

描述 / Descriptions

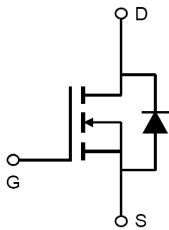
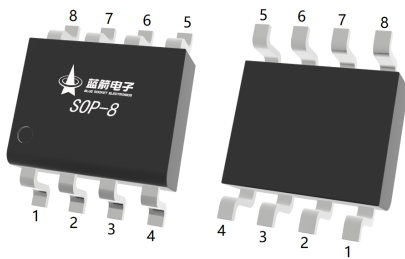
SOP-8 塑封封装 N 沟道 MOS 场效应管。
 N-Channel MOSFET in a SOP-8 Plastic Package.

特征 / Features

$V_{DS}=30V$ $I_D=23A(V_{GS}=\pm 20V)$
 $R_{DS(ON)}@10V \leq 5.5m\Omega$ (Typ. 4.3m Ω)
 $R_{DS(ON)}@4.5V \leq 7.0m\Omega$ (Typ. 5.5m Ω)
 无卤产品。 HF Product.

用途 / Applications

DC/DC 和 AC/DC 转换器的同步整流，隔离直流/直流转换器在电信和工业。
 Synchronous Rectification in DC/DC and AC/DC Converters, Isolated DC/DC Converters in Telecom and Industrial.

内部等效电路 / Equivalent Circuit

引脚排列 / Pinning


| | | | |
|-----------|-----------|-----------|-----------|
| PIN 1 : S | PIN 2 : S | PIN 3 : S | PIN 4 : G |
| PIN 5 : D | PIN 6 : D | PIN 7 : D | PIN 8 : 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 _{DS} | 30 | V |
| Gate-Source Voltage | V _{GS} | ±20 | V |
| Continuous Drain Current | I _D | 23 | A |
| Pulsed Drain Current ^① | I _{DM} | 120 | A |
| Avalanche Current | I _{AS} | 30 | A |
| Avalanche energy | E _{AS} | 70 | mJ |
| Power Dissipation | P _D | 5 | W |
| Operating and Junction Temperature Range | T _j T _{stg} | -55~+150 | °C |
| Thermal resistance, junction - ambient | R _{θJA} | 75 | °C/W |
| Thermal resistance, junction - case | R _{θJC} | 25 | °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} | V _{GS} =0V I _D =250μA | 30 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =30V V _{GS} =0V | | | 1.0 | μA |
| Gate-Body Leakage Current Forward | I _{GSS} | V _{GS} =±20V V _{DS} =0V | | | ±100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} I _D =250μA | 1.2 | 1.8 | 2.5 | V |
| Static Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =10V I _D =20A | | 4.3 | 5.5 | mΩ |
| | | V _{GS} =4.5V I _D =12A | | 5.5 | 7 | |
| Forward Transconductance | g _{FS} | V _{DS} =25V I _D =10A | | 30 | | S |
| Diode Forward Voltage | V _{SD} | I _S =1A V _{GS} =0V | | 0.7 | 1.2 | V |

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 |
|------------------------------------|----------------------|---|------------|------------|------------|------------|
| Input Capacitance | C _{iss} | V _{DS} =25V V _{GS} =0V f=1.0MHz | | 4000 | | pF |
| Output Capacitance | C _{oss} | | | 420 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 280 | | |
| Gate resistance | R _g | f=1.0MHz | | 0.55 | | Ω |
| Total Gate Charge(10V) | Q _{g(10V)} | V _{GS} =10V I _D =20A V _{DS} =15V | | 36 | 49 | nC |
| Total Gate Charge(4.5V) | Q _{g(4.5V)} | | | 17 | 23 | |
| Gate-Source Charge | Q _{gs} | | | 6 | | |
| Gate-Drain Charge | Q _{gd} | | | 8 | | |
| Turn-On Delay Time | t _{d(on)} | V _{GS} =10V V _{DS} =15V R _L =0.75Ω R _{GEN} =3.0Ω | | 7.5 | | ns |
| Turn-On Rise Time | t _r | | | 4.0 | | |
| Turn-Off Delay Time | t _{d(off)} | | | 37.0 | | |
| Turn-Off Fall Time | t _f | | | 7.5 | | |
| Body Diode Reverse Recovery Time | t _{rr} | I _F =20A di/dt=500A/μs | | 14 | | ns |
| Body Diode Reverse Recovery Charge | Q _{rr} | | | 20.3 | | nC |

Note: ① Pulse Test : Pulse width ≤ 300 μs, Duty cycle ≤ 2% ;

电参数曲线图 / Electrical Characteristic Curve

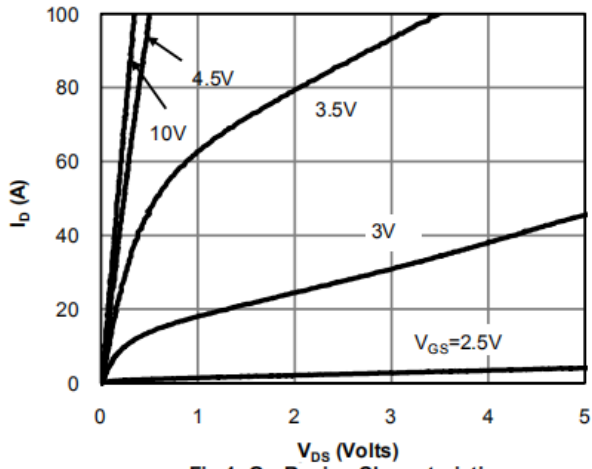


Fig 1: On-Region Characteristics

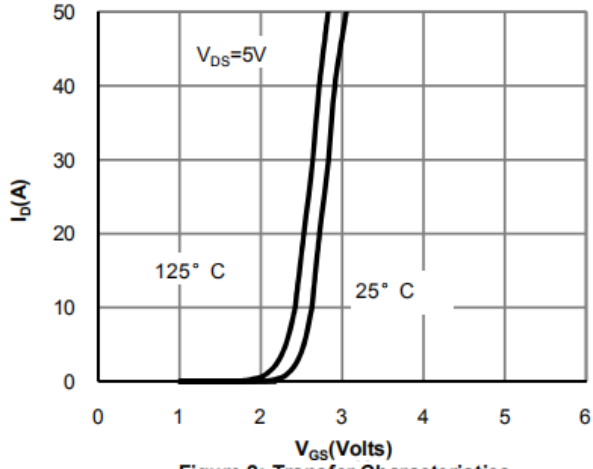


Figure 2: Transfer Characteristics

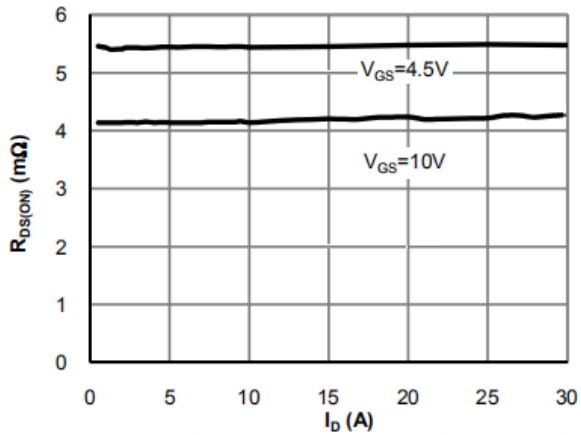


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

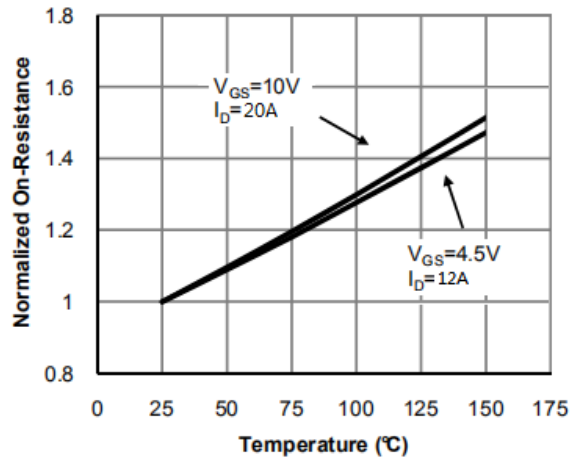


Figure 4: On-Resistance vs. Junction Temperature

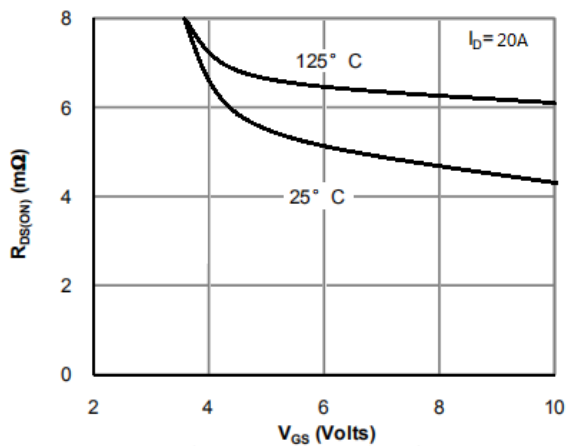


Figure 5: On-Resistance vs. Gate-Source Voltage

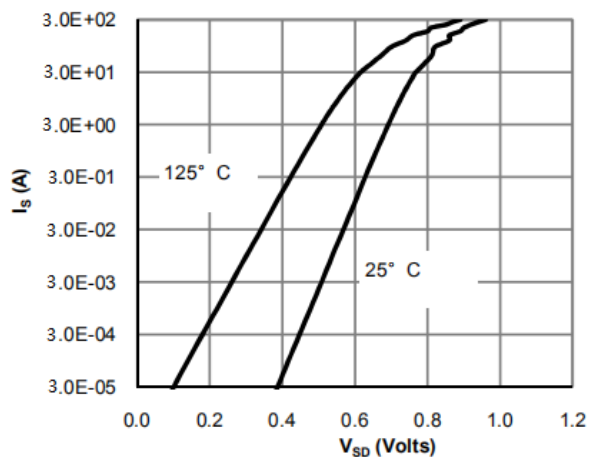


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

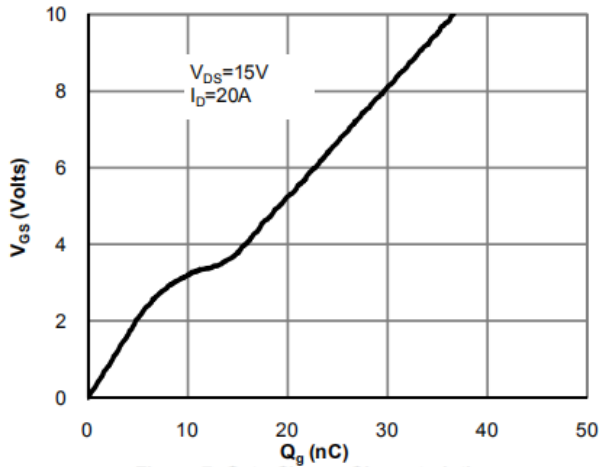


Figure 7: Gate-Charge Characteristics

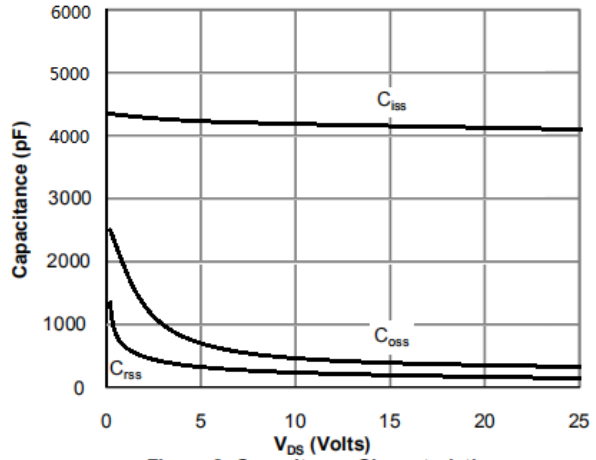


Figure 8: Capacitance Characteristics

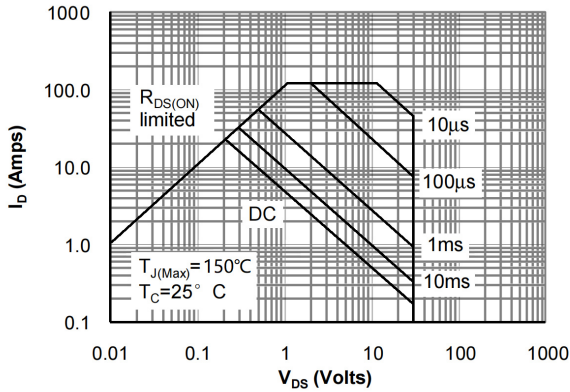


Figure 9: Maximum Forward Biased Safe Operating Area

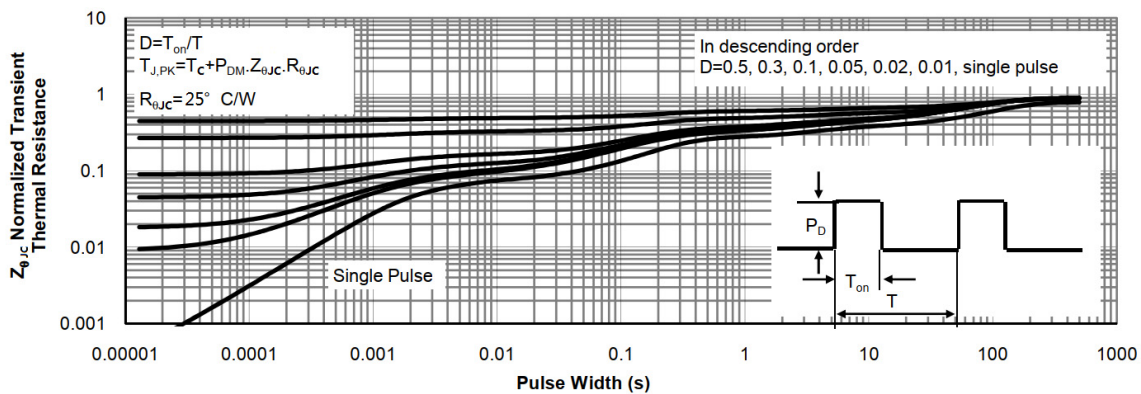
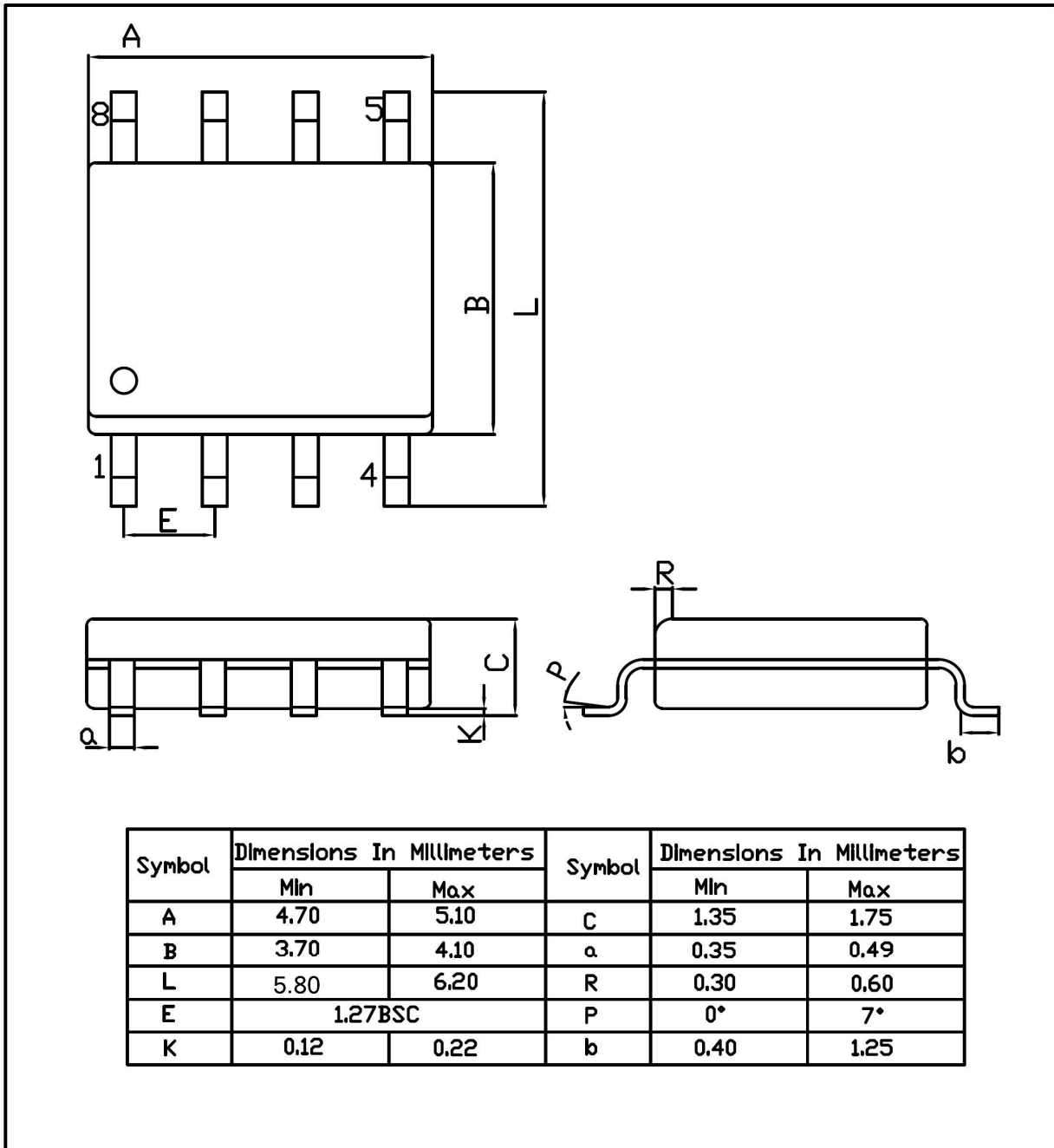


Figure 10: Normalized Maximum Transient Thermal Impedance

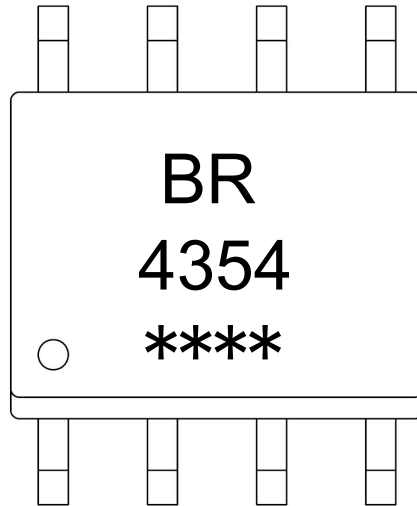
外形尺寸图 / Package Dimensions

SOP-8

Unit:mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

4354： 为型号代码

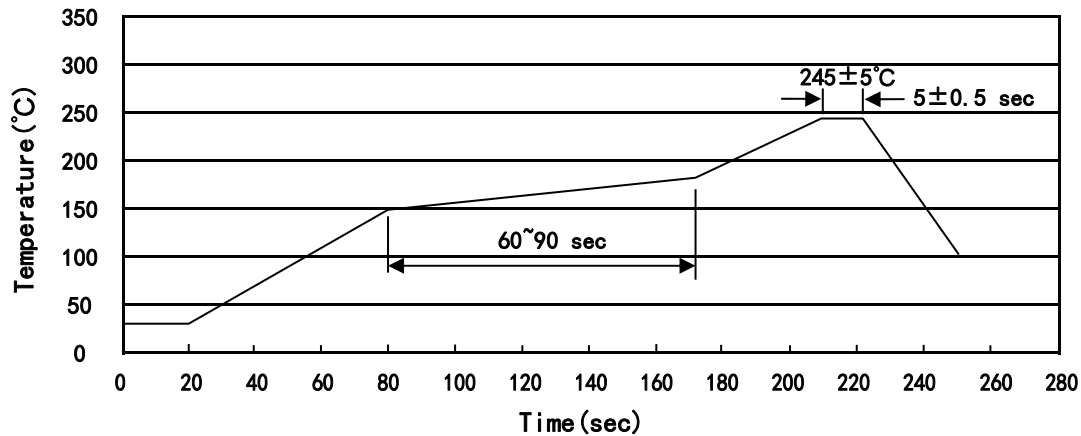
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code.

4354: 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 |
| SOP/ESOP-8 | 4,000 | 2 | 8,000 | 6 | 48,000 | 13" ×12 | 360×360×50 | 380×335×366 |

使用说明 / Notices

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