

## / Descriptions

TO-92(R)

PNP

Silicon PNP transistor in a TO-92(R) Plastic Package.

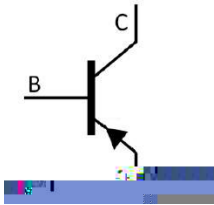
## / Features

High Voltage, Low Noise.

## / Applications

General purpose and switching application.

## / Equivalent Circuit



## / Pinning



PIN1 Emitter

PIN 2 Base

PIN 3 Collector

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

| $h_{FE}$ Classifications<br>Symbol | A       | B       | C       |
|------------------------------------|---------|---------|---------|
| $h_{FE}$ Range                     | 125 250 | 220 475 | 420 800 |

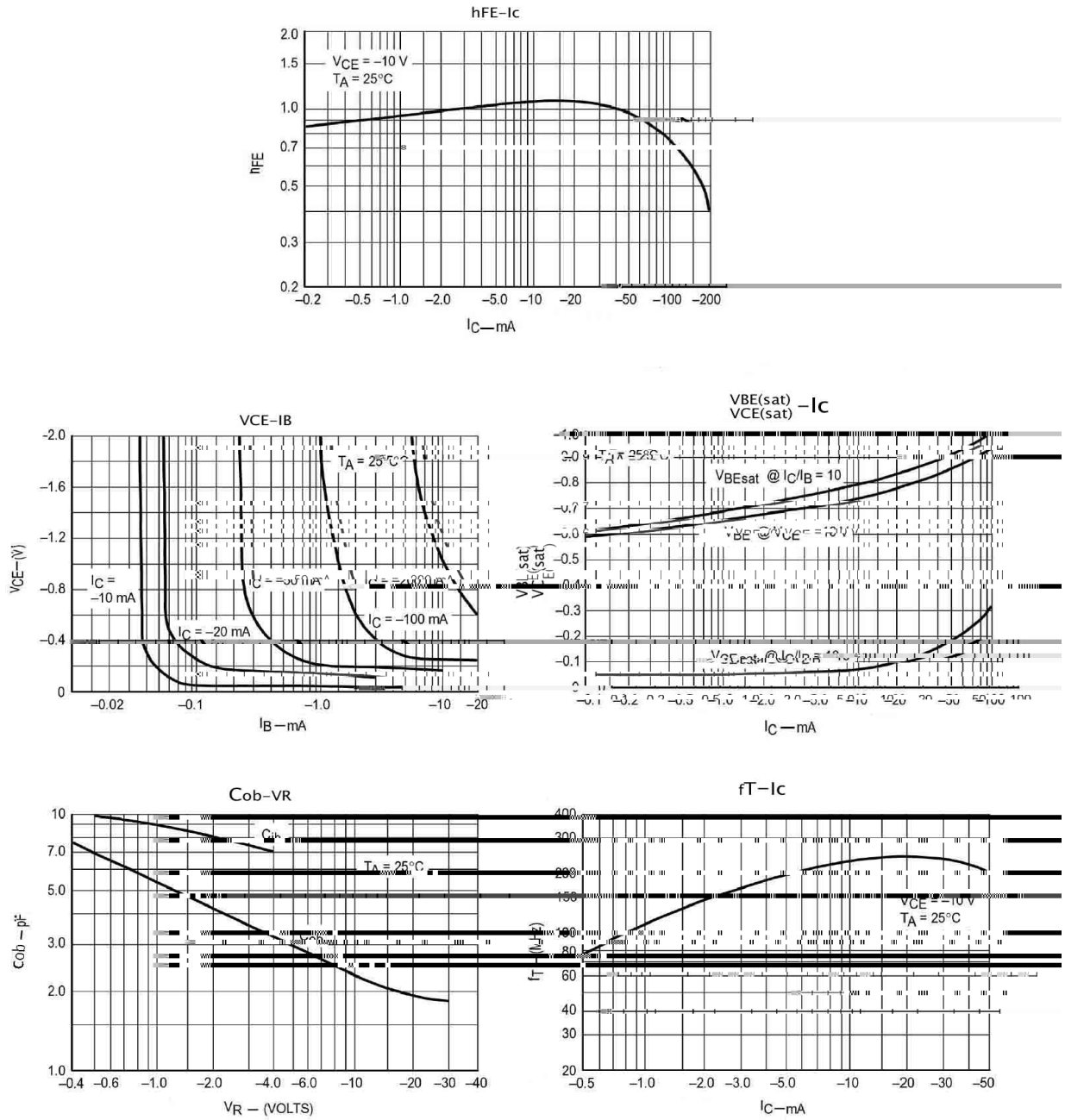
### / Absolute Maximum Ratings(Ta=25 )

| Parameter                      | Symbol    | Rating  | Unit |
|--------------------------------|-----------|---------|------|
| Collector to Base Voltage      | $V_{CBO}$ | -30     | V    |
| Collector to Emitter Voltage   | $V_{CEO}$ | -30     | V    |
| Emitter to Base Voltage        | $V_{EBO}$ | -5.0    | V    |
| Collector Current - Continuous | $I_C$     | -100    | mA   |
| Emitter Current - Continuous   | $I_E$     | 100     | mA   |
| Collector Power Dissipation    | $P_C$     | 625     | mW   |
| Junction Temperature           | $T_j$     | 150     |      |
| Storage Temperature Range      | $T_{stg}$ | -55 150 |      |

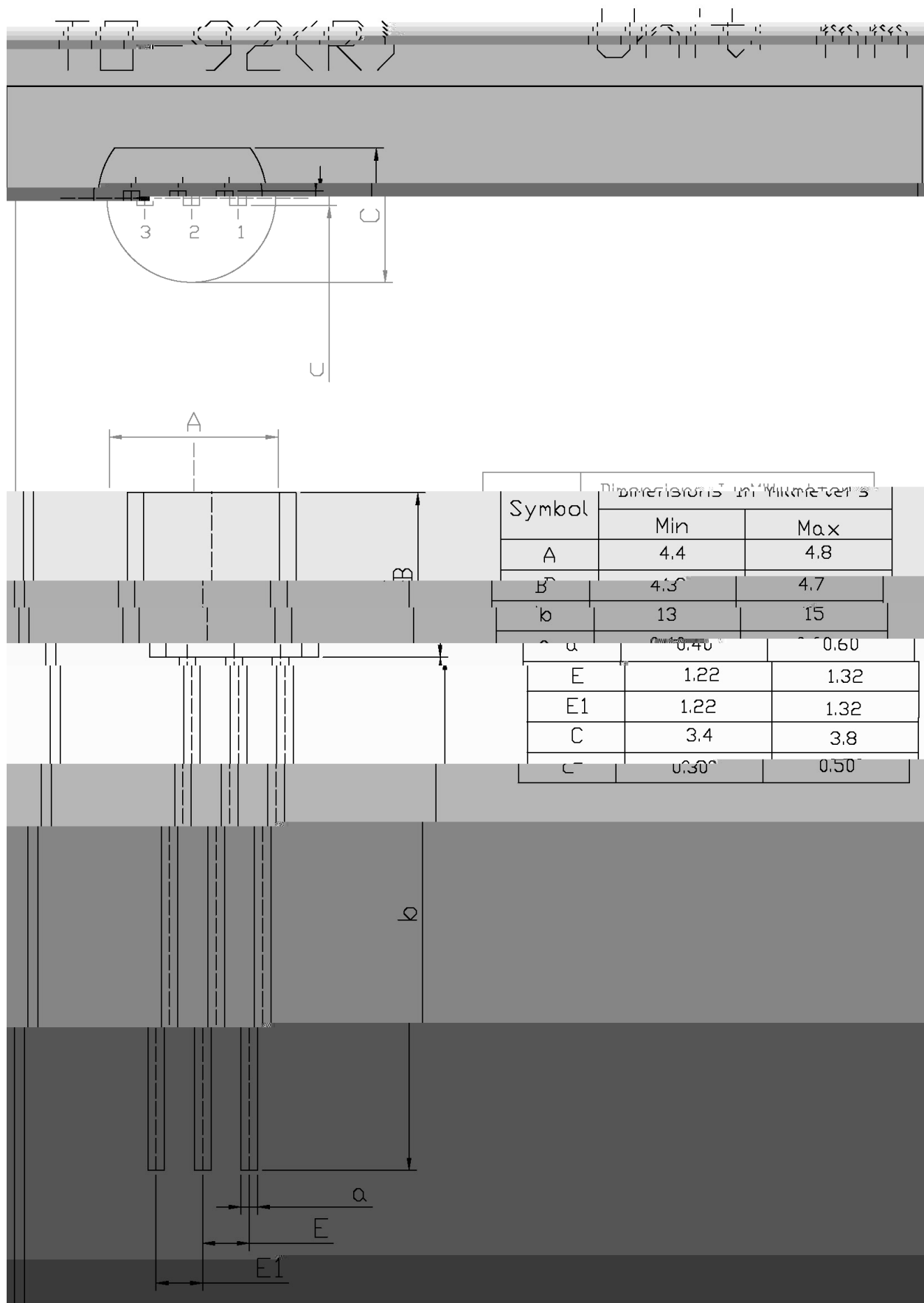
### / Electrical Characteristics(Ta=25 )

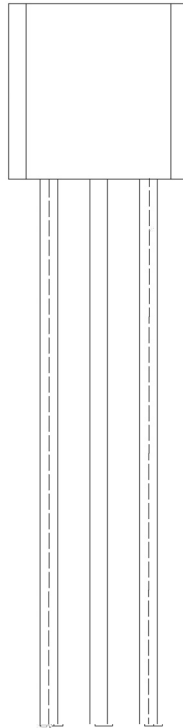
| Parameter                            | Symbol        | Test Conditions                                     | Min  | Typ  | Max    | Unit |
|--------------------------------------|---------------|-----------------------------------------------------|------|------|--------|------|
| Collector Cut-Off Current            | $I_{CBO}$     | $V_{CB}=-30V$ $I_E=0$                               |      |      | -0.015 | A    |
| DC Current Gain                      | $h_{FE}$      | $V_{CE}=-5.0V$ $I_C=-2.0mA$                         | 125  |      | 800    |      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-100mA$ $I_B=-5.0mA$                           |      |      | -0.65  | V    |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=-100mA$ $I_B=-5.0mA$                           |      | -0.9 | -1.1   | V    |
| Base-Emitter Voltage                 | $V_{BE(1)}$   | $V_{CE}=-5.0V$ $I_C=-2.0mA$                         | -0.6 |      | -0.75  | V    |
|                                      | $V_{BE(2)}$   | $V_{CE}=-5.0V$ $I_C=-10mA$                          |      |      | -0.8   | V    |
| Current Gain Bandwidth Product       | $f_T$         | $V_{CE}=-5.0V$ $I_C=-10mA$<br>$f=100MHz$            |      | 150  |        | MHz  |
| Transition Frequency                 | $C_{ob}$      | $V_{CB}=-10V$ $f=1.0MHz$                            |      | 4.5  |        | pF   |
| Noise Figure                         | NF            | $V_{CE}=-6.0V$ $I_C=-0.1mA$<br>$R_g=10K$ $f=1.0KHz$ |      | 1.0  | 10     | dB   |

/ Electrical Characteristic Curve



# / Package Dimensions





( ) / 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 | Units |  |  |  |  | Dimension |  | (unit mm3) |
|--------------|-------|--|--|--|--|-----------|--|------------|
|              |       |  |  |  |  |           |  |            |
|              |       |  |  |  |  |           |  |            |
|              |       |  |  |  |  |           |  |            |

/ AMMO

| Package Type | Units |  |  |  |  | Dimension |  | (unit mm3) |
|--------------|-------|--|--|--|--|-----------|--|------------|
|              |       |  |  |  |  |           |  |            |
|              |       |  |  |  |  |           |  |            |
|              |       |  |  |  |  |           |  |            |

/ Notices