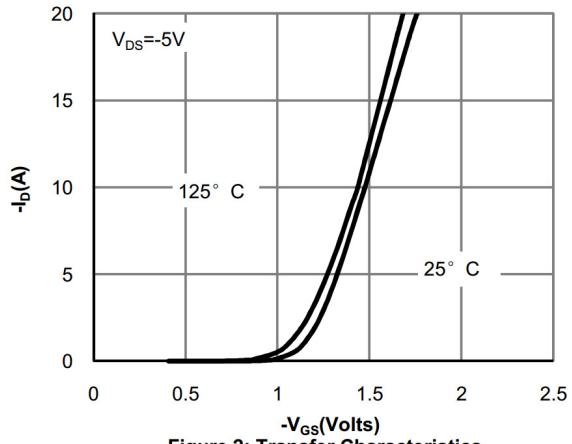


Figure 2: Transfer Characteristics

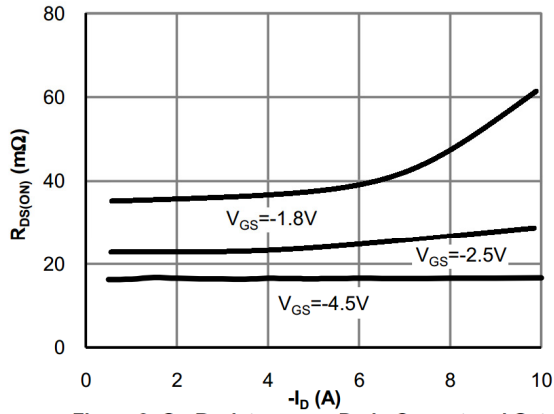


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

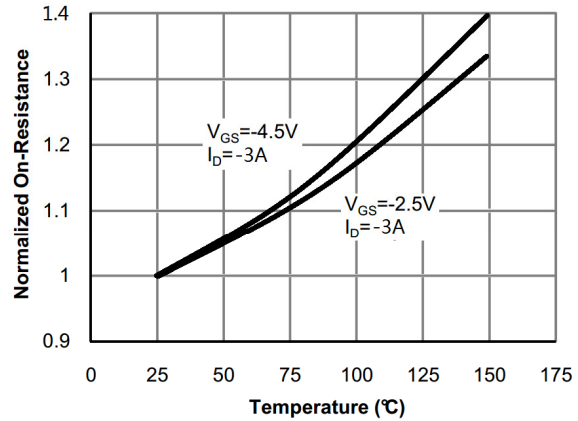


Figure 4: On-Resistance vs. Junction Temperature

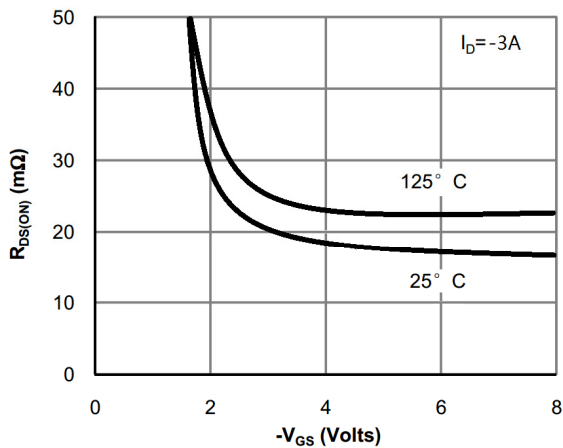


Figure 5: On-Resistance vs. Gate-Source Voltage

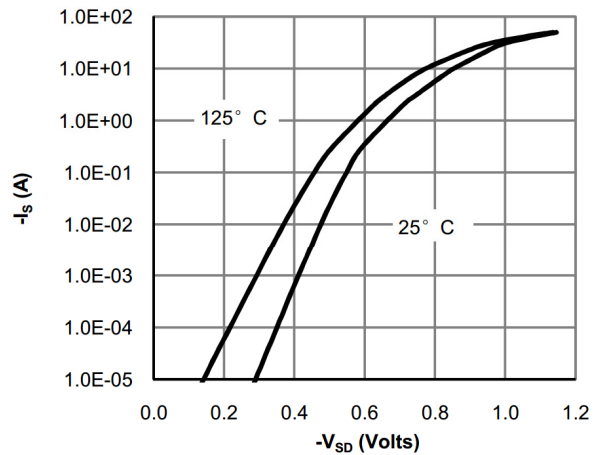


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

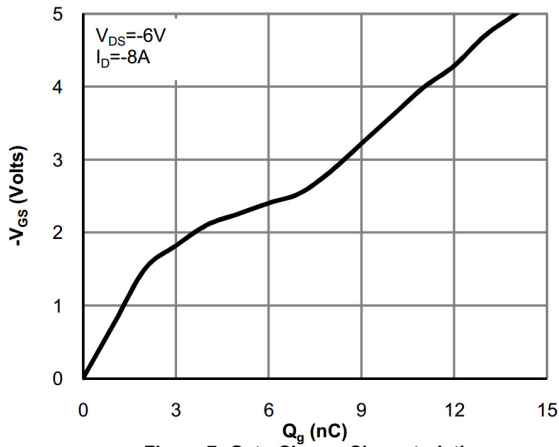


Figure 7: Gate-Charge Characteristics

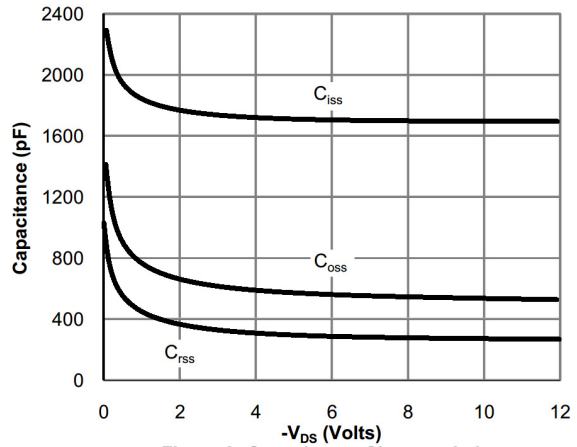


Figure 8: Capacitance Characteristics

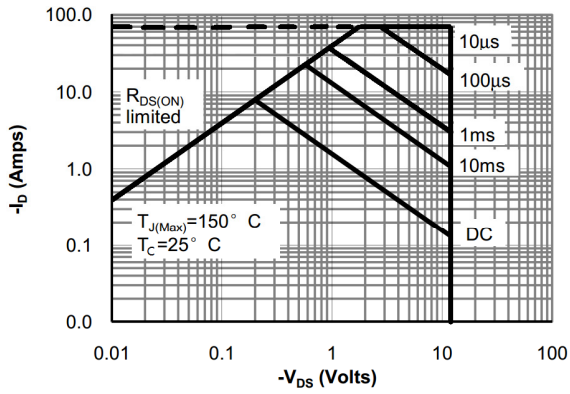


Figure 9: Maximum Forward Biased Safe Operating Area

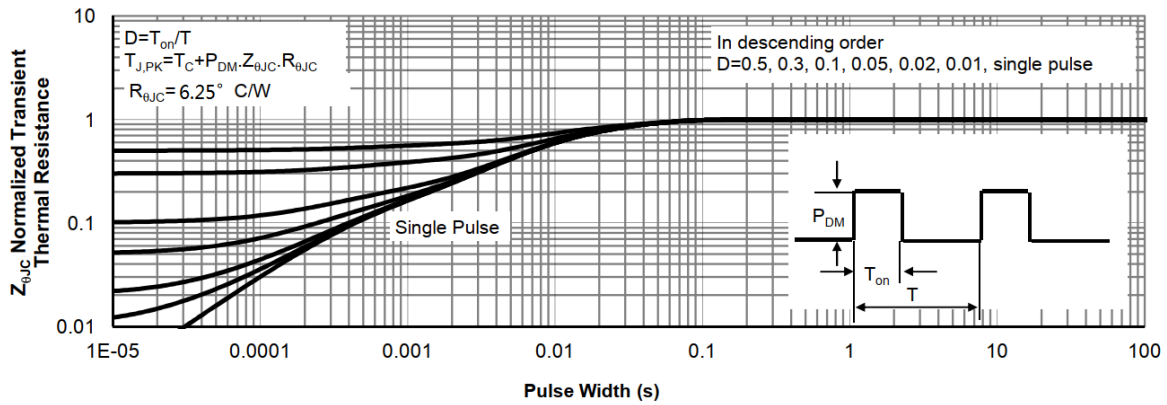
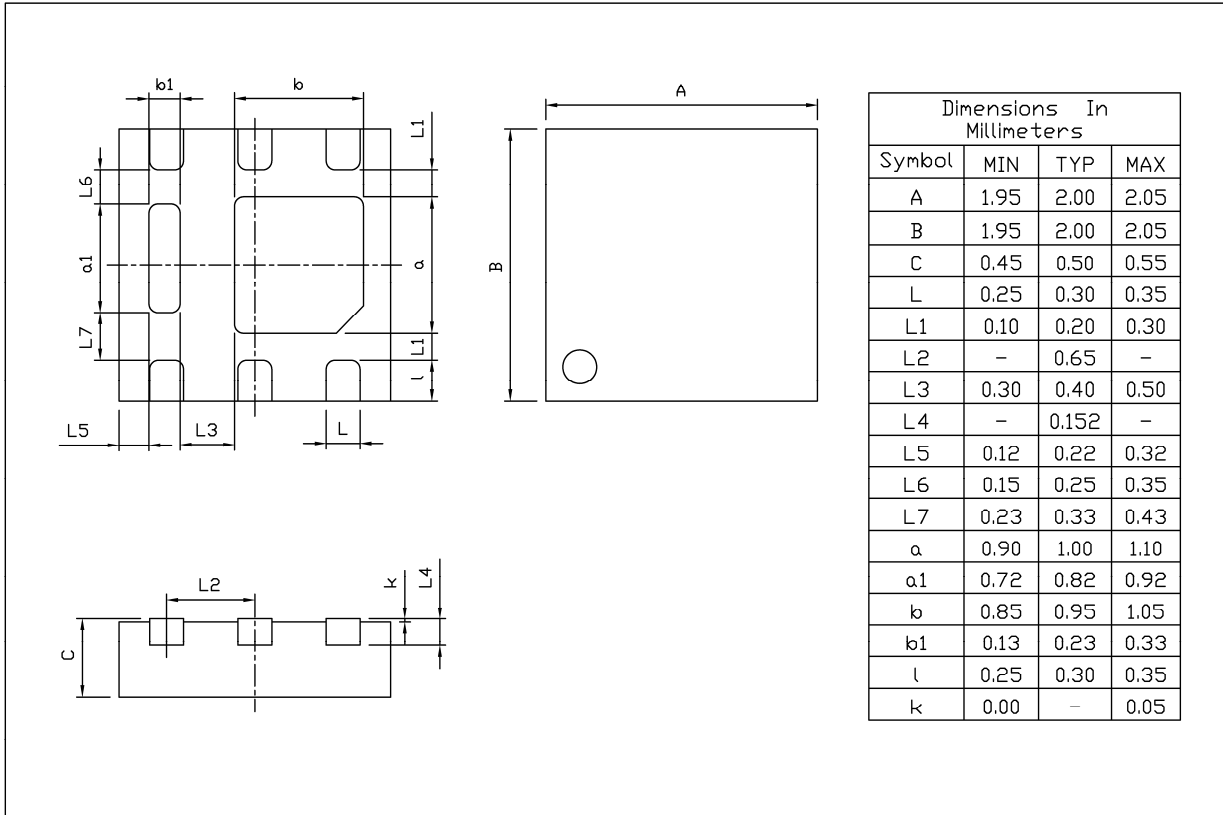


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

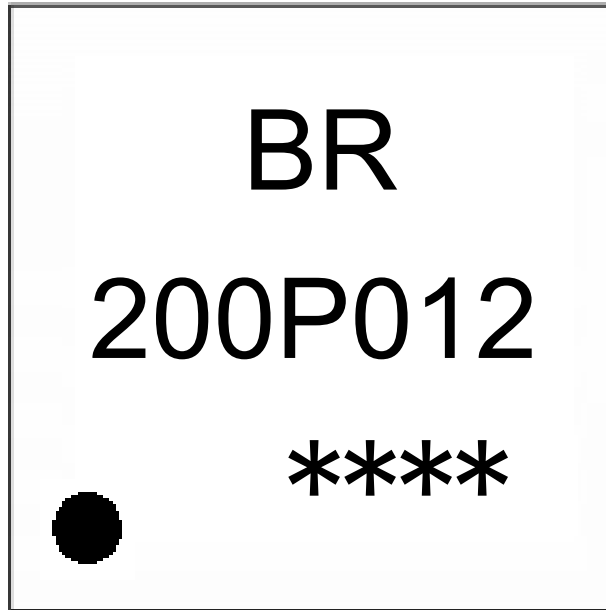
DFN2 x2B-6L-0.5

Unit:mm



Rev.01 202006

印章说明 / Marking Instructions



说明：

BR： 为公司代码

200P012： 为型号代码

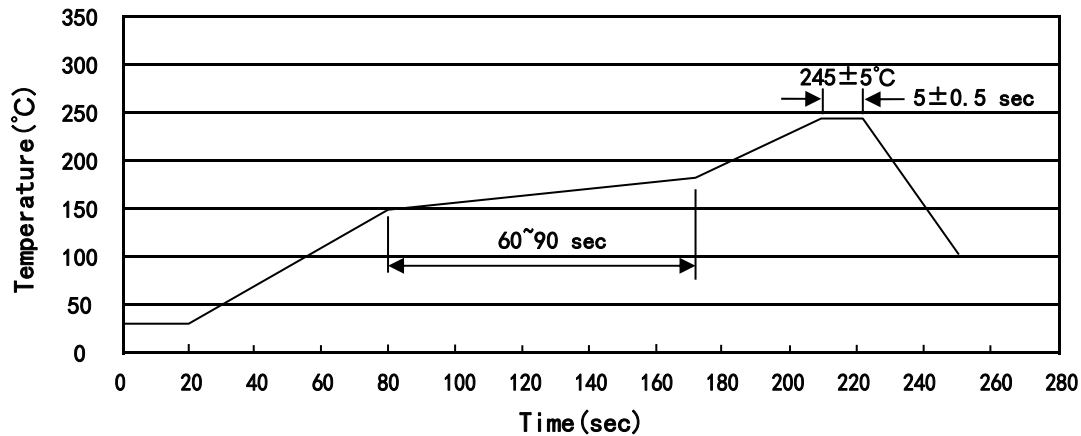
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

200P012: 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 |
| DFN2×2B-6L | 4,000 | 10 | 40,000 | 4 | 160,000 | 7" ×8 | 210×205×205 | 445×435×230 |

使用说明 / Notices