

# BC550

Rev.F Mar.-2016

## 描述 / Descriptions

TO-92(R)塑封封装 NPN 半导体三极管。Silicon NPN transistor in a TO-92(R) Plastic Package.

## 特征 / Features

高电压，低噪声。

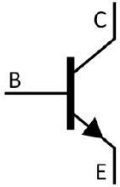
High Voltage, Low Noise.

## 用途 / Applications

用于低噪声放大。

Low noise amplifier application.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN1 : Emitter

PIN 2 : Base

PIN 3 : Collector

## 放大及印章代码 / $h_{FE}$ Classifications & Marking

| $h_{FE}$ Classifications<br>Symbol | A       | B       | C       |
|------------------------------------|---------|---------|---------|
| $h_{FE}$ Range                     | 110~220 | 200~450 | 420~800 |

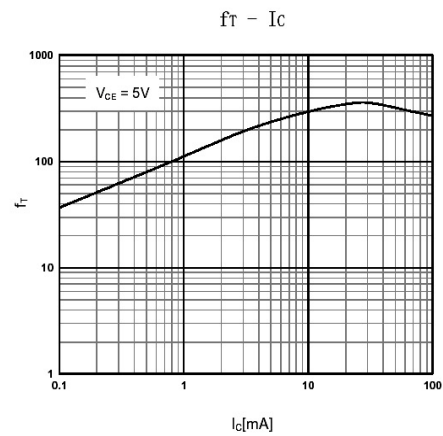
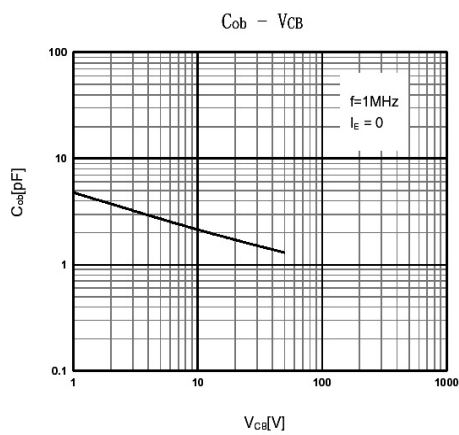
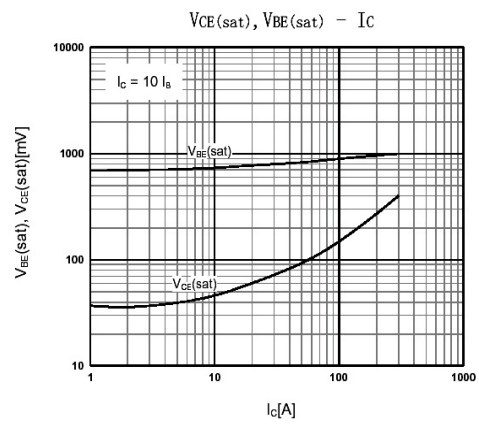
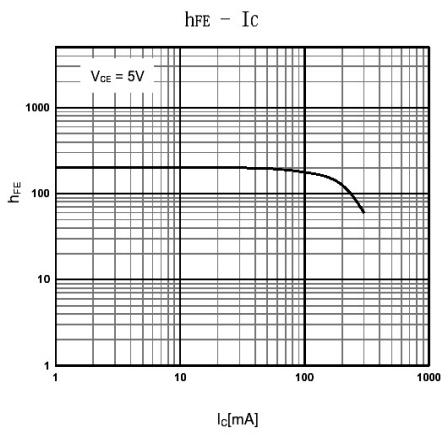
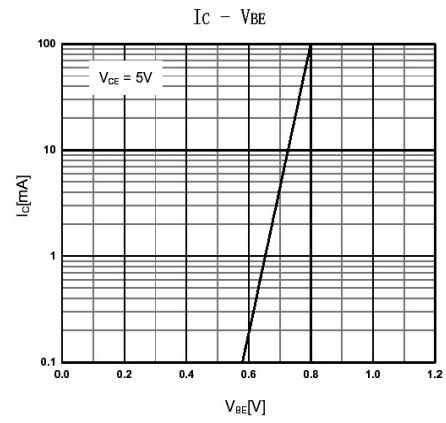
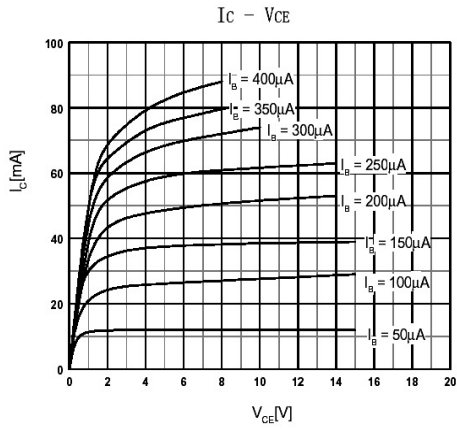
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter                | 符号<br>Symbol | 数值<br>Rating | 单位<br>Unit |
|--------------------------------|--------------|--------------|------------|
| Collector to Base Voltage      | $V_{CBO}$    | 50           | V          |
| Collector to Emitter Voltage   | $V_{CEO}$    | 45           | V          |
| Emitter to Base Voltage        | $V_{EBO}$    | 5.0          | V          |
| Collector Current - Continuous | $I_C$        | 100          | mA         |
| Collector Power Dissipation    | $P_C$        | 625          | mW         |
| Junction Temperature           | $T_j$        | 150          | °C         |
| Storage Temperature Range      | $T_{stg}$    | -55~150      | °C         |

**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 |
|--|---------------|---|------------|------------|------------|------------|
| Collector to Emitter Breakdown Voltage | $V_{CEO}$     | $I_C=10mA$ $I_B=0$                                      | 45         |            |            | V          |
| Collector to Base Breakdown Voltage    | $V_{CBO}$     | $I_C=10\mu A$ $I_E=0$                                   | 50         |            |            | V          |
| Emitter to Base Breakdown Voltage      | $V_{EBO}$     | $I_E=10\mu A$ $I_C=0$                                   | 5.0        |            |            | V          |
| Collector Cut-Off Current              | $I_{CBO}$     | $V_{CB}=30V$ $I_E=0$                                    |            |            | 0.015      | $\mu A$    |
| DC Current Gain                        | $h_{FE}$      | $V_{CE}=5.0V$ $I_C=2.0mA$                               | 110        |            | 800        |            |
| Collector-Emitter Saturation Voltage   | $V_{CE(sat)}$ | $I_C=100mA$ $I_B=5.0mA$                                 |            |            | 0.6        | V          |
| Base-Emitter Saturation Voltage        | $V_{BE(sat)}$ | $I_C=100mA$ $I_B=5.0mA$                                 |            | 0.9        |            | V          |
| Base-Emitter Voltage                   | $V_{BE(on)}$  | $V_{CE}=5.0V$ $I_C=2.0mA$                               | 0.55       |            | 0.7        | V          |
| Current Gain Bandwidth Product         | $f_T$         | $V_{CE}=5.0V$ $f=100MHz$ $I_E=10mA$                     |            | 300        |            | MHz        |
| Transition Frequency                   | $C_{ob}$      | $V_{CB}=10V$ $f=1.0MHz$ $I_E=0$                         |            |            | 4.5        | pF         |
| Noise Figure                           | NF            | $V_{CE}=5.0V$ $R_g=10K\Omega$ $I_C=200\mu A$ $f=1.0KHz$ |            |            | 10         | dB         |

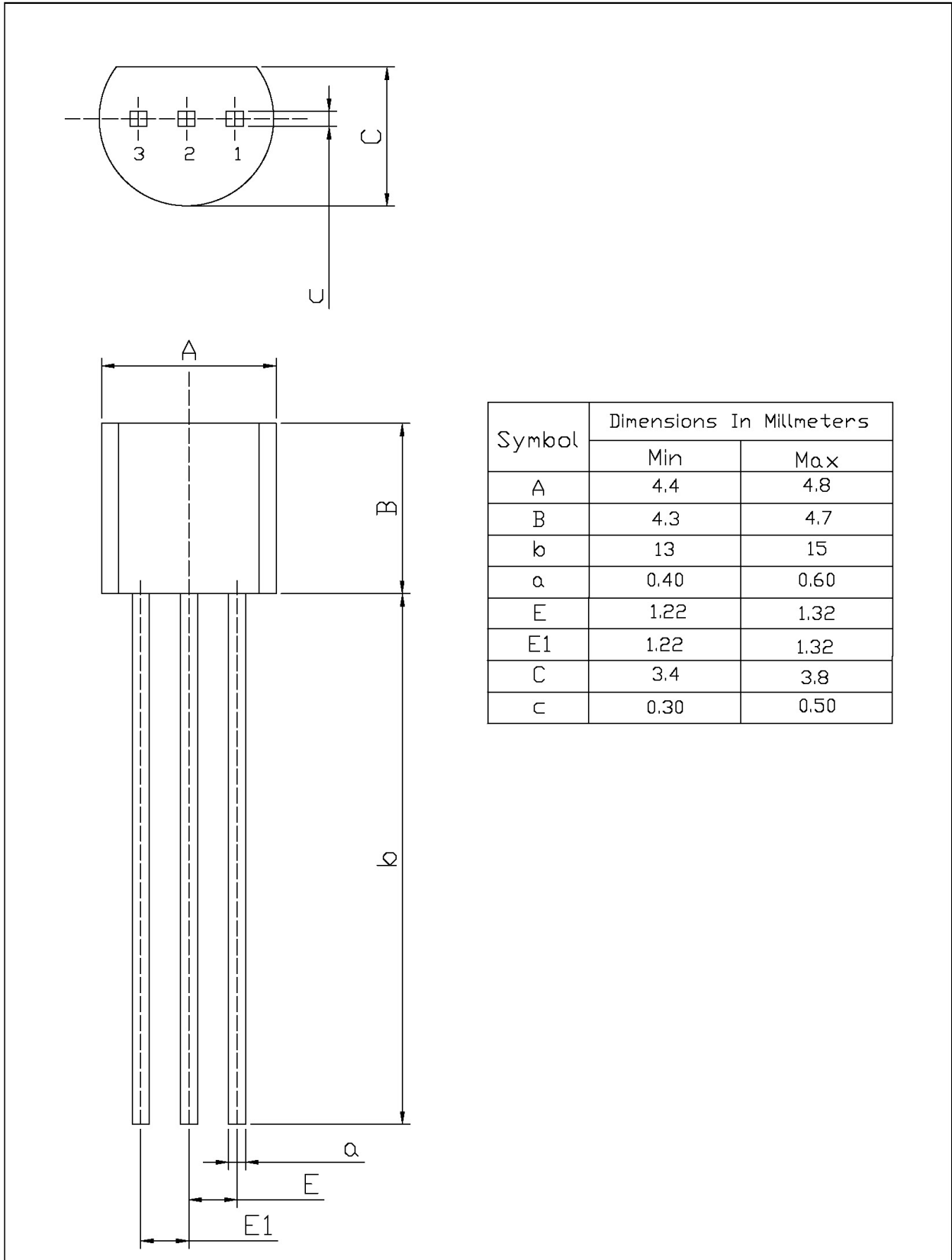
**电参数曲线图 / Electrical Characteristic Curve**



外形尺寸图 / Package Dimensions

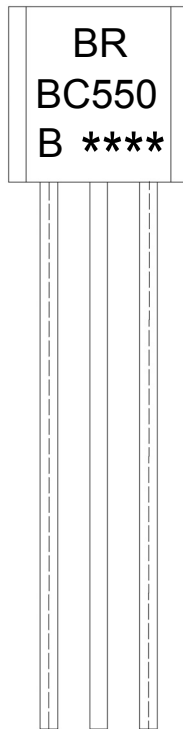
TO-92(R)

Unit: mm



| Symbol | Dimensions In Millimeters |      |
|--------|---------------------------|------|
|        | Min                       | Max  |
| A      | 4.4                       | 4.8  |
| B      | 4.3                       | 4.7  |
| b      | 13                        | 15   |
| a      | 0.40                      | 0.60 |
| E      | 1.22                      | 1.32 |
| E1     | 1.22                      | 1.32 |
| C      | 3.4                       | 3.8  |
| c      | 0.30                      | 0.50 |

印章说明 / Marking Instructions



说明：

BR： 为公司代码

BC550： 为产品型号

B： 为  $h_{FE}$  分档代码

\*\*\*\*： 为生产批号代码，随生产批号变化。

Note:

BR: Company Code.

BC550: Product Type.

B:  $h_{FE}$  Classifications Symbol

\*\*\*\*: Lot No. Code, code change with Lot No.

**波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)**



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±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:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±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：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

散件包装 / BULK

| Package Type<br>封装形式 | Units 包装数量       |                       |                        |                              |                        | Dimension 包装尺寸 (unit: mm3) |             |             |
|----------------------|------------------|-----------------------|------------------------|------------------------------|------------------------|----------------------------|-------------|-------------|
|                      | Units/Bag<br>只/袋 | Bags/Inner Box<br>袋/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Bag 袋                      | Inner Box 盒 | Outer Box 箱 |
| TO-92                | 1,000            | 10                    | 10,000                 | 5                            | 50,000                 | 135×190                    | 237×172×102 | 560×245×195 |
|                      | 1,000            | 10                    | 10,000                 | 10                           | 100,000                | 135×190                    | 237×172×102 | 560×245×375 |

编带包装 / AMMO

| Package Type<br>封装形式 | Units 包装数量         |                        |                         |                              |                        | Dimension 包装尺寸 (unit: mm3) |                                   |
|----------------------|--------------------|------------------------|-------------------------|------------------------------|------------------------|----------------------------|-----------------------------------|
|                      | Units/tape<br>只/纸带 | Tape/Inner Box<br>纸带/盒 | Rows/Inner Box<br>纸带层/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Inner Box 盒                | Outer Box 箱                       |
| TO-92                | 3,000              | 1                      | 120                     | 10                           | 30,000                 | 328×230×42                 | 小箱 480×346×235,<br>大箱 547×407×268 |

**使用说明 / Notices**