

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N3704  
2N3705  
2N3706

SILICON NPN TRANSISTOR

JEDEC TO-92 CASE (ECB)

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3704 thru 2N3706 are NPN Silicon Planar Transistors for general purpose switching and amplifier applications.

## MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ )

|                                               | SYMBOL         | 2N3704<br>2N3705 | 2N3706 | UNIT             |
|-----------------------------------------------|----------------|------------------|--------|------------------|
| Collector-Base Voltage                        | $V_{CB0}$      | 50               | 40     | V                |
| Collector-Emitter Voltage                     | $V_{CE0}$      | 30               | 20     | V                |
| Emitter-Base Voltage                          | $V_{EB0}$      | 5.0              | 5.0    | V                |
| Collector Current                             | $I_C$          | 800              | 800    | mA               |
| Power Dissipation                             | $P_D$          | 625              | 625    | mW               |
| Operating and Storage<br>Junction Temperature | $T_J, T_{STG}$ | -65 TO +150      |        | $^\circ\text{C}$ |

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

| SYMBOL        | TEST CONDITIONS                        | 2N3704 |     | 2N3705 |     | 2N3706 |     | UNIT |
|---------------|----------------------------------------|--------|-----|--------|-----|--------|-----|------|
|               |                                        | MIN    | MAX | MIN    | MAX | MIN    | MAX |      |
| $I_{CB0}$     | $V_{CB}=20\text{V}$                    |        | 100 |        | 100 |        | 100 | nA   |
| $I_{EB0}$     | $V_{EB}=3.0\text{V}$                   |        | 100 |        | 100 |        | 100 | nA   |
| $BV_{CB0}$    | $I_C=100\mu\text{A}$                   | 50     |     | 50     |     | 40     |     | V    |
| $BV_{CE0}$    | $I_C=10\text{mA}$                      | 30     |     | 30     |     | 20     |     | V    |
| $BV_{EB0}$    | $I_E=100\mu\text{A}$                   | 5.0    |     | 5.0    |     | 5.0    |     | V    |
| $h_{FE}$      | $V_{CE}=2.0\text{V}, I_C=50\text{mA}$  | 100    | 300 | 50     | 150 | 30     | 600 | -    |
| $V_{BE(ON)}$  | $V_{CE}=2.0\text{V}, I_C=100\text{mA}$ | 0.5    | 1.0 | 0.5    | 1.0 | 0.5    | 1.0 | V    |
| $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=5.0\text{mA}$   |        | 0.6 |        | 0.8 |        | 1.0 | V    |
| $f_T$         | $V_{CE}=2.0\text{V}, I_C=50\text{mA}$  | 100    |     | 100    |     | 100    |     | MHz  |
| $C_{ob}$      | $V_{CB}=10\text{V}, f=1.0\text{MHz}$   |        | 12  |        | 12  |        | 12  | pF   |