

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# HN3C10FT

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

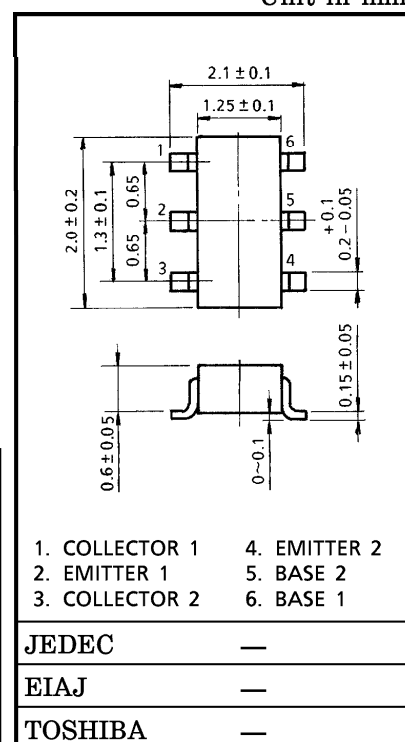
- TWO devices are built in to the super-thin and ultra super mini (6pins) package : TU6

## MOUNTED DEVICES

|                                                 |         |
|-------------------------------------------------|---------|
|                                                 | Q1 / Q2 |
| Three-pins (SSM) mold products are corresponded | 2SC5086 |

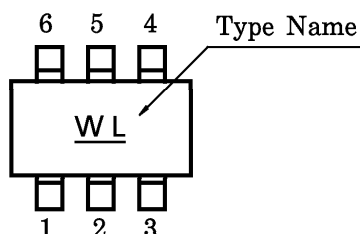
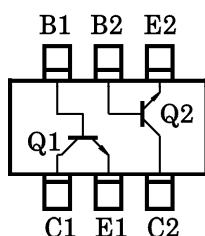
## MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC              | SYMBOL           | RATING  | UNIT |
|-----------------------------|------------------|---------|------|
| Collector-Base Voltage      | V <sub>CBO</sub> | 20      | V    |
| Collector-Emitter Voltage   | V <sub>CEO</sub> | 12      | V    |
| Emitter-Base Voltage        | V <sub>EBO</sub> | 3       | V    |
| Collector Current           | I <sub>C</sub>   | 80      | mA   |
| Base Current                | I <sub>B</sub>   | 40      | mA   |
| Collector Power Dissipation | P <sub>C</sub>   | 200     | mW   |
| Junction Temperature        | T <sub>j</sub>   | 125     | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -55~125 | °C   |



## PIN ASSIGNMENT (TOP VIEW)

## MARKING



961001EAA1

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## ELECTRICAL CHARACTERISTICS (Q1, Q2) (Ta = 25°C)

| CHARACTERISTIC               | SYMBOL            | TEST CONDITION                                | MIN. | TYP. | MAX. | UNIT    |
|------------------------------|-------------------|-----------------------------------------------|------|------|------|---------|
| Collector Cut-off Current    | $I_{CBO}$         | $V_{CB} = 10V, I_E = 0$                       | —    | —    | 1    | $\mu A$ |
| Emitter Cut-off Current      | $I_{EBO}$         | $V_{EB} = 1V, I_C = 0$                        | —    | —    | 1    | $\mu A$ |
| DC Current Gain              | $h_{FE}$          | $V_{CE} = 10V, I_C = 20mA$                    | 80   | —    | 240  | —       |
| Transition Frequency         | $f_T$             | $V_{CE} = 10V, I_C = 20mA$                    | 5    | 7    | —    | GHz     |
| Insertion Gain               | $ S_{21e} ^2 (1)$ | $V_{CE} = 10V, I_C = 20mA,$<br>$f = 500MHz$   | —    | 16.5 | —    | dB      |
|                              | $ S_{21e} ^2 (2)$ | $V_{CE} = 10V, I_C = 20mA,$<br>$f = 1000MHz$  | 7.5  | 11   | —    |         |
| Noise Figure                 | NF (1)            | $V_{CE} = 10V, I_C = 5mA,$<br>$f = 500MHz$    | —    | 1    | —    | dB      |
|                              | NF (2)            | $V_{CE} = 10V, I_C = 5mA,$<br>$f = 1000MHz$   | —    | 1.1  | 2    |         |
| Output Capacitance           | $C_{ob}$          | $V_{CB} = 10V, I_E = 0,$<br>$f = 1MHz$ (Note) | —    | 0.55 | 1.05 | pF      |
| Reverse Transfer Capacitance | $C_{re}$          |                                               | —    | 0.6  | 1.1  |         |

(Note)  $C_{re}$  is measured by 3 terminal method capacitance bridge.