

## / Descriptions

TO-92LM          PNP          Silicon PNP transistor in a TO-92LM Plastic Package.

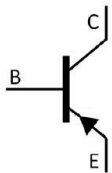
## / Features

, 2SC1384          2 3  
Low  $V_{CE(sat)}$ , 2 3W output in complementary pair with 2SC1384.

## / Applications

AF power amplifier and driver applications.

## / Equivalent Circuit



## / Pinning



PIN1   Base          PIN 2   Collector          PIN 3   Emitter

## / $h_{FE}$ Classifications & Marking

| $h_{FE}$ Classifications<br>Symbol | Q      | R       | S       |
|------------------------------------|--------|---------|---------|
| $h_{FE}$ Range                     | 85~170 | 120~240 | 170~340 |

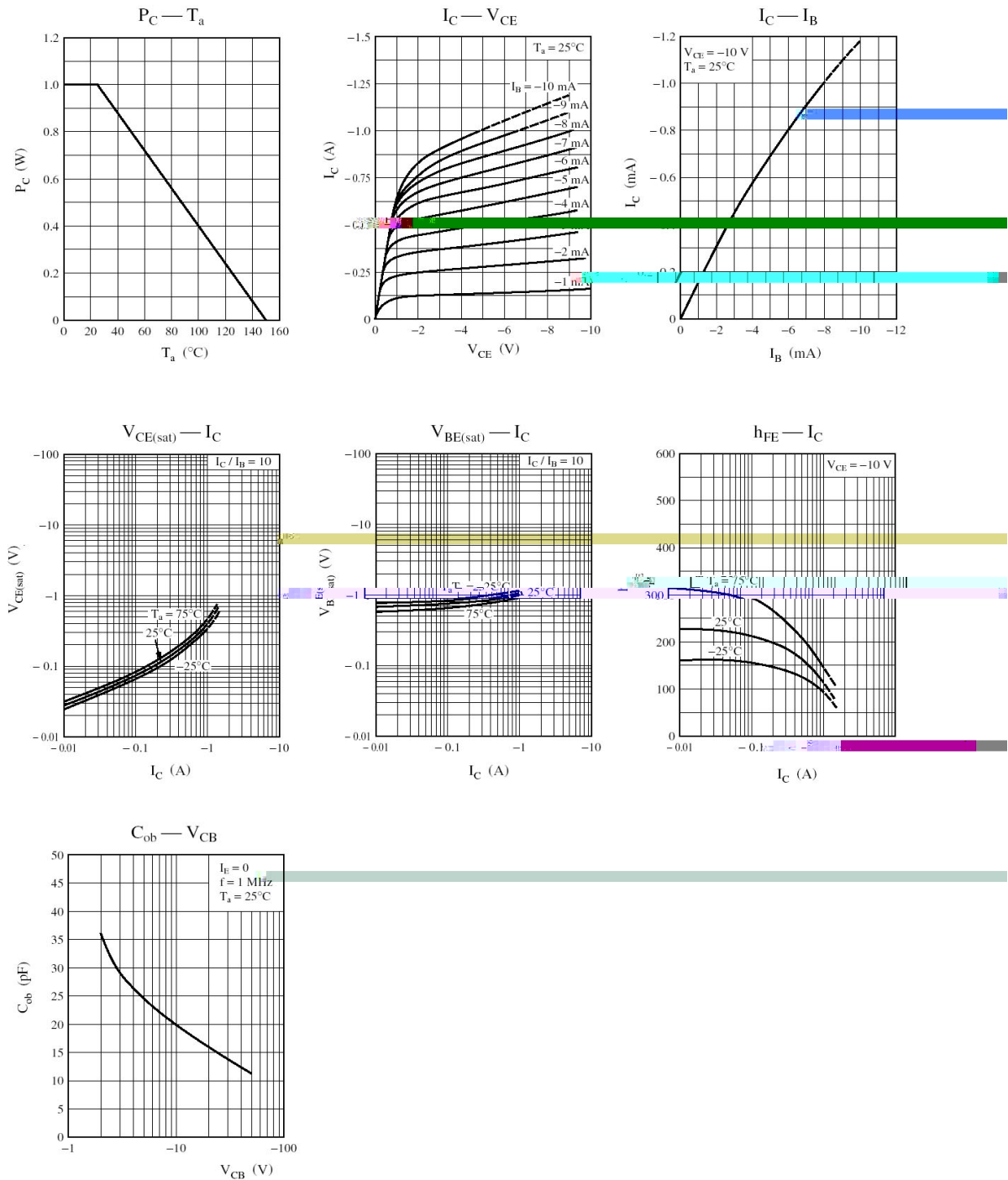
**/ Absolute Maximum Ratings(Ta=25 )**

| Parameter                             | Symbol    | Rating  | Unit |
|---------------------------------------|-----------|---------|------|
| Collector to Base Voltage             | $V_{CBO}$ | -60     | V    |
| Collector to Emitter Voltage          | $V_{CEO}$ | -50     | V    |
| Emitter to Base Voltage               | $V_{EBO}$ | -5.0    | V    |
| Collector Current - Continuous        | $I_C$     | -1.0    | A    |
| Collector Current – Continuous(Pulse) | $I_{CP}$  | -1.5    | A    |
| Collector Power Dissipation           | $P_C$     | 1.0     | W    |
| Junction Temperature                  | $T_j$     | 150     | °C   |
| Storage Temperature Range             | $T_{stg}$ | -55 150 | °C   |

**/ Electrical Characteristics(Ta=25 )**

| Parameter                               | Symbol        | Test Conditions                           | Min  | Typ   | Max  | Unit    |
|-----------------------------------------|---------------|-------------------------------------------|------|-------|------|---------|
| Collector to Base Breakdown Voltage     | $V_{CBO}$     | $I_C = -10\mu A$ $I_E = 0$                | -60  |       |      | V       |
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C = -2.0mA$ $I_B = 0$                  | -50  |       |      | V       |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E = -10\mu A$ $I_C = 0$                | -5.0 |       |      | V       |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB} = -20V$ $I_E = 0$                 |      |       | -0.1 | $\mu A$ |
| DC Current Gain                         | $h_{FE(1)}$   | $V_{CE} = -10V$ $I_C = -500mA$            | 85   | 160   | 340  |         |
|                                         | $h_{FE(2)}$   | $V_{CE} = -5.0V$ $I_C = -1.0A$            | 50   | 100   |      |         |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -500mA$ $I_B = -50mA$              |      | -0.2  | -0.4 | V       |
| Base to Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = -500mA$ $I_B = -50mA$              |      | -0.85 | -1.2 | V       |
| Transition Frequency                    | $f_T$         | $V_{CE} = -10V$ $I_C = -50mA$             |      | 200   |      | MHz     |
| Collector output capacitance            | $C_{ob}$      | $V_{CB} = -10V$ $I_E = 0$<br>$f = 1.0MHz$ |      | 20    | 30   | pF      |

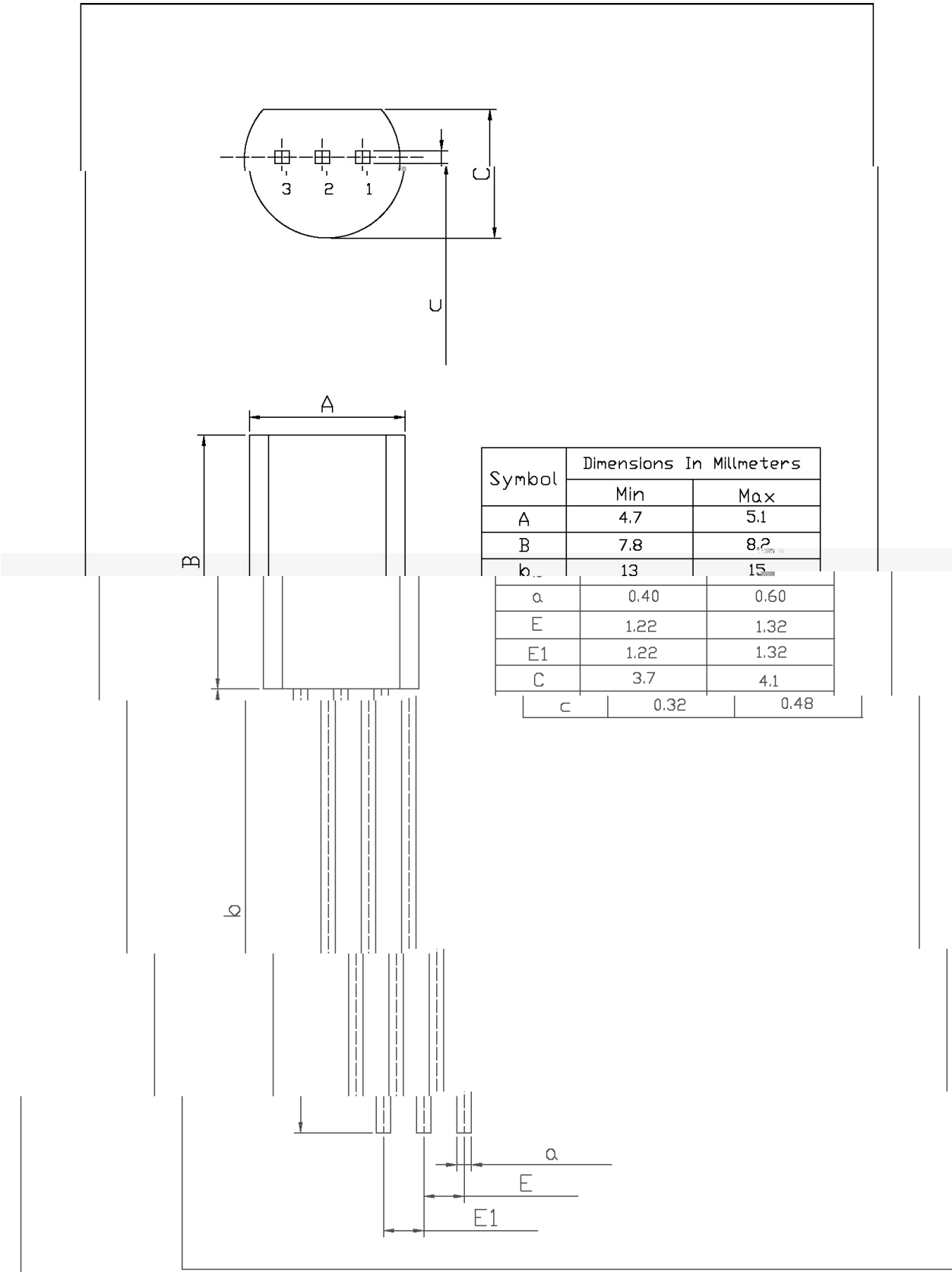
**/ Electrical Characteristic Curve**



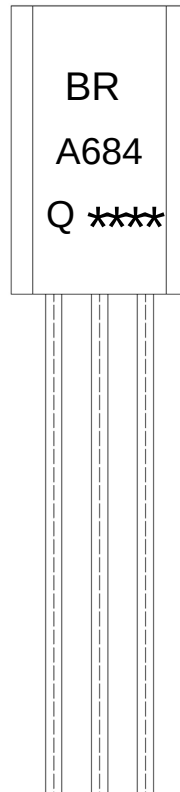
/ Package Dimensions

TO-92LM

Unit: mm



/ Marking Instructions



BR:

A684

Q:  $h_{FE}$

\*\*\*\*

Note:

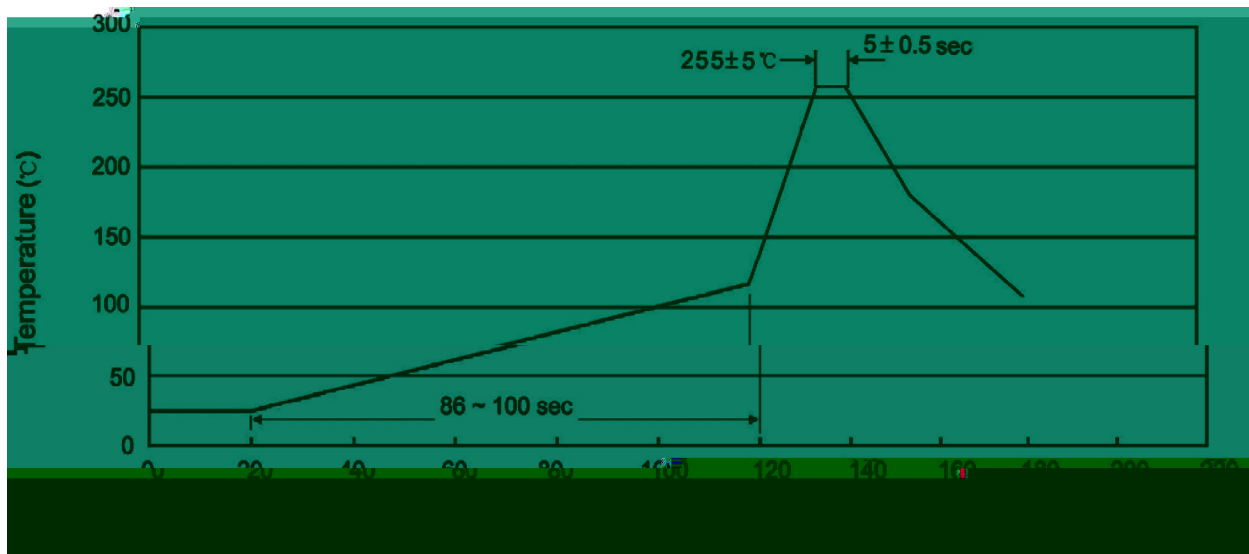
BR: Company Code.

A684: Product Type.

Q:  $h_{FE}$  Classifications Symbol

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

( ) / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- |   |       |     |           |                                         |                                      |
|---|-------|-----|-----------|-----------------------------------------|--------------------------------------|
| 1 | 25    | 150 | 60        | 90sec;                                  | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 |     | 5±0.5sec; | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |                                      |
| 3 |       | 2   | 10        | /sec.                                   | 3. Cooling Speed: 2~10 /sec.         |

/ Resistance to Soldering Heat Test Conditions

270±5      10±1 sec.      Temp.:270±5      Time:10±1 sec

/ Packaging SPEC.

/ 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 |

/ 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 |

/ Notices