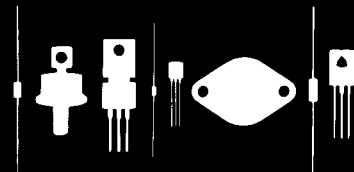


Central
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2N4256

NPN SILICON TRANSISTOR

JEDEC TO-92 CASE (ECB)

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N4256 type is a Silicon NPN Planar Epitaxial Transistor designed for low level medium speed switching applications.

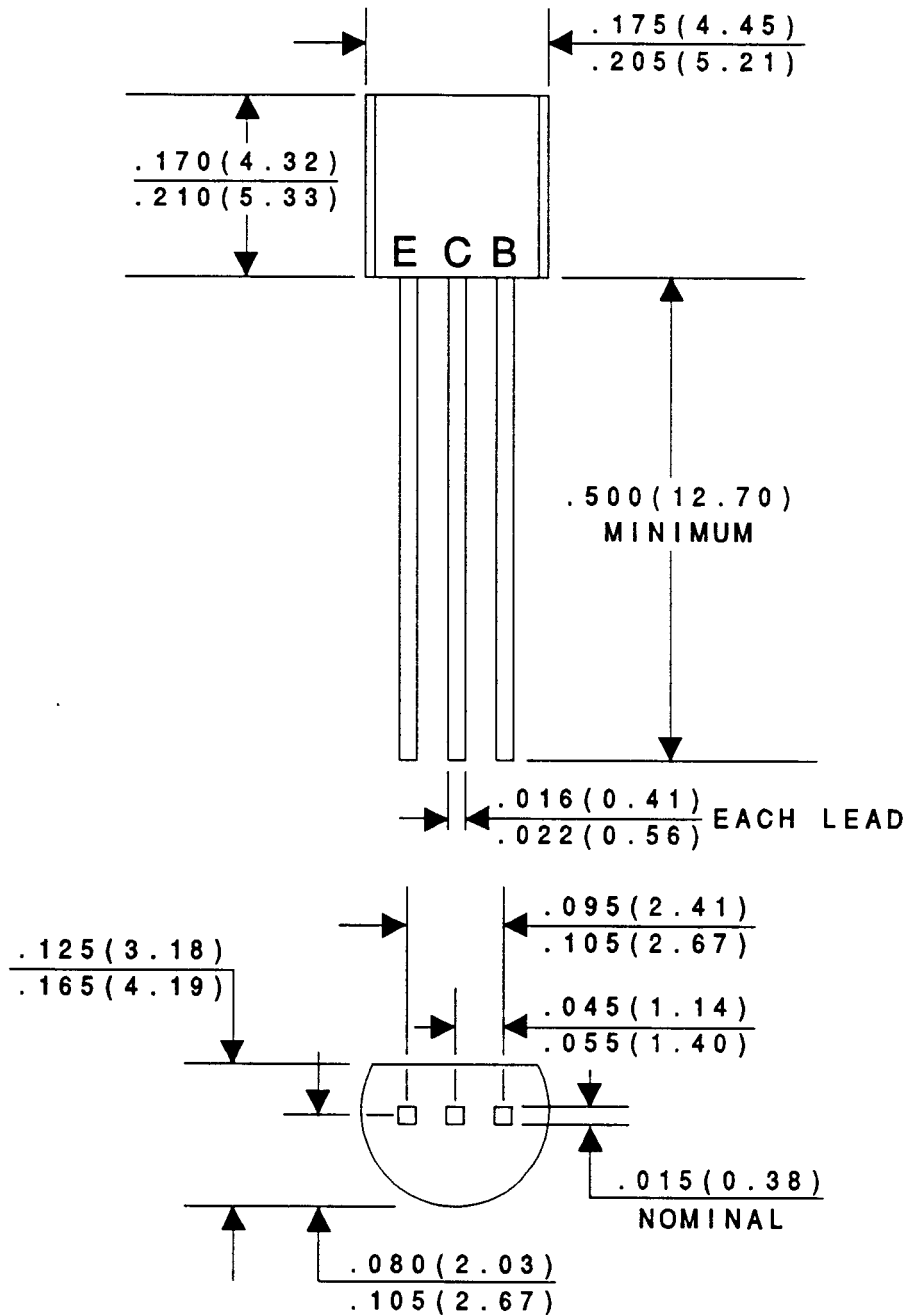
MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

| | <u>SYMBOL</u> | | <u>UNITS</u> |
|--|----------------|-------------|--------------------|
| Collector-Base Voltage | V_{CBO} | 30 | V |
| Collector-Emitter Voltage | V_{CES} | 30 | V |
| Emitter-Base Voltage | V_{EBO} | 5.0 | V |
| Collector Current | I_C | 100 | mA |
| Power Dissipation | P_D | 625 | mW |
| Power Dissipation ($T_C = 25^\circ\text{C}$) | P_D | 1.5 | W |
| Operating and Storage | | | |
| Junction Temperature | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | 200 | $^\circ\text{C/W}$ |
| Thermal Resistance | θ_{JC} | 83.3 | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| <u>SYMBOL</u> | <u>TEST CONDITIONS</u> | <u>MIN</u> | <u>TYP</u> | <u>MAX</u> | <u>UNITS</u> |
|---------------|--|------------|------------|------------|---------------|
| I_{CBO} | $V_{CB} = 30\text{V}$ | | | 500 | nA |
| I_{CBO} | $V_{CE} = 18\text{V}, T_A = 100^\circ\text{C}$ | | | 15 | μA |
| I_{CES} | $V_{CE} = 30\text{V}$ | | | 500 | nA |
| I_{EBO} | $V_{EB} = 5.0\text{V}$ | | | 500 | nA |
| BV_{CBO} | $I_C = 100\mu\text{A}$ | 30 | | | V |
| BV_{CES} | $I_C = 1.0\text{mA}$ | 30 | | | V |
| BV_{EBO} | $I_E = 100\mu\text{A}$ | 5.0 | | | V |
| $V_{CE(SAT)}$ | $I_C = 0.1\text{mA}, I_B = 2.0\mu\text{A}$ | | | 0.2 | V |
| $V_{CE(SAT)}$ | $I_C = 1.0\text{mA}, I_B = 20\mu\text{A}$ | | | 0.2 | V |
| $V_{CE(SAT)}$ | $I_C = 10\text{mA}, I_B = 200\mu\text{A}$ | | | 0.2 | V |
| $V_{CE(SAT)}$ | $I_C = 50\text{mA}, I_B = 2.5\text{mA}$ | | | 0.2 | V |
| $V_{BE(SAT)}$ | $I_C = 50\text{mA}, I_B = 2.5\text{mA}$ | | | 0.92 | V |
| h_{FE} | $V_{CE} = 4.5\text{V}, I_C = 2.0\text{mA}$ | 100 | | 500 | |
| h_{FE} | $V_{CE} = 0.2\text{V}, I_C = 10\text{mA}$ | 60 | | | |
| h_{FE} | $V_{CE} = 0.2\text{V}, I_C = 50\text{mA}$ | 20 | | | |
| f_T | $V_{CE} = 1.0\text{V}, I_C = 10\text{mA}$ | | 200 | | MHz |
| C_{ib} | $V_{BE} = 0.5\text{V}, I_C = 0, f = 1.0\text{MHz}$ | | 10 | | pF |
| C_{ob} | $V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$ | | | 4.0 | pF |
| Q_{SB} | $I_C = 10\text{mA}, I_B = 0.32\text{mA}$ | | | 600 | pC |
| t_{on} | $V_{CC} = 6.0\text{V}, I_C = 10\text{mA}$ | | 4.0 | | ns |
| t_{off} | $V_{CC} = 6.0\text{V}, I_C = 10\text{mA}$ | | | 3.5 | μs |
| t_{on} | $V_{CC} = 6.0\text{V}, I_C = 10\text{mA},$ $I_{B1} = 0.32\text{mA}, I_{B2} = 54\mu\text{A}$ | | | 180 | ns |
| t_{off} | $V_{CC} = 6.0\text{V}, I_C = 10\text{mA},$ $I_{B1} = 0.32\text{mA}, I_{B2} = 54\mu\text{A}$ | | | 3.5 | μs |

JEDEC TO-92 CASE - MECHANICAL DIMENSIONS



All Dimensions in Inches (mm).