

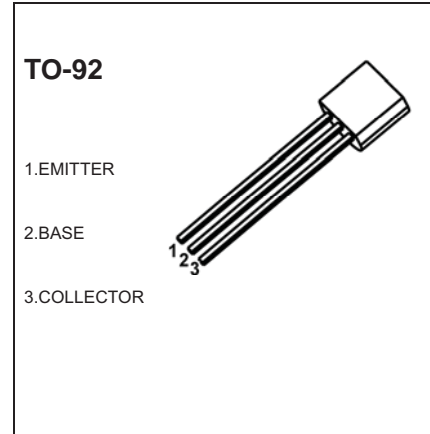


## TO-92 Plastic-Encapsulate Transistors

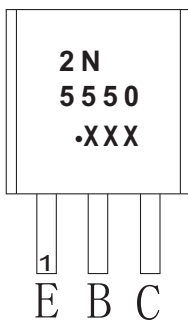
### 2N5550 TRANSISTOR (NPN)

#### FEATURES

- Switching and Amplification in High Voltage
- Applications such as Telephony
- Low Current(Max. 600mA)
- High Voltage(Max.160V)

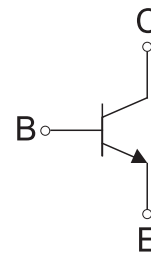


#### MARKING



2N5550=Device code  
 Solid dot=Green molding compound device,  
 if none,the normal device  
 XXX=Code

#### Equivalent Circuit



#### ORDERING INFORMATION

| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| 2N5550      | TO-92   | Bulk           | 1000pcs/Bag   |
| 2N5550-TA   | TO-92   | Tape           | 2000pcs/Box   |

#### MAXIMUM RATINGS (T<sub>a</sub> =25 °C unless otherwise noted)

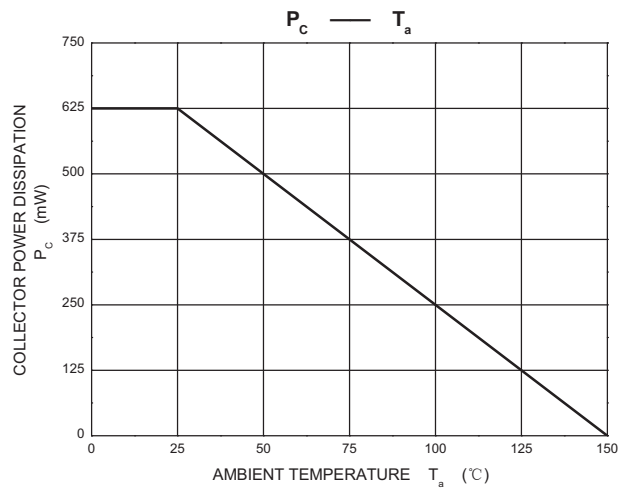
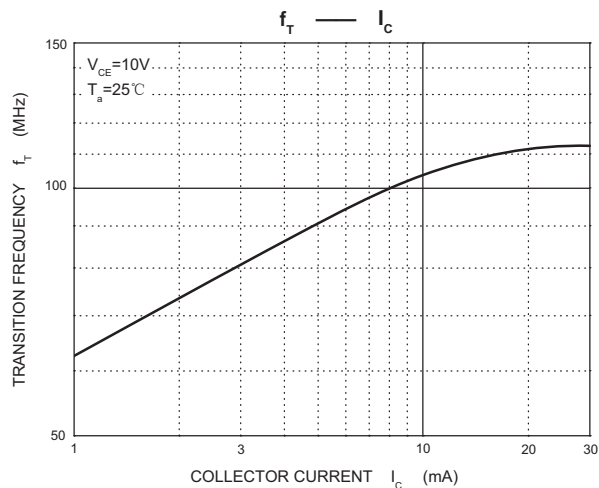
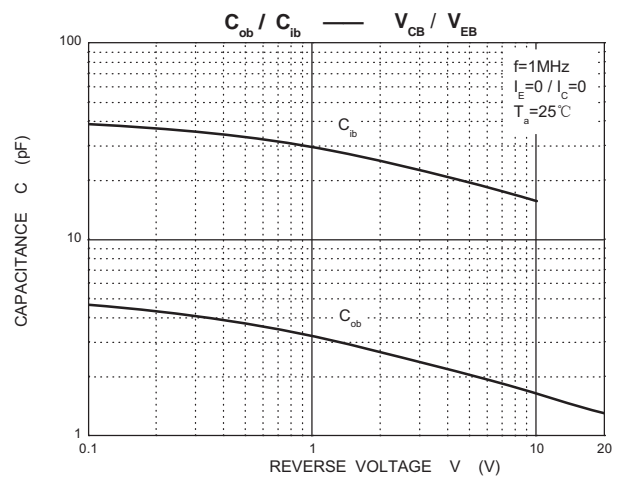
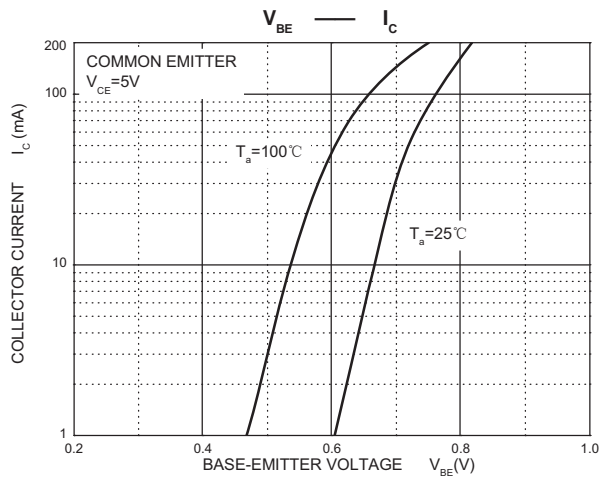
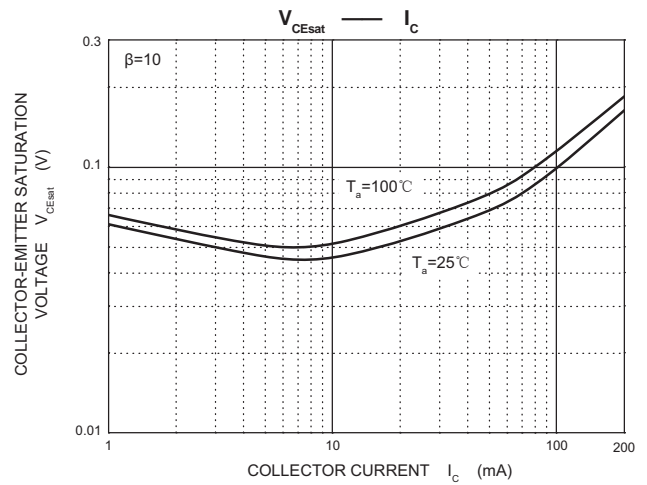
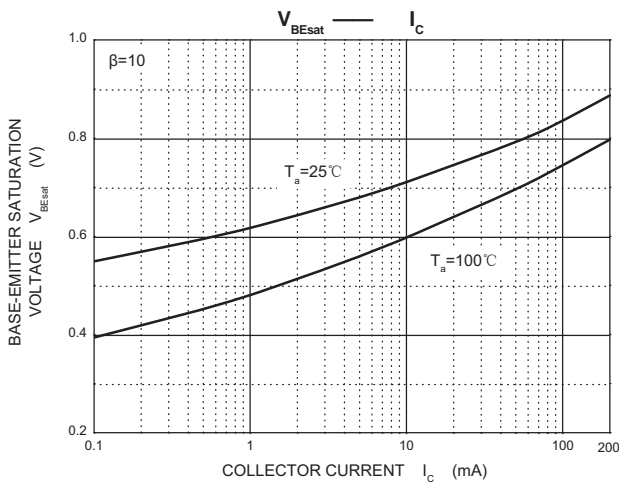
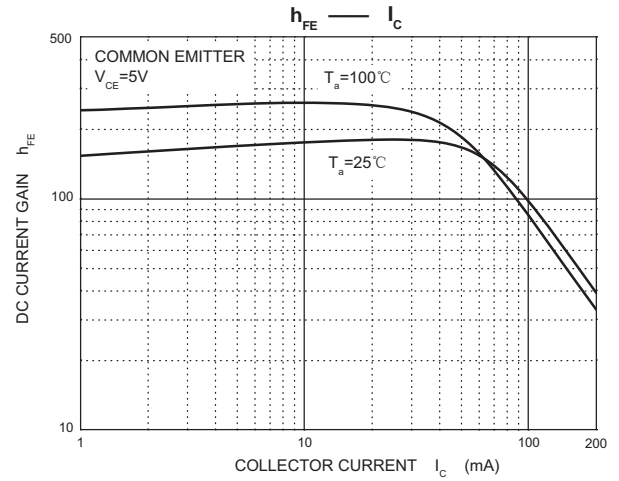
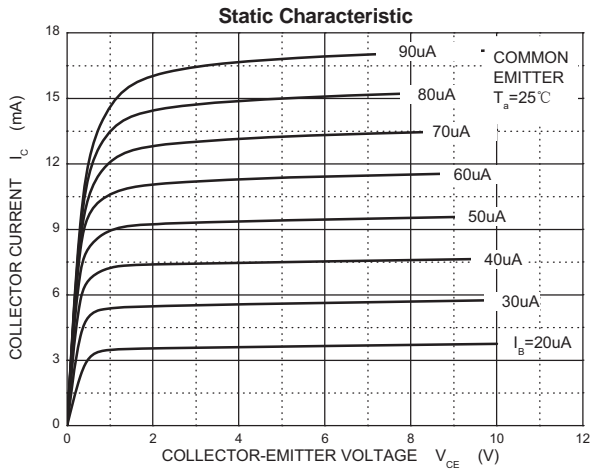
| Symbol                           | Parameter  | Value   | Unit |
|----------------------------------|--|---------|------|
| V <sub>CB0</sub>                 | Collector-Base Voltage                           | 160     | V    |
| V <sub>CE0</sub>                 | Collector-Emitter Voltage                        | 140     | V    |
| V <sub>EB0</sub>                 | Emitter-Base Voltage                             | 6       | V    |
| I <sub>C</sub>                   | Collector Current -Continuous                    | 0.6     | A    |
| P <sub>C</sub>                   | Collector Power Dissipation                      | 0.625   | W    |
| T <sub>J</sub> ,T <sub>stg</sub> | Operation Junction and Storage Temperature Range | -55-150 | °C   |

## ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$  unless otherwise specified

| Parameter                            | Symbol        | Test conditions  | Min | Typ | Max          | Unit          |
|--------------------------------------|---------------|--|-----|-----|--------------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\ \mu\text{A}, I_E=0$  | 160 |     |              | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$  | 140 |     |              | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=10\ \mu\text{A}, I_C=0$   | 6   |     |              | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=100\text{V}, I_E=0$  |     |     | 0.1          | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=4\text{V}, I_C=0$  |     |     | 0.05         | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=5\text{V}, I_C=1\text{mA}$   | 60  |     |              |               |
|                                      | $h_{FE(2)}$   | $V_{CE}=5\text{V}, I_C=10\text{mA}$  | 60  |     | 250          |               |
|                                      | $h_{FE(3)}$   | $V_{CE}=5\text{V}, I_C=50\text{mA}$  | 20  |     |              |               |
| Collector-emitter saturation voltage | $V_{CEsat}$   | $I_C=10\text{mA}, I_B=1\text{mA}$<br>$I_C=50\text{mA}, I_B=5\text{mA}$         |     |     | 0.15<br>0.25 | V             |
| Base-emitter saturation voltage      | $V_{BEsat}$   | $I_C=10\text{mA}, I_B=1\text{mA}$<br>$I_C=50\text{mA}, I_B=5\text{mA}$         |     |     | 1<br>1.2     | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$                          | 100 |     | 300          | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$                                      |     |     | 6            | pF            |
| Noise figure                         | NF            | $V_{CE}=5\text{V}, I_C=0.25\text{mA},$<br>$f=1\text{KHZ}, R_s=1\text{k}\Omega$ |     |     | 10           | dB            |

# Typical Characteristics



## TO-92 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 3.300                     | 3.700  | 0.130                | 0.146 |
| A1     | 1.100                     | 1.400  | 0.043                | 0.055 |
| b      | 0.380                     | 0.550  | 0.015                | 0.022 |
| c      | 0.360                     | 0.510  | 0.014                | 0.020 |
| D      | 4.300                     | 4.700  | 0.169                | 0.185 |
| D1     | 3.430                     |        | 0.135                |       |
| E      | 4.300                     | 4.700  | 0.169                | 0.185 |
| e      | 1.270 TYP                 |        | 0.050 TYP            |       |
| e1     | 2.440                     | 2.640  | 0.096                | 0.104 |
| L      | 14.100                    | 14.500 | 0.555                | 0.571 |
| Φ      |                           | 1.600  |                      | 0.063 |
| h      | 0.000                     | 0.380  | 0.000                | 0.015 |

## TO-92 Suggested Pad Layout



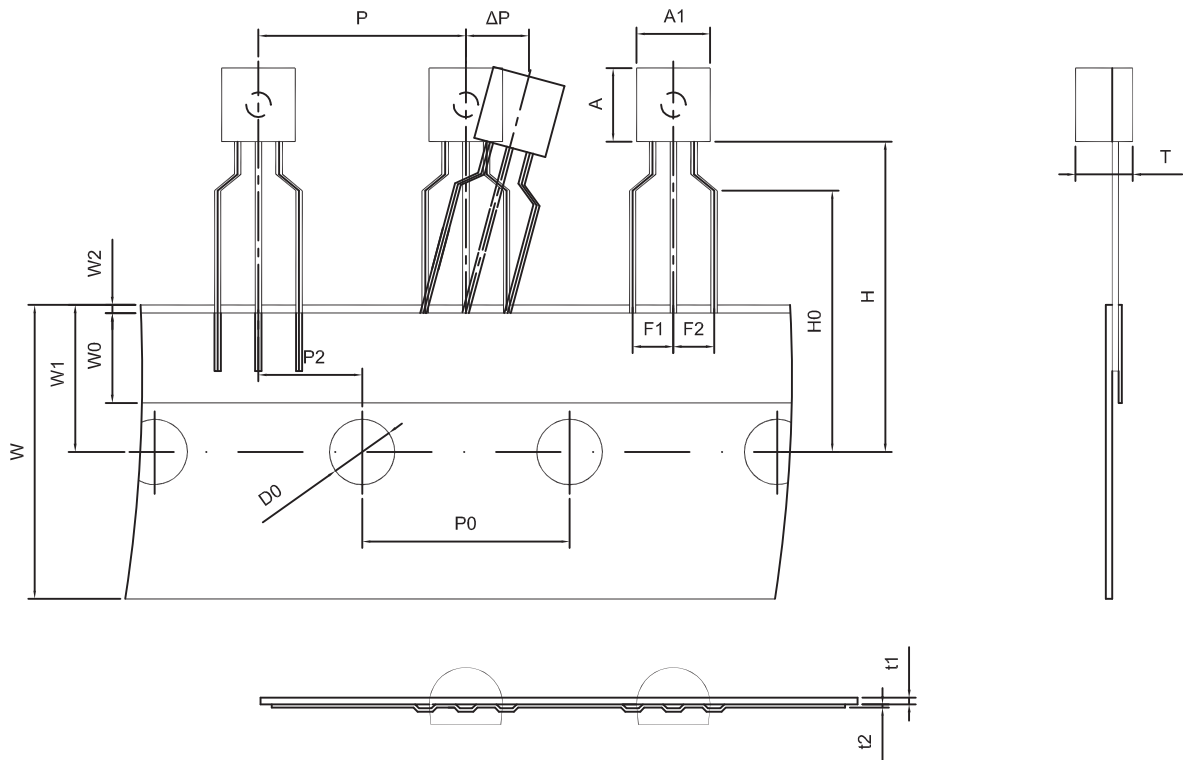
### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

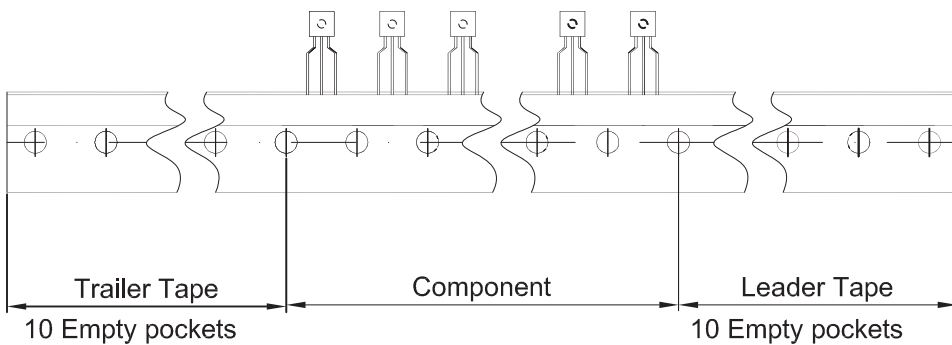
### NOTICE

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# TO-92 Tape and Reel



| Dimensions are in millimeter |     |          |      |      |      |     |     |            |
|------------------------------|-----|----------|------|------|------|-----|-----|------------|
| A1                           | A   | T        | P    | P0   | P2   | F1  | F2  | W          |
| 4.5                          | 4.5 | 3.5      | 12.7 | 12.7 | 6.35 | 2.5 | 2.5 | 18.0       |
| W0                           | W1  | W2       | H    | H0   | D0   | t1  | t2  | $\Delta P$ |
| 6.0                          | 9.0 | 1.0 MAX. | 19.0 | 16.0 | 4.0  | 0.4 | 0.2 | 0          |



| Package | Box      | Box Size(mm) | Carton     | Carton Size(mm) |
|---------|----------|--------------|------------|-----------------|
| TO-92   | 2000 pcs | 333×162×43   | 20,000 pcs | 350×340×250     |

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