

BC182B

Bipolar Transistors

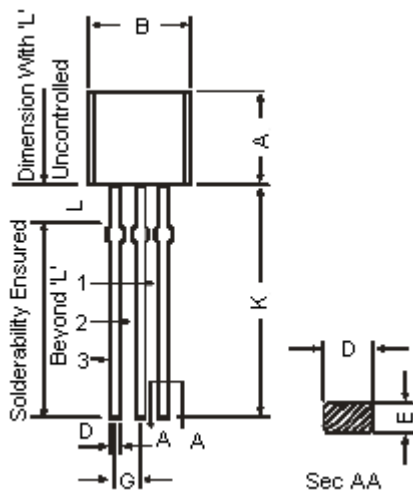


Description:

General Purpose NPN Silicon Planar Epitaxial Amplifier Transistors.

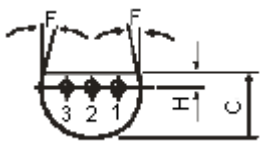


TO-92 Plastic Package



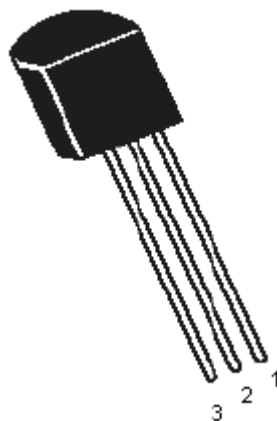
| Dimensions | Minimum | Maximum |
|------------|---------|---------|
| A | 4.32 | 5.33 |
| B | 4.45 | 5.20 |
| C | 3.18 | 4.19 |
| D | 0.41 | 0.55 |
| E | 0.35 | 0.50 |
| F | 5° | |
| G | 1.14 | 1.40 |
| H | | 1.53 |
| K | 12.70 | - |
| L | 1.982 | 2.082 |

Dimensions : Millimetres



Pin Configuration:

1. Emitter
2. Base
3. Collector



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless specified otherwise)

| Description | Symbol | Value | Unit |
|--|----------------|---------------|----------------------------|
| Collector-Emitter Voltage | V_{CEO} | 50 | V |
| Collector-Base Voltage | V_{CBO} | 60 | |
| Emitter-Base Voltage | V_{EBO} | 6.0 | |
| Collector Current Continuous | I_C | 100 | mA |
| Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above 25°C | P_D | 350 | mW |
| Power Dissipation at $T_c = 25^\circ\text{C}$ Derate Above 25°C | | 2.8 | $\text{mW}/^\circ\text{C}$ |
| Operating and Storage Junction Temperature Range | T_j, T_{stg} | - 55 to + 150 | $^\circ\text{C}$ |

Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless specified otherwise)

| Description | Symbol | Test Condition | Minimum | Typical | Maximum | Unit |
|--------------------------------------|---------------|--|---------|---------------------|-------------|------|
| Collector-Emitter Voltage | V_{CEO} | $I_C = 2\text{mA}, I_B = 0$ | 50 | - | - | V |
| Collector-Base Voltage | V_{CBO} | $I_C = 10\mu\text{A}, I_E = 0$ | 60 | - | - | |
| Emitter-Base Voltage | V_{EBO} | $I_E = 100\mu\text{A}, I_C = 0$ | 6.0 | - | - | |
| Collector-Cut off Current | I_{CBO} | $V_{CB} = 50\text{V}, I_E = 0$ | - | 0.2 | 15 | nA |
| Emitter-Cut off Current | I_{EB0} | $V_{EB} = 4\text{V}, I_C = 0$ | - | - | | |
| DC Current Gain | h_{FE} | $I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ | 40 | - | 500 | - |
| | | $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ | 120 | - | | - |
| | | $I_C = 100\text{mA}, V_{CE} = 5\text{V}$ | 80 | - | | - |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5.0\text{mA}^*$ | - | 0.07 0.2 | 0.25 0.6 | V |
| Base Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 100\text{mA}, I_B = 5\text{mA}^*$ | - | - | 1.2 | |
| Base Emitter On Voltage | $V_{BE(on)}$ | $I_C = 100\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2.0\text{mA}, V_{CE} = 5\text{V}$ $I_C = 100\text{mA}, V_{CE} = 5\text{V}^*$ | 0.55 | 0.5 0.62 0.83 | 0.7 | |

*Pulse Condition: $T_P = 300\text{s}$, Duty Cycle = 2.0%.

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Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless specified otherwise)

| Description | Symbol | Test Condition | Minimum | Typical | Maximum | Unit |
|--------------------------------|------------|---|-------------------|------------|-------------------|------|
| Dynamic Characteristics | | | | | | |
| Current Gain Bandwidth Product | f_T | $I_C = 0.5\text{mA}, V_{CE} = 3\text{V}$ $f = 100\text{MHz}$ $I_C = 10\text{mA}, V_{CE} = 5.0\text{V}$ $f = 100\text{MHz}$ | - 150 | 100 200 | - - | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10\text{V}, I_C = 0$ $f = 1\text{MHz}$ | - | - | 5.0 | pF |
| Input Capacitance | C_{ib} | $V_{BE} = 0.5\text{V}, I_C = 0$ $f = 1\text{MHz}$ | - | 8.0 | | |
| Small Signal Current Gain | $ h_{fe} $ | $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $f = 1\text{KHz}$ | 125 125 240 | - | 500 260 500 | - |
| Noise Figure | NF | $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $R_s = 2\text{k}\Omega, f = 1\text{kHz}$ $F = 200\text{Hz}$ | - | - | 10 | dB |

Specifications

| V_{CEO} (V) | V_{CBO} Maximum (V) | I_C (A) | h_{FE} Minimum at $I_C = 2\text{mA}$ | f_T Minimum (MHz) | P_{tot} (mW) | Package | Part Number |
|------------------|-----------------------------|--------------|--|---------------------------|-------------------|---------|-------------|
| 50 | 60 | 0.1 | 120 | 120 | 350 | TO-92 | BC182B |



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Notes:

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