

**描述 / Descriptions**

SOT23-3 塑封封装 N 道场效应管。

N- CHANNEL MOSFET in a SOT23-3 Plastic Package.

**特征 / Features**

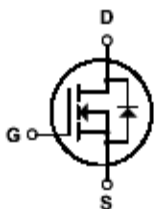
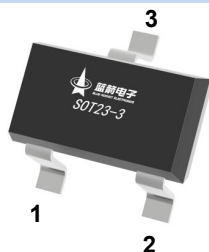
高可靠性，适用无铅及绿色设备(符合 ROHS) ，无卤产品。

High Reliable;Lead Free and Green Devices Available( RoHS Compliant) ,HF Product.

**用途 / Applications**

适用电视机等开关电源电路。

Power management in TV Inverter. Power Switch.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning**

PIN1 : G

PIN 2 : S

PIN 3 : D

**印章代码 / Marking**

|         |      |
|---------|------|
| Marking | H5N1 |
|---------|------|

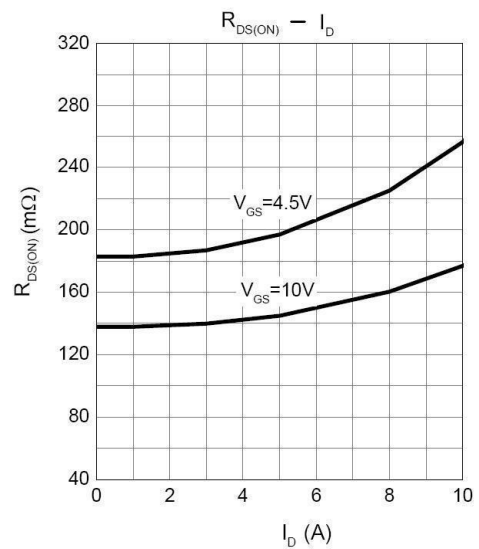
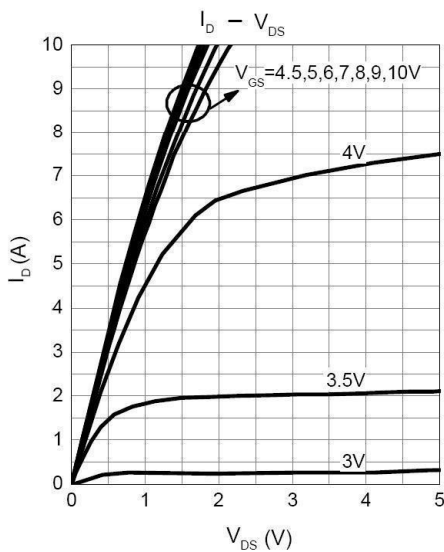
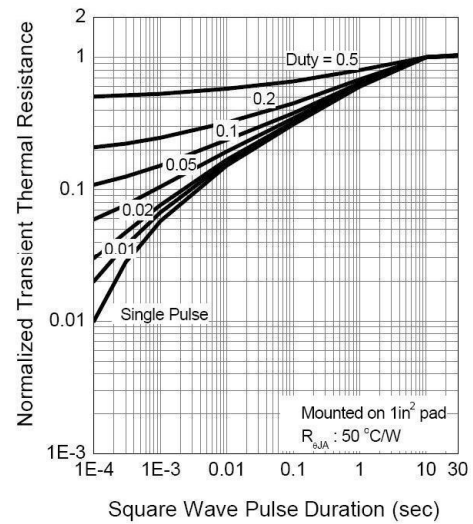
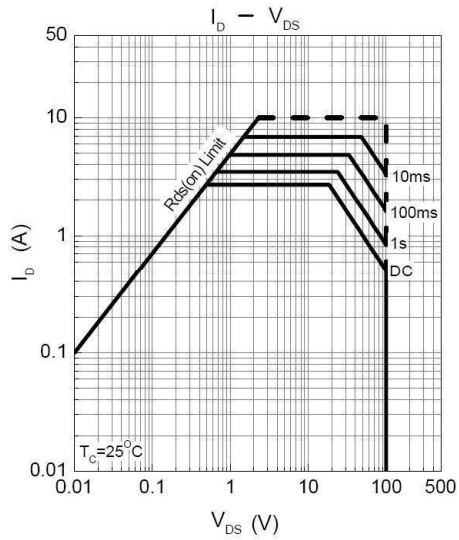
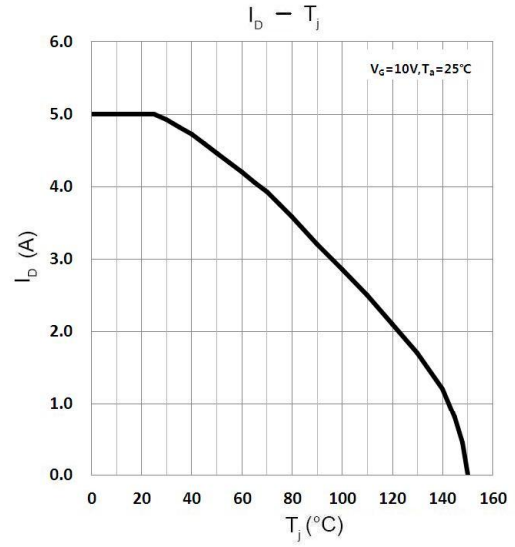
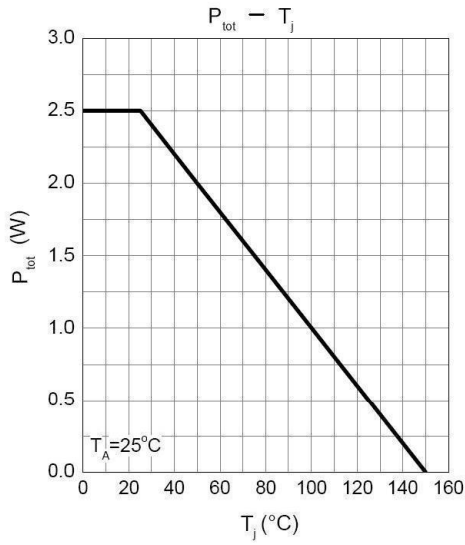
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter                         | 符号<br>Symbol    | 数值<br>Rating | 单位<br>Unit |
|-----------------------------------------|-----------------|--------------|------------|
| Drain-Source Voltage                    | $V_{DSS}$       | 100          | V          |
| Drain Current- Pulsed                   | $I_{DM}$        | 20           | A          |
| Maximum Drain Current - Continuous      | $I_D$           | 5.0          | A          |
| Gate-Source Voltage                     | $V_{GSS}$       | $\pm 20$     | V          |
| Power Dissipation                       | $P_D$           | 0.83         | W          |
| Maximum Junction Temperature            | $T_J$           | 150          | °C         |
| Storage Temperature Range               | $T_{STG}$       | -55 to 150   | °C         |
| Maximum Resistance –Junction to Ambient | $R_{\theta JA}$ | 150          | °C/W       |

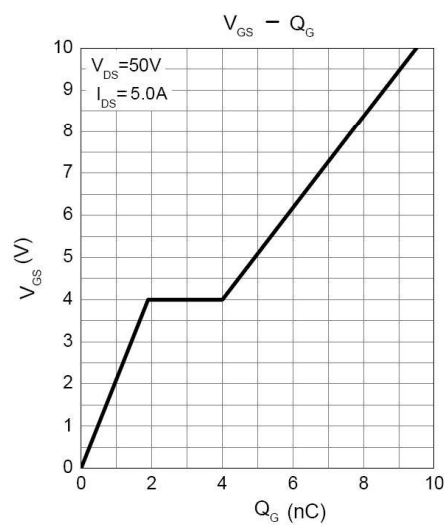
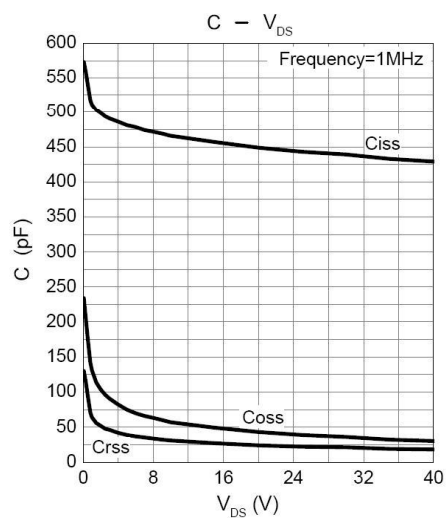
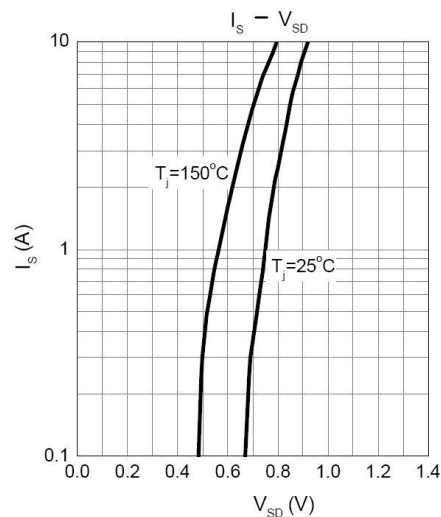
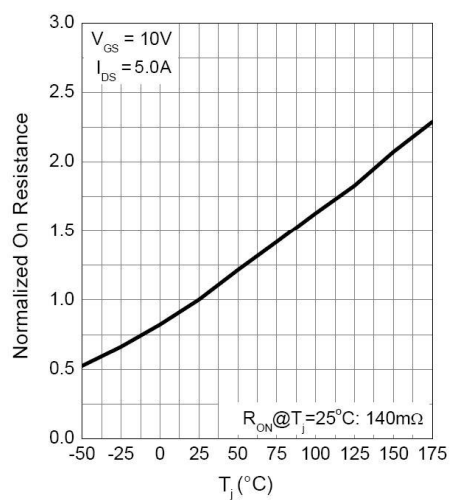
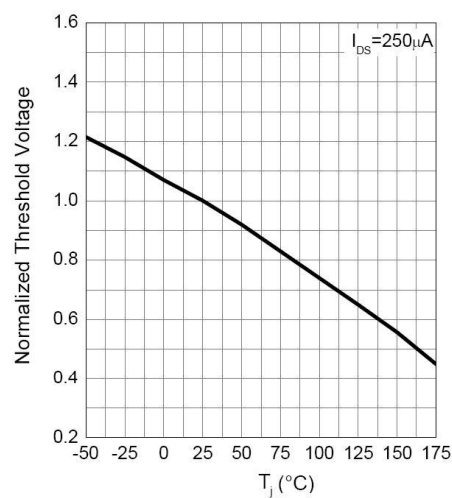
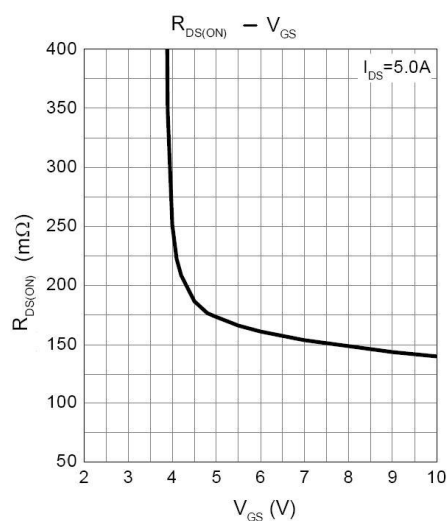
**电性能参数 / Electrical Characteristics(Ta=25°C)**

| 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     | $BV_{DSS}$      | $V_{GS}=0V$ $I_{DS}=250\mu A$                                             | 100        |            |            | V          |
| Zero Gate Voltage Drain Current    | $I_{DSS}$       | $V_{DS}=80V$ $V_{GS}=0V$                                                  |            |            | 1          | $\mu A$    |
|                                    |                 | $T_J=85^\circ C$                                                          |            |            | 20         | $\mu A$    |
| Gate–Body Leakage.                 | $I_{GSS}$       | $V_{GS}=\pm 16V$ $V_{DS}=0V$                                              |            |            | $\pm 10$   | $\mu A$    |
| Gate Threshold Voltage             | $V_{GS(th)}$    | $V_{DS}=V_{GS}$ $I_{DS}=250\mu A$                                         | 1          |            | 3          | V          |
| Static Drain–Source On–Resistance  | $R_{DS(on)(1)}$ | $V_{GS}=6V$ $I_D=2A$                                                      |            |            | 235        | m $\Omega$ |
|                                    | $R_{DS(on)(2)}$ | $V_{GS}=10V$ $I_D=5A$                                                     |            |            | 175        | m $\Omega$ |
| Drain-Source Diode Forward Voltage | $V_{SD}$        | $V_{GS}=0V$ $I_F=3A$                                                      |            | 0.8        | 1.1        | V          |
| Reverse Recovery Time              | $T_{rr}$        | $I_{DS}=5A$<br>$dI_{SD}/dt=100A/\mu s$                                    |            | 36         |            | ns         |
| Reverse Recovery Charge            | $Q_{rr}$        |                                                                           |            | 49         |            | nC         |
| Input Capacitance                  | $C_{iss}$       | $V_{DS}=0V$ $V_{GS}=30V$<br>$f=1.0MHz$                                    |            | 440        |            | pF         |
| Output Capacitance                 | $C_{oss}$       |                                                                           |            | 36         |            | pF         |
| Reverse Transfer Capacitance       | $C_{rss}$       |                                                                           |            | 20         |            | pF         |
| Turn–On Delay Time                 | $t_{d(on)}$     | $I_{DS}=1A$ $V_{GEN}=10V$<br>$V_{DD}=30V$ $R_L=30\Omega$<br>$R_G=6\Omega$ |            | 11         | 21         | ns         |
| Turn–On Rise Time                  | $t_r$           |                                                                           |            | 10         | 19         | ns         |
| Turn–Off Delay Time                | $t_{d(off)}$    |                                                                           |            | 21         | 39         | ns         |
| Turn–Off Fall Time                 | $t_f$           |                                                                           |            | 13         | 24         | ns         |
| Total Gate Charge                  | $Q_g$           | $V_{DS}=50V$ $V_{GS}=10V$<br>$I_{DS}=5A$                                  |            | 9.5        | 13         | nC         |
| Gate- Source Charge                | $Q_{gs}$        |                                                                           |            | 1.9        |            | nC         |
| Gate- Drain Charge                 | $Q_{gd}$        |                                                                           |            | 2.1        |            | nC         |

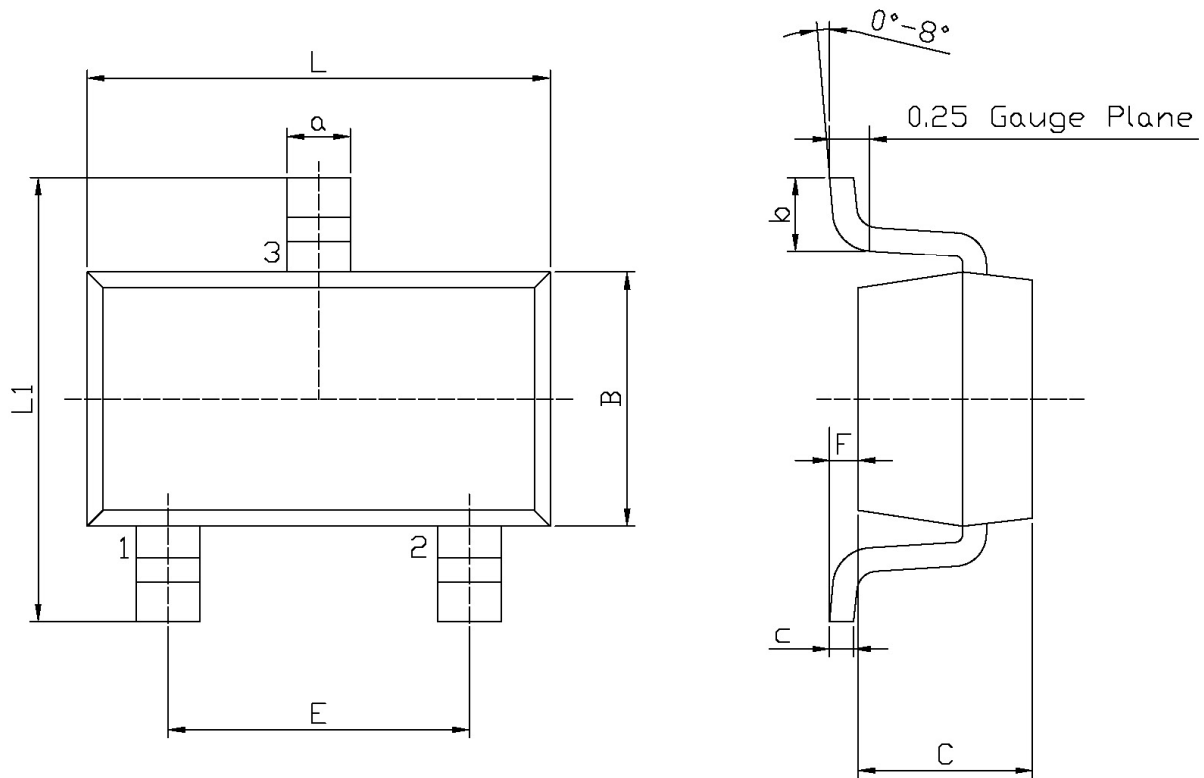
## 电参数曲线图 / Electrical Characteristic Curve



## 电参数曲线图 / Electrical Characteristic Curve



## 外形尺寸图 / Package Dimensions

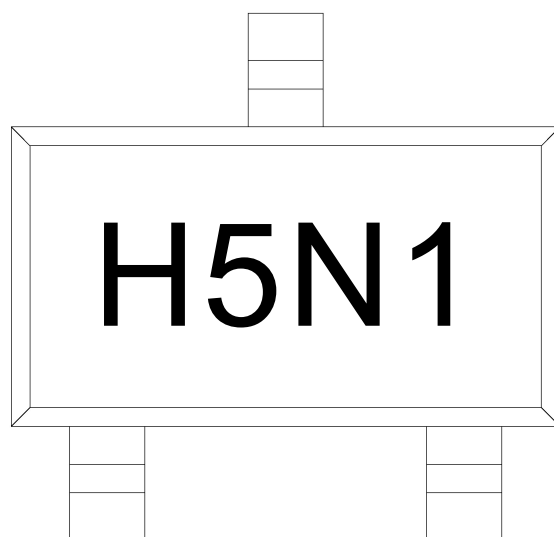


Unit: mm

| Symbol | Dimensions In Millimeters |      | Symbol | Dimensions In Millimeters |      |
|--------|---------------------------|------|--------|---------------------------|------|
|        | Min                       | Max  |        | Min                       | Max  |
| L      | 2.82                      | 3.02 | a      | 0.35                      | 0.50 |
| B      | 1.50                      | 1.70 | c      | 0.10                      | 0.20 |
| C      | 0.90                      | 1.30 | b      | 0.35                      | 0.55 |
| L1     | 2.60                      | 3.00 | F      | 0                         | 0.15 |
| E      | 1.80                      | 2.00 |        |                           |      |

SOT23-3

**印章说明 / Marking Instructions**



说明：

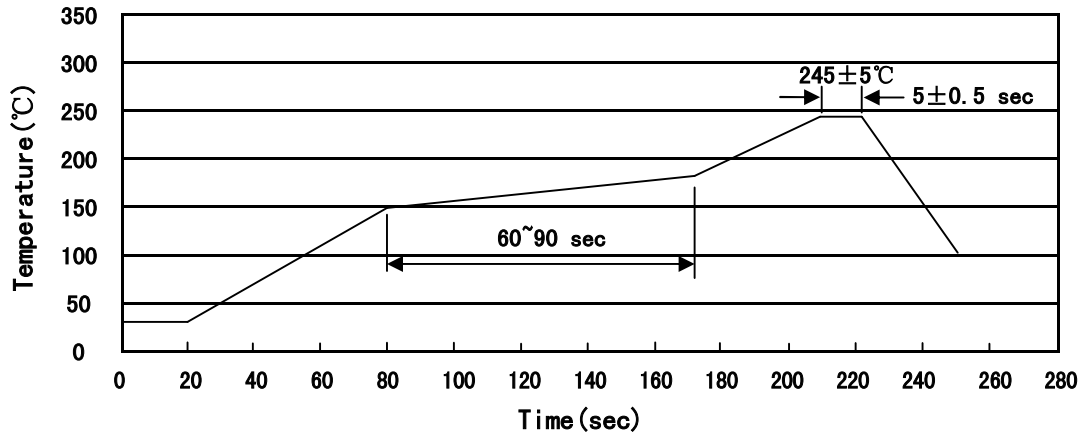
H: 为公司代码

5N1： 为型号代码

Note:

H： Company Code

5N1: Product Type Code

**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 |
| SOT-23-3             | 3,000              | 10                      | 30,000                 | 4                            | 120,000                | 7" × 8                                  | 210×205×205 | 445×230×435 |

**使用说明 / Notices**