

### 描述 / Descriptions

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

### 特征 / Features

较好的放大线性，集电-发射极击穿电压高，输出电容小。

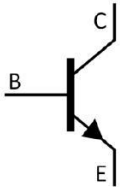
Satisfactory linearity of forward current transfer ratio  $h_{FE}$ , High collector to emitter Voltage  $V_{CEO}$ , Small collector output capacitance  $C_{ob}$ .

### 用途 / Applications

用于低频高压放大输出，与 2SA1124 互补。

For low-frequency high breakdown voltage amplification complementary to 2SA1124.

### 内部等效电路 / Equivalent Circuit



### 引脚排列 / Pinning



PIN 1 : Base      PIN 2 : Collector      PIN 3 : Emitter

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

|                                    |         |         |
|------------------------------------|---------|---------|
| $h_{FE}$ Classifications<br>Symbol | R       | S       |
| $h_{FE}$ Range                     | 130~220 | 185~330 |

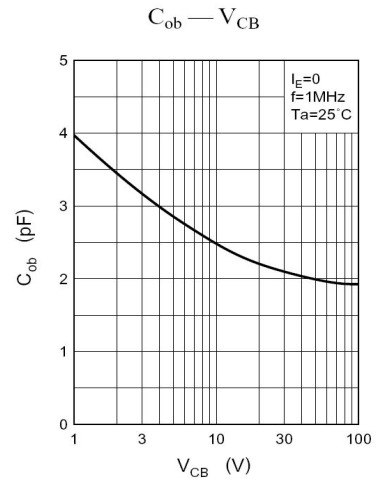
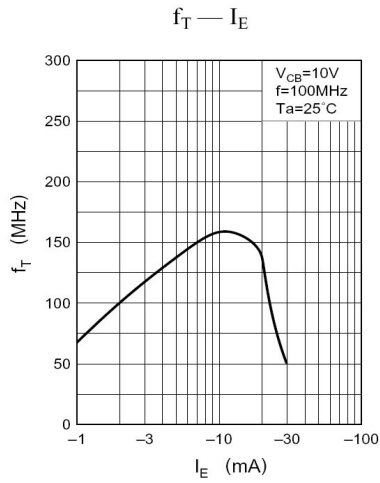
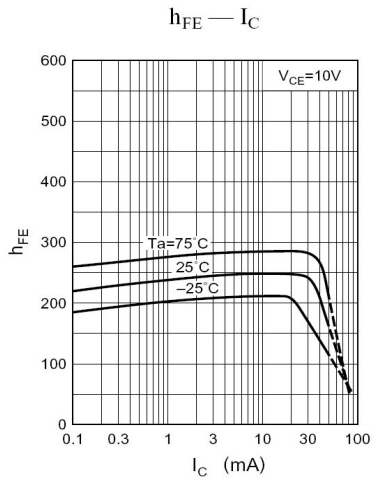
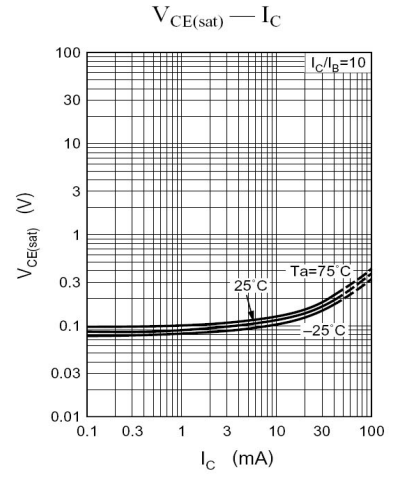
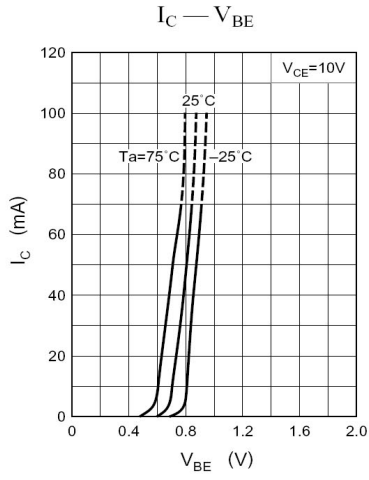
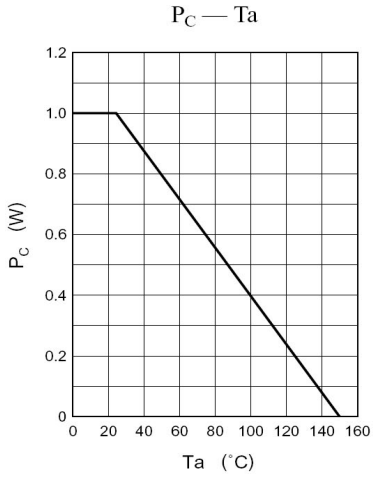
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter              | 符号<br>Symbol | 数值<br>Rating | 单位<br>Unit |
|------------------------------|--------------|--------------|------------|
| Collector to Base Voltage    | $V_{CBO}$    | 150          | V          |
| Collector to Emitter Voltage | $V_{CEO}$    | 150          | V          |
| Emitter to Base Voltage      | $V_{EBO}$    | 5            | V          |
| Collector Current (DC)       | $I_C$        | 50           | mA         |
| Collector Current (Pulse)    | $I_{CP}$     | 100          | mA         |
| Collector Power Dissipation  | $P_C$        | 1            | W          |
| 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  | $V_{CEO}$     | $I_C=0.1mA$ $I_B=0$  | 150        |            |            | V          |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E=10\mu A$ $I_C=0$  | 5          |            |            | V          |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=100V$ $I_E=0$  |            |            | 1          | $\mu A$    |
| DC Current Gain                         | $h_{FE}$      | $V_{CE}=5V$ $I_C=10mA$   | 130        |            | 330        |            |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=30mA$ $I_B=3mA$   |            |            | 1          | V          |
| Transition Frequency                    | $f_T$         | $V_{CB}=10V$ $I_E=-10mA$<br>$f=200MHz$                                 |            | 160        |            | MHz        |
| Collector Output Capacitance            | $C_{ob}$      | $V_{CB}=10V$ $I_E=0$<br>$f=1MHz$                                       |            |            | 3          | pF         |
| Noise Voltage                           | NV            | $V_{CE}=10V$ $I_C=1mA$<br>$G_v=80dB$ $R_g=100k\Omega$<br>Function=FLAT |            | 150        | 300        | mV         |

电参数曲线图 / Electrical Characteristic Curve



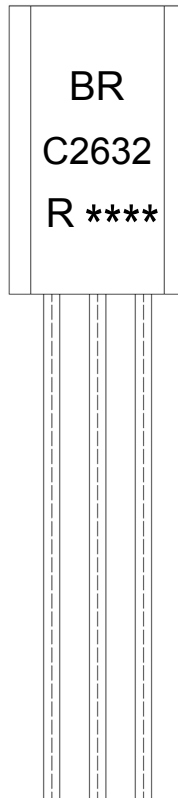
外形尺寸图 / Package Dimensions

T0-92LM

Unit: mm



印章说明 / Marking Instructions



说明：

- BR: 为公司代码
- C2632 : 为型号代码
- R: 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.
- C2632: Product Type.
- R:  $h_{FE}$  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-92LM              | 1,000            | 8                     | 8,000                  | 5                            | 40,000                 | 135×190                    | 237×172×102 | 560×245×195 |

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-92LM              | 2,500              | 1                      | 100                     | 10                           | 25,000                 | 328×230×42                 | 小箱 480×346×235<br>大箱 547×407×268 |

**使用说明 / Notices**