

**描述 / Descriptions**

DFN8×8-4L 塑封封装双 N 沟道场效应管。

Dual N-CHANNEL MOSFET in a DFN8×8-4L Plastic Package.

**特征 / Features**

$V_{DS}(V)=200V$   $I_D=9A$

$R_{DS(ON)}@10V<0.45\Omega$ (Typ.  $0.4\Omega$ )

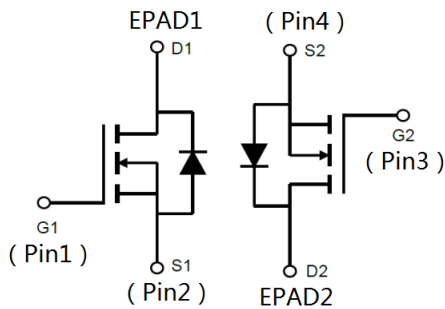
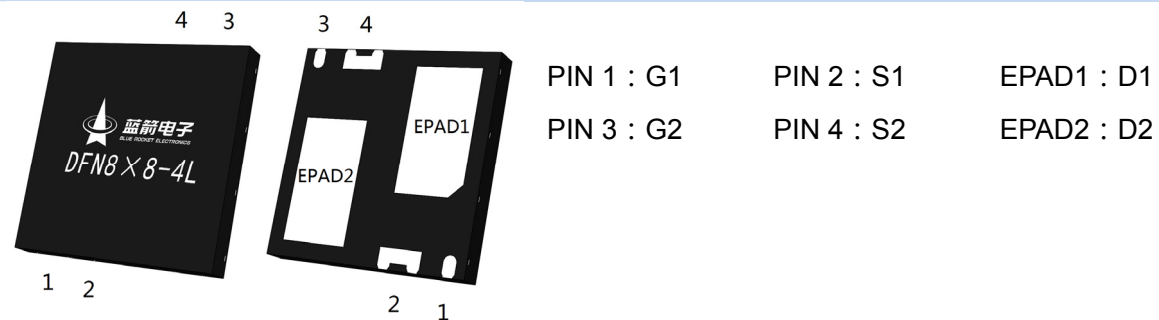
$R_{DS(ON)}@6V<0.6\Omega$ (Typ.  $0.5\Omega$ )

无卤产品。HF Product.

**用途 / Applications**

用于高频开关电源、电子镇流器、LED 电源、高速风筒。

Used in high-frequency switching power supply, electronic ballast, LED power supply and high-speed air duct.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning****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<br>Parameter                          | 符号<br>Symbol                          | 数值<br>Rating | 单位<br>Unit |
|--|---------------------------------------|--------------|------------|
| Drain-Source Voltage                     | V <sub>DSS</sub>                      | 200          | V          |
| Drain Current                            | I <sub>D</sub> (T <sub>C</sub> =25°C) | 9            | A          |
| Drain Current - Pulsed                   | I <sub>DM</sub>                       | 28.6         | A          |
| Gate-Source Voltage                      | V <sub>GSS</sub>                      | ±20          | V          |
| Avalanche Current                        | I <sub>AR</sub>                       | 5            | A          |
| Single Pulsed Avalanche Energy           | E <sub>AS</sub>                       | 166          | mJ         |
| Power Dissipation (T <sub>C</sub> =25°C) | P <sub>D</sub>                        | 70           | W          |
| Operating and Storage Temperature Range  | T <sub>J</sub> , T <sub>STG</sub>     | -55 to 150   | °C         |
| Thermal resistance, Junction to Case     | R <sub>θJC</sub>                      | 1.79         | °C/W       |

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

| 参数<br>Parameter                   | 符号<br>Symbol        | 测试条件<br>Test Conditions   | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|-----------------------------------|---------------------|---|------------|------------|------------|------------|
| Drain-Source Breakdown Voltage    | BV <sub>DSS</sub>   | V <sub>GS</sub> =0V I <sub>D</sub> =250μA                               | 200        | 230        |            | V          |
| Zero Gate Voltage Drain Current   | I <sub>DSS</sub>    | V <sub>DS</sub> =200V V <sub>GS</sub> =0V                               |            |            | 1          | μA         |
| Gate-Body Leakage Current Forward | I <sub>GSS</sub>    | V <sub>GS</sub> =±20V V <sub>DS</sub> =0V                               |            |            | ±0.1       | μA         |
| Gate Threshold Voltage            | V <sub>GS(th)</sub> | V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =250μA                  | 2          | 3          | 4          | V          |
| Static Drain-Source On-Resistance | R <sub>DS(on)</sub> | V <sub>GS</sub> =10V I <sub>D</sub> =4.5A                               |            | 0.4        | 0.45       | Ω          |
|                                   | R <sub>DS(on)</sub> | V <sub>GS</sub> =6V I <sub>D</sub> =2.5A                                |            | 0.5        | 0.6        | Ω          |
| Input Capacitance                 | C <sub>iss</sub>    | V <sub>DS</sub> =25V V <sub>GS</sub> =0V<br>f=1.0MHz                    |            | 630        |            | pF         |
| Output Capacitance                | C <sub>oss</sub>    |   |            | 270        |            | pF         |
| Reverse Transfer Capacitance      | C <sub>rss</sub>    |   |            | 50         |            | pF         |
| Total Gate Charge                 | Q <sub>G</sub>      | V <sub>DS</sub> = 100V, I <sub>D</sub> = 9.0A,<br>V <sub>GS</sub> = 10V |            | 26         |            | nC         |
| Gate-Source Charge                | Q <sub>GS</sub>     |   |            | 11.2       |            |            |
| Gate-Drain Charge                 | Q <sub>GD</sub>     |   |            | 9.5        |            |            |

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

| 参数<br>Parameter                    | 符号<br>Symbol | 测试条件<br>Test Conditions                                 | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|------------------------------------|--------------|---|------------|------------|------------|------------|
| Turn-On Delay Time                 | $t_{d(on)}$  | $V_{DS}=100V$ $I_D=9.0A$<br>$R_G=25\Omega$              |            | 15         |            | ns         |
| Turn-On Rise Time                  | $t_r$        |   |            | 33         |            |            |
| Turn-Off Delay Time                | $t_{d(off)}$ |   |            | 40         |            |            |
| Turn-Off Fall Time                 | $t_f$        |   |            | 30         |            |            |
| Drain-Source Diode Forward Voltage | $V_{SD}$     | $V_{GS} = 0 V,$ $I_S = 9.0A$                            |            |            | 1.4        | V          |
| Reverse Recovery Time              | $t_{rr}$     | $V_{GS} = 0V,$ $I_S = 9.0A,$<br>$di_F/dt = 100 A/\mu s$ |            | 455        |            | nS         |
| Reverse Recovery Charge            | $Q_{rr}$     |   |            | 3.5        |            | nC         |

电参数曲线图 / Electrical Characteristic Curve

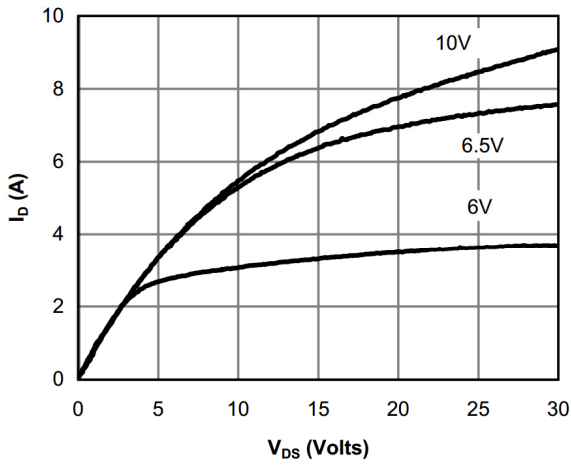


Fig 1: On-Region Characteristics

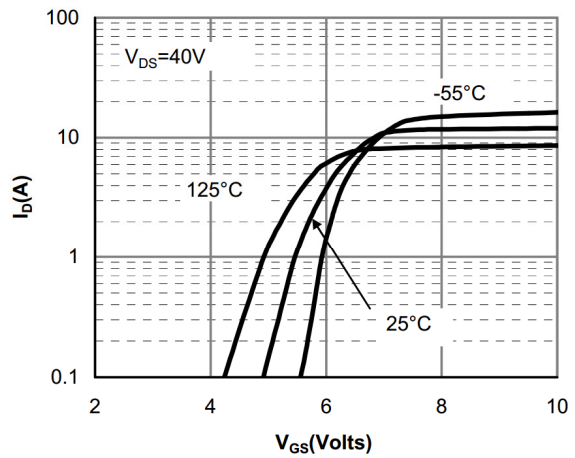


Figure 2: Transfer Characteristics

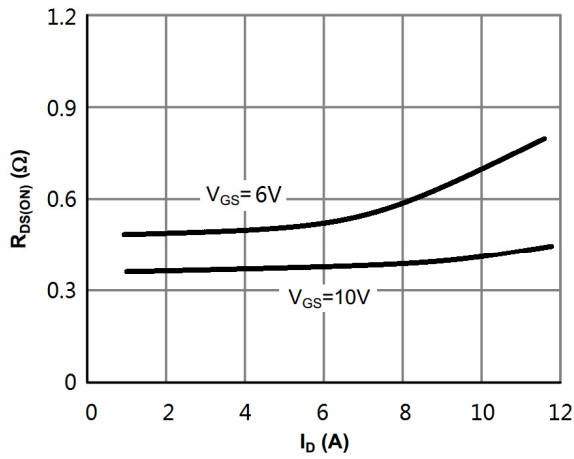


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

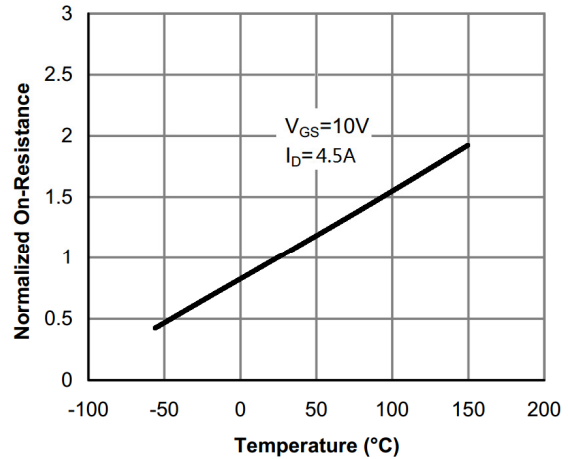


Figure 4: On-Resistance vs. Junction Temperature

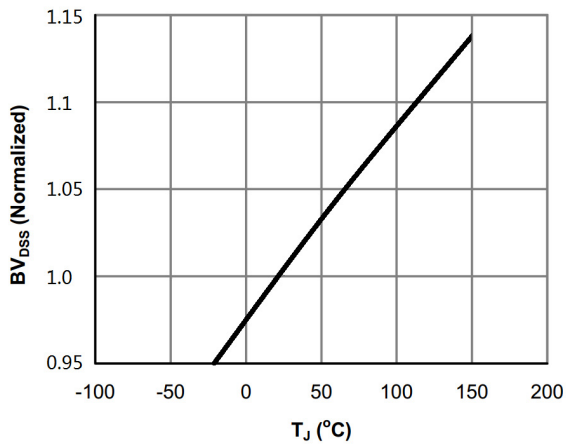


Figure 5: Break Down vs. Junction Temperature

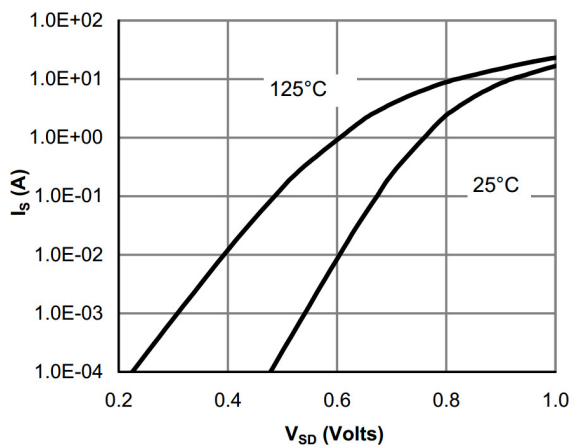
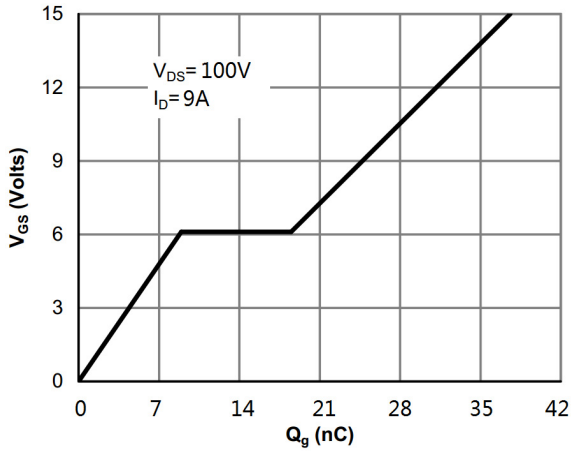
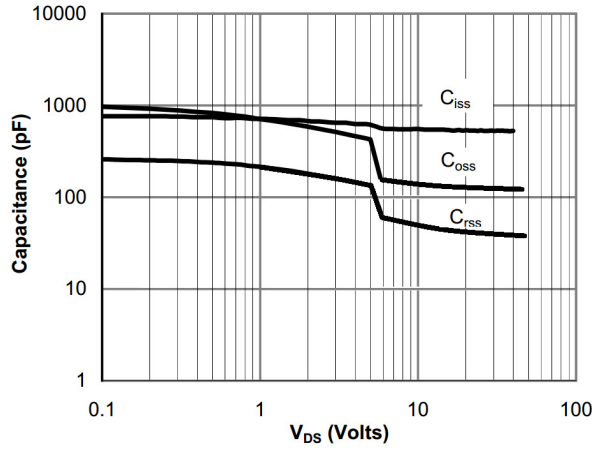


Figure 6: Body-Diode Characteristics

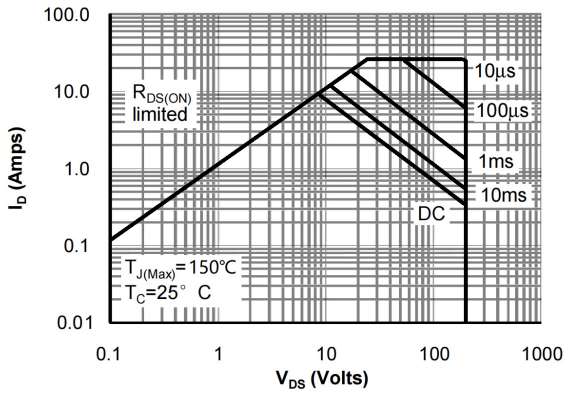
**电参数曲线图 / Electrical Characteristic Curve**



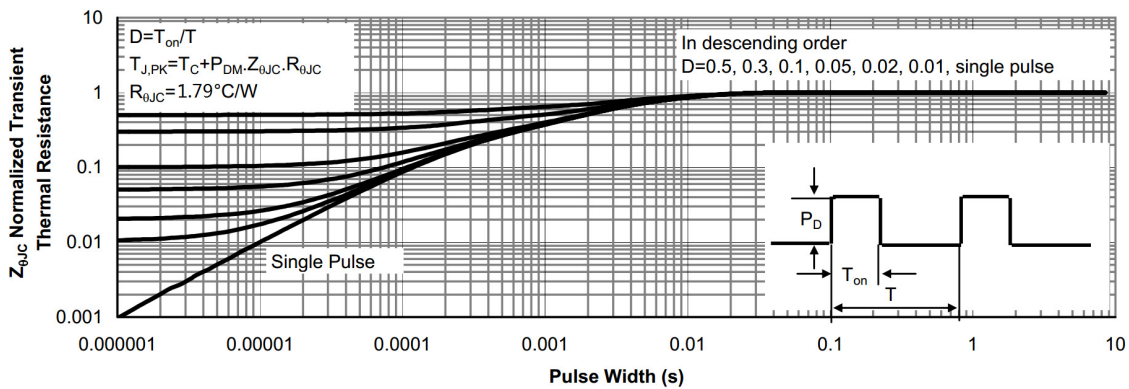
**Figure 7: Gate-Charge Characteristics**



**Figure 8: Capacitance Characteristics**



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

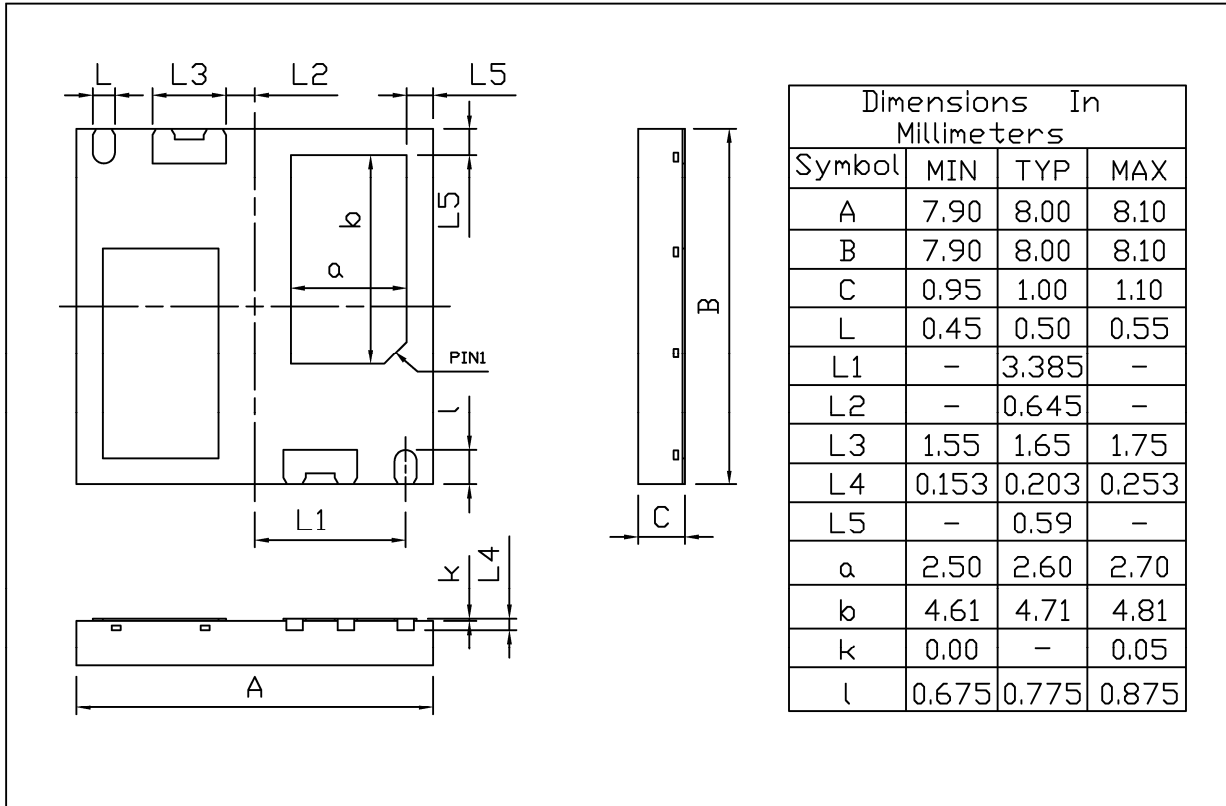


**Figure 10: Normalized Maximum Transient Thermal Impedance**

**外形尺寸图 / Package Dimensions**

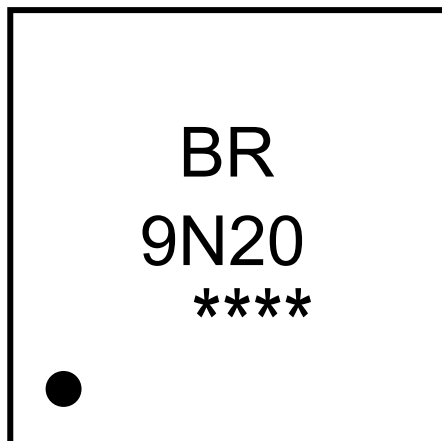
DFN8X8-4L

Unit:mm



Rev.00 202307

**印章说明 / Marking Instructions**



说明：

BR： 为公司代码

9N20： 为型号代码

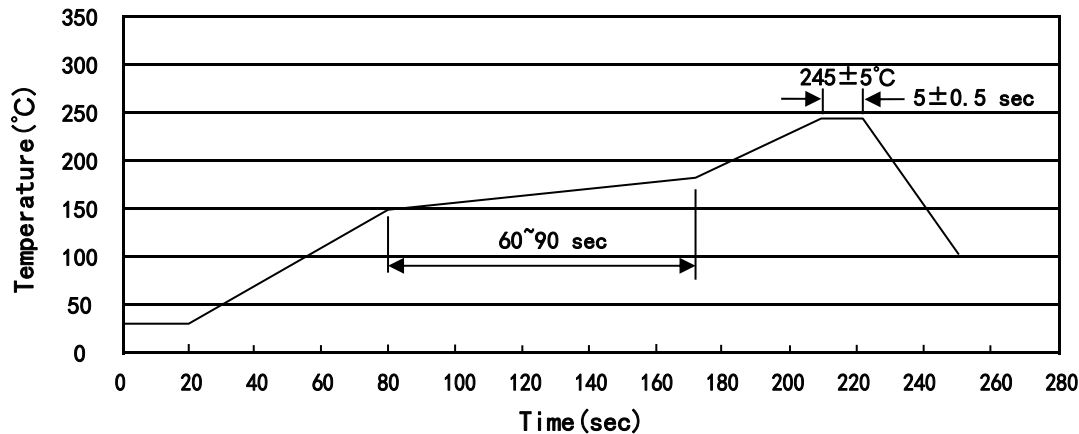
\*\*\*\*： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

9N20: 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<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| DFN8×8-4L            | 3,000              | 2                       | 6,000                  | 6                            | 36,000                 | 13" ×16                                 | 360×360×50  | 380×335×366 |

**使用说明 / Notices**