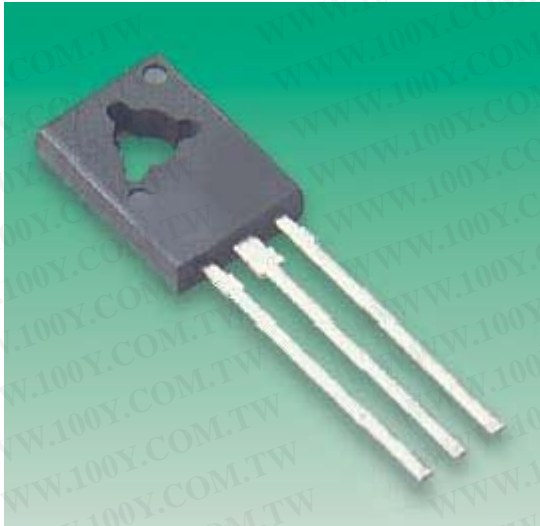


BD140

TO-126 PNP Transistors



Features:

- PNP Plastic Power Transistors.
- Medium Power Linear and Switching Applications.

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TO-126 Plastic Package

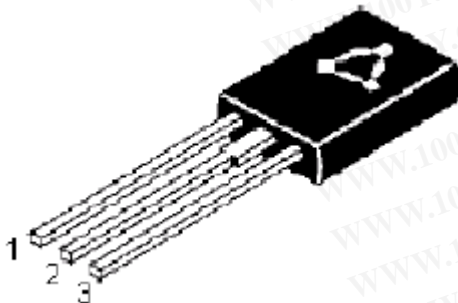


| Dimensions | Minimum | Maximum |
|------------|----------------|---------|
| A | 7.4 | 7.8 |
| B | 10.5 | 10.8 |
| C | 2.4 | 2.7 |
| D | 0.7 | 0.9 |
| E | 2.25 (Typical) | |
| F | 0.49 | 0.75 |
| G | 4.5 (Typical) | |
| L | 15.7 (Typical) | |
| M | 1.27 (Typical) | |
| N | 3.75 (Typical) | |
| P | 3.0 | 3.2 |
| S | 2.5 (Typical) | |

Dimensions : Millimetres

Pin Configuration:

1. Emitter
2. Collector
3. Base



BD140

TO-126 PNP Transistors



Absolute Maximum Ratings

| | Symbol | | BD140 | Unit |
|---|---------------|--------------------|-----------|------------------|
| Collector-Base Voltage (Open Emitter) | V_{CBO} | Maximum | 100 | V |
| Collector-Emitter Voltage (Open Base) | V_{CEO} | | 80 | |
| Collector Current | I_C | | 1.5 | A |
| Total Power Dissipation upto $T_C = 25^\circ\text{C}$ | P_{tot} | | 12.5 | W |
| Junction Temperature | T_j | | 150 | $^\circ\text{C}$ |
| Collector-Emitter Saturation Voltage $I_C = 0.5\text{A}, I_B = 0.05\text{A}$ | $V_{CE(Sat)}$ | | 0.5 | V |
| DC Current Gain $I_C = 0.15\text{A}; V_{CE} = 2\text{V}$ | h_{FE} | Minimum Maximum | 40 250 | - |

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

| | Symbol | | BD140 | Unit |
|---|---------------|-------------|------------------|---------------------------------|
| Collector-Base Voltage (Open Emitter) | V_{CBO} | Maximum | 100 | V |
| Collector-Emitter Voltage (Open Base) | V_{CEO} | | 80 | |
| Emitter-Base Voltage (Open Collector) | V_{EBO} | | 5.0 | |
| Collector Current | I_C | | 1.5 | A |
| Base Current | I_B | | 0.5 | |
| Total Power Dissipation up to $T_A = 25^\circ\text{C}$ Derate above 25°C | P_{tot} | | 1.25 10 | W $\text{mW}/^\circ\text{C}$ |
| Total Power Dissipation up to $T_C = 25^\circ\text{C}$ Derate above 25°C | | 12.5 100 | | |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ | |
| Storage Temperature | T_{stg} | - | -65 to +150 | |
| Thermal Resistance | | | | |
| From Junction to Case | $R_{th(j-c)}$ | - | 10 | $^\circ\text{C}/\text{W}$ |
| From Junction to Ambient | $R_{th(j-a)}$ | - | 100 | |

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BD140

TO-126 PNP Transistors



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

| | Symbol | | BD140 | Unit |
|--|---|--------------------|------------------|---------------|
| Collector Cut off Current $I_E = 0; V_{CB} = 30\text{V}$ $I_E = 0; V_{CB} = 30\text{V}; T_C = 125^{\circ}\text{C}$ | I_{CBO} | Maximum | 0.1 10 | μA |
| Emitter Cut off Current $I_C = 0; V_{EB} = 5\text{V}$ | I_{EBO} | | 10 | |
| Breakdown Voltages $I_C = 0.03\text{A}; I_B = 0$ $I_C = 1\text{mA}; I_E = 0$ $I_E = 1\text{mA}; I_C = 0$ | $V_{CEO}(\text{Sus})^*$ V_{CBO} V_{EBO} | Minimum | 80 100 5.0 | V |
| Saturation Voltage $I_C = 0.5\text{A}; I_B = 0.05\text{A}$ | $V_{CE}(\text{sat})^*$ | Maximum | 0.5 | V |
| Base-Emitter On Voltage $I_C = 0.5\text{A}; V_{CE} = 2\text{V}$ | $V_{BE}(\text{on})^*$ | | 1.0 | |
| DC Current Gain $I_C = 0.15\text{A}; V_{CE} = 2\text{V}^{**}$ | h_{FE}^* | Minimum Maximum | 40 250 | - |

** h_{FE} Classification:

| | | |
|-----|---------|-----|
| -6 | Minimum | 40 |
| | Maximum | 100 |
| -10 | Minimum | 63 |
| | Maximum | 160 |
| -16 | Minimum | 100 |
| | Maximum | 250 |
| -25 | Minimum | 160 |
| | Maximum | 400 |

* Pulse Test: Pulse Width = $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

Specifications

| I_C (av) Maximum (A) | V_{CEO} Maximum (V) | h_{FE} Minimum at $I_C = 0.15\text{mA}$ | P_{tot} at 25°C (mW) | Plastic Package | Type | Part Number |
|------------------------------|-----------------------------|---|--|--------------------|------|-------------|
| 1.5 | 80 | 40 | 12.5 | TO-126 | PNP | BD140 |

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