## / Descriptions

Silicon PNP transistor in a TO-92 Plastic Package.

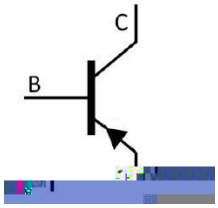
## / Features

Complementary pair with 2SC2021.

## / Applications

General small-signal amplifier, preamplifiers, equalizer amplifiers, RF amplifiers and oscillators, medium-speed switching.

## / Equivalent Circuit




## / Pinning




PIN1 Base PIN 2 Collector PIN 3 Emitter

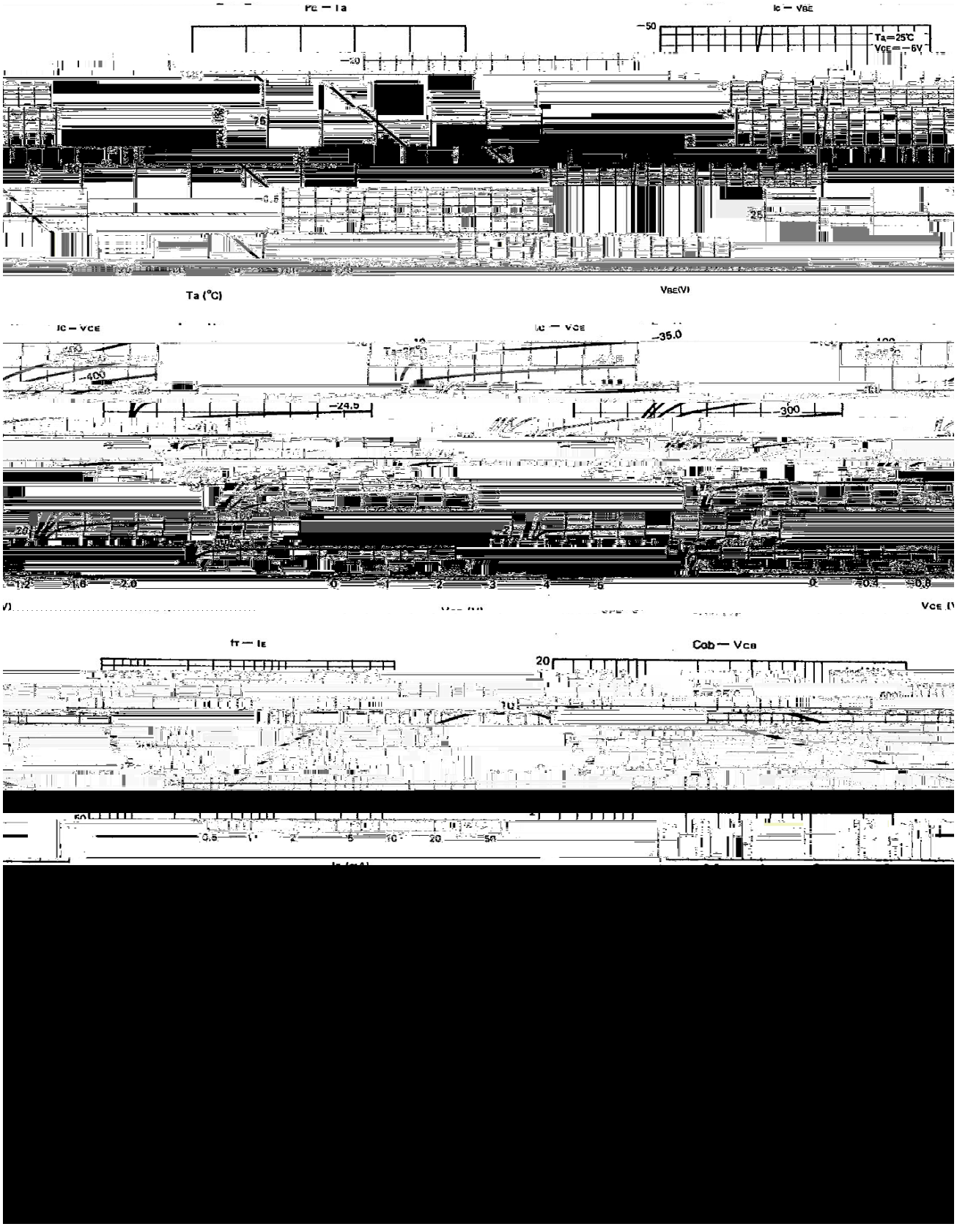
## / hFE Classifications & Marking

| $h_{FE}$ Classifications Symbol | Q | R | S |
|---|---|---|---|
| $h_{FE}$ Range | 120~270 | 180~390 | 270~560 |

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector to Base Voltage | $V_{CBO}$ | -50 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | -40 | V |
| Emitter to Base Voltage | $V_{EBO}$ | -5.0 | V |
| Collector Current - Continuous | $I_C$ | -100 | mA |
| Collector Power Dissipation | $P_C$ | 300 | mW |
| Junction Temperature | $T_j$ | 150 | |
| Storage Temperature Range | $T_{stg}$ | -55 150 | |

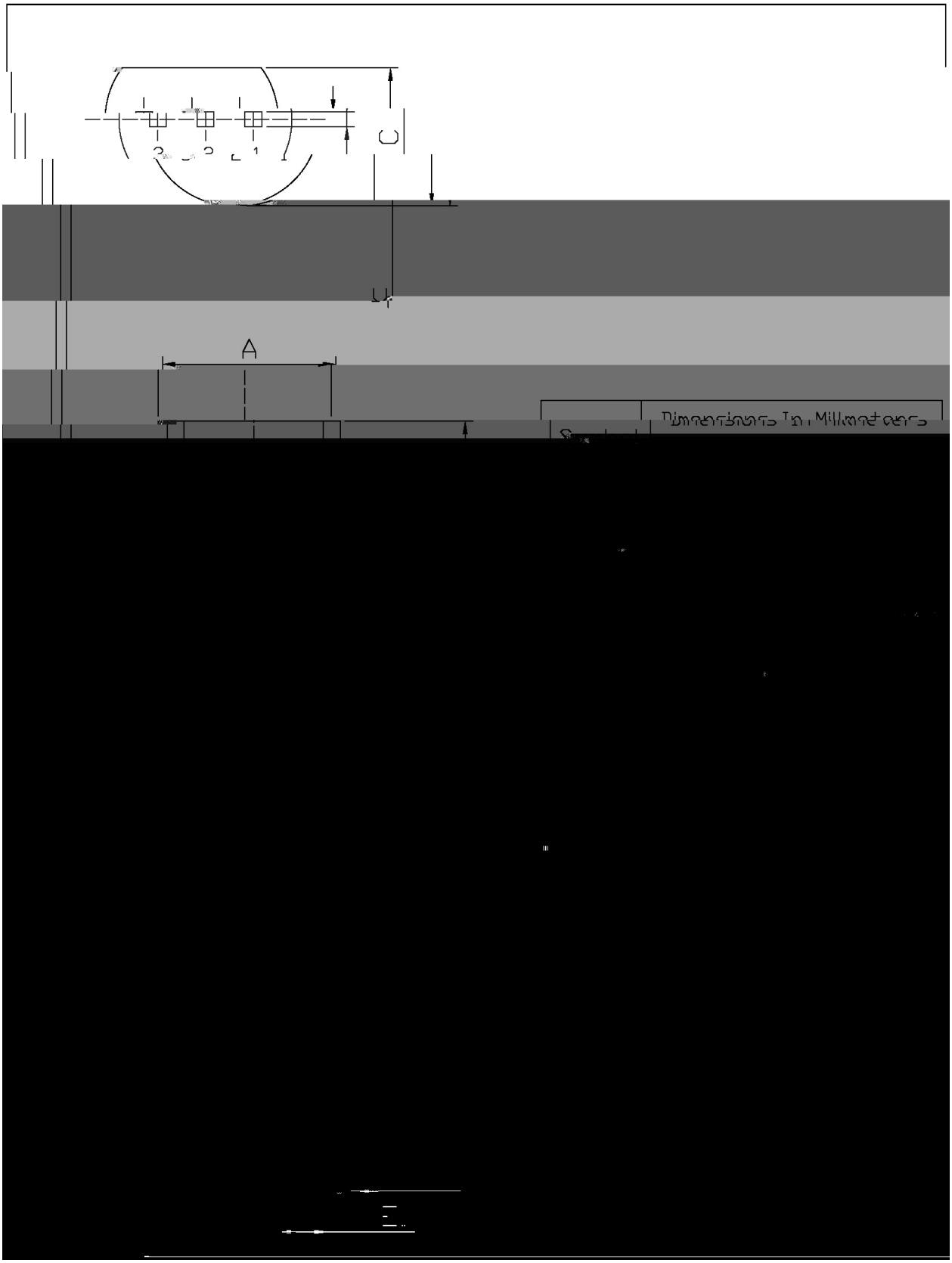
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector to Base Breakdown Voltage | $V_{CBO}$ | $I_C$=-50μA $I_E$=0 | -50 | | | V |
| Collector to Emitter Breakdown Voltage | $V_{CEO}$ | $I_C$=-1.0mA $I_B$=0 | -40 | | | V |
| Emitter to Base Breakdown Voltage | $V_{EBO}$ | $I_E$=-50μA $I_C$=0 | -5.0 | | | V |
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=-30V $I_E$=0 | | | -0.5 | μA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=-4.0V $I_C$=0 | | | -0.5 | μA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=-6.0V $I_C$=-1.0mA | 120 | | 560 | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=-50mA $I_B$=-5.0mA | | -0.1 | -0.5 | V |
| Transition Frequency | $f_T$ | $V_{CE}$=-12V $I_C$=-2.0mA | | 140 | | MHz |
| Output Capacitance | $C_{ob}$ | $V_{CB}$=-12V $I_E$=0 f=1.0MHz | | 4.0 | 5.0 | pF |

## / Electrical Characteristic Curve

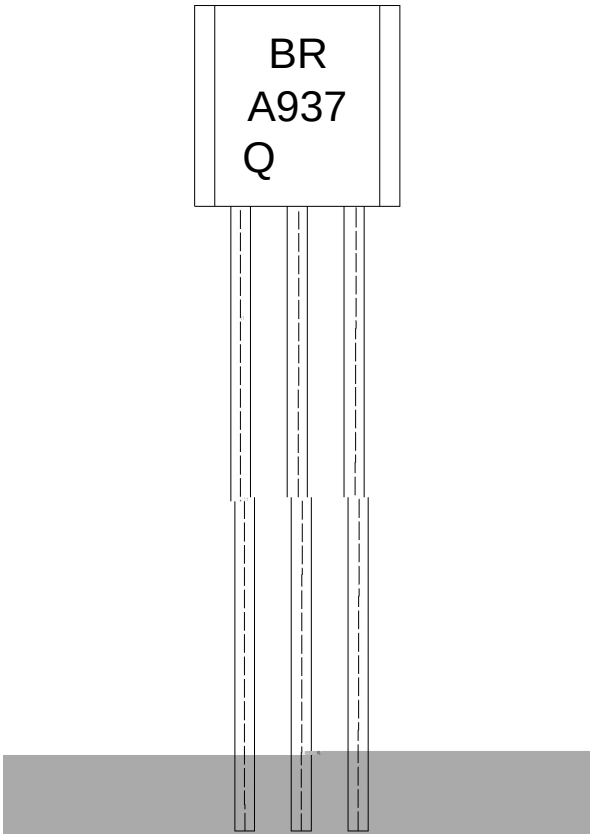


## / Package Dimensions

TO-92 Unit: mm



## / Marking Instructions

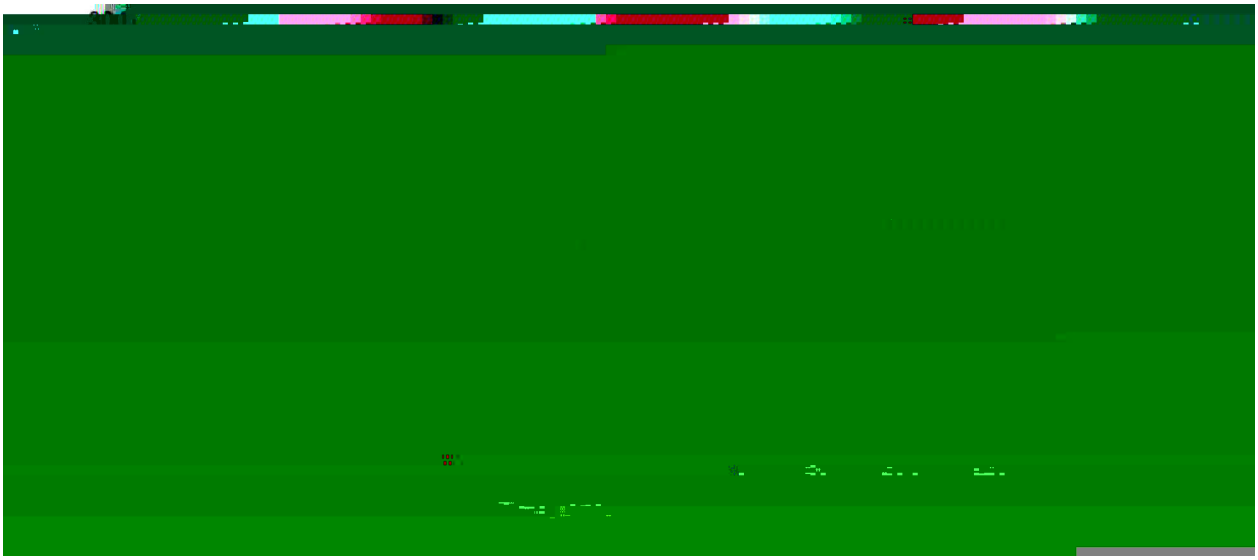



$h_{FE}$

Note:

| | |
|---|---|
| BR: | Company Code. |
| A937: | Product Type. |
| | $h_{FE}$ 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 | Units | | | | | Dimension | | (unit mm3) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |