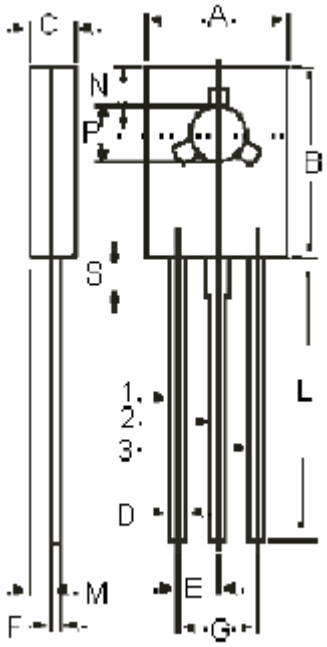
# BD140

## TO-126 PNP Transistors

### Features:

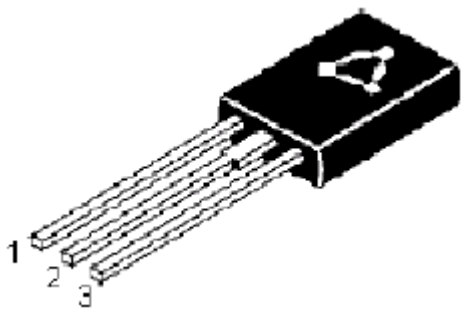
- PNP Plastic Power Transistors.
- Medium Power Linear and Switching Applications.

### 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

## 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°C | $P_{tot}$ | | 12.5 | W |
| Junction Temperature | $T_j$ | | 150 | °C |
| Collector-Emitter Saturation Voltage<br>$I_C$ = 0.5A, $I_B$ = 0.05A | $V_{CE\ (Sat)}$ | | 0.5 | V |
| DC Current Gain<br>$I_C$ = 0.15A; $V_{CE}$ = 2V | $h_{FE}$ | Minimum<br>Maximum | 40<br>250 | - |

## Ratings (at $T_a$ = 25°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°C<br>Derate above 25°C | $P_{tot}$ | | 1.25<br>10 | W<br>mW/°C |
| Total Power Dissipation up to $T_C$ = 25°C<br>Derate above 25°C | | | 12.5<br>100 | |
| Junction Temperature | $T_j$ | | 150 | °C |
| Storage Temperature | $T_{stg}$ | - | -65 to +150 | |
| **Thermal Resistance** | | | | |
| From Junction to Case | $R_{th\ (j-c)}$ | - | 10 | °C/W |
| From Junction to Ambient | $R_{th\ (j-a)}$ | - | 100 | |

# BD140

## TO-126 PNP Transistors

### Characteristics ($T_{amb}$ = 25°C unless otherwise specified)

| - | Symbol | - | BD140 | Unit |
|---|---|---|---|---|
| Collector Cut off Current<br>$I_E$ = 0; $V_{CB}$ = 30V<br>$I_E$ = 0; $V_{CB}$ = 30V; $T_C$ = 125°C | $I_{CBO}$ | Maximum | 0.1<br>10 | µA |
| Emitter Cut off Current<br>$I_C$ = 0; $V_{EB}$ = 5V | $I_{EBO}$ | | 10 | |
| Breakdown Voltages<br>$I_C$ = 0.03A; $I_B$ = 0<br>$I_C$ = 1mA; $I_E$ = 0<br>$I_E$ = 1mA; $I_C$ = 0 | $V_{CEO\ (Sus)}$*<br>$V_{CBO}$<br>$V_{EBO}$ | Minimum | 80<br>100<br>5.0 | V |
| Saturation Voltage<br>$I_C$ = 0.5A; $I_B$ = 0.05A | $V_{CE\ (sat)}$* | Maximum | 0.5 | |
| Base-Emitter On Voltage<br>$I_C$ = 0.5A; $V_{CE}$ = 2V | $V_{BE\ (on)}$* | | 1.0 | |
| DC Current Gain<br>$I_C$ = 0.15A; $V_{CE}$ = 2V** | $h_{FE}$* | Minimum<br>Maximum | 40<br>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 = ≤300µs, Duty Cycle ≤2%.

### Specifications

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

# BD140

## TO-126 PNP Transistors

**Notes:**

### International Sales Offices:

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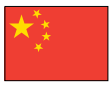

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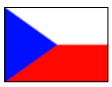

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