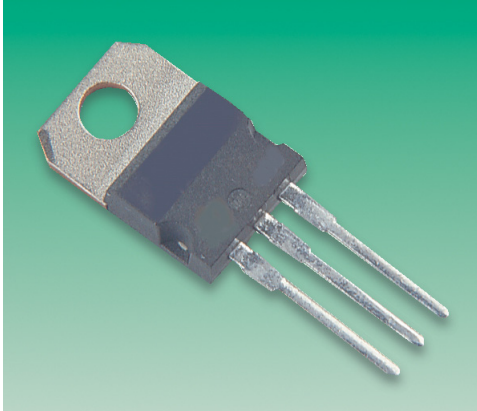


BD241C & BD242C

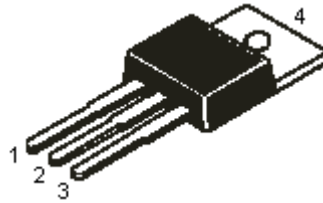
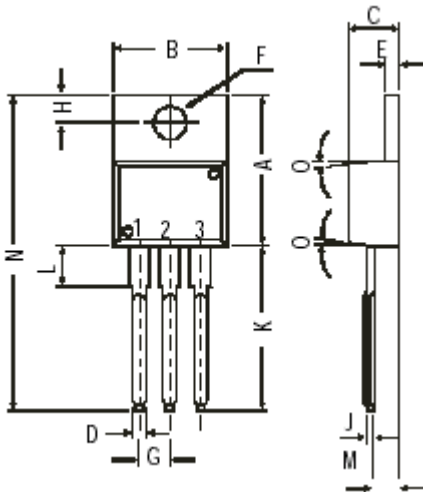
General Purpose Amplifiers



Features:

- NPN/PNP Plastic Power Transistors.
- General Purpose Amplifier and Switching Applications.

BD241C NPN
BD242C PNP
TO-220 Plastic Package



Pin Configuration

1. Base
2. Collector
3. Emitter
4. Collector

| Dimensions | Minimum | Maximum |
|------------|---------|---------|
| A | 14.42 | 16.51 |
| B | 9.63 | 10.67 |
| C | 3.56 | 4.83 |
| D | - | 0.90 |
| E | 1.15 | 1.40 |
| F | 3.75 | 3.88 |
| G | 2.29 | 2.79 |
| H | 2.54 | 3.43 |
| J | - | 0.56 |
| K | 12.70 | 14.73 |
| L | 2.80 | 4.07 |
| M | 2.03 | 2.92 |
| N | - | 31.24 |
| O | 7° | |

Dimensions : Millimetres



BD241C & BD242C

General Purpose Amplifiers



Absolute Maximum Ratings

| Limiting Values | Symbol | | BD241C | BD242C | Unit |
|--|---------------|---------|--------|--------|------------------|
| Collector-Emitter Voltage ($V_{BE} = 0$) | V_{CES} | maximum | 115 | 115 | V |
| Collector-Emitter Voltage (Open Base) | V_{CEO} | | 100 | | |
| Collector Current | I_C | | 5.0 | 5.0 | A |
| Total Power Dissipation upto $T_C = 25^\circ\text{C}$ | P_{tot} | | 40 | 40 | W |
| Junction Temperature | T_j | | 150 | | $^\circ\text{C}$ |
| Collector-Emitter Saturation Voltage $I_C = 3\text{A}; I_B = 0.6\text{A}$ | $V_{CE(sat)}$ | | 1.2 | 1.2 | V |
| DC Current Gain $I_C = 1\text{A}; V_{CE} = 4\text{V}$ | h_{FE} | minimum | 25 | 25 | - |

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

| Limiting Values | Symbol | | BD241C | BD242C | Unit |
|--|---------------|---------|-------------|------------|--------------------------------|
| Collector-Emitter Voltage ($V_{BE} = 0$) | V_{CES} | maximum | 115 | 115 | V |
| Collector-Emitter Voltage (Open Base) | V_{CEO} | | 100 | 100 | |
| Collector-Emitter Voltage ($R_{BE} = 100\Omega$) | V_{CER} | | 115 | 115 | |
| Emitter-Base Voltage (Open Collector) | V_{EBO} | | 5.0 | 5.0 | A |
| Collector Current | I_C | | 3.0 | 3.0 | |
| Collector Current (Peak Value) | | | 5.0 | 5.0 | |
| Base Current | I_B | | 1.0 | 1.0 | |
| Total Power Dissipation upto $T_C = 25^\circ\text{C}$ Derate Above 25°C | P_{tot} | | 40 0.32 | 40 0.32 | W $\text{W}/^\circ\text{C}$ |
| Junction Temperature | T_j | | 150 | | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | - | -65 to +150 | | |
| Thermal Resistance | | | | | |
| From Junction to Case | $R_{th(j-c)}$ | - | 3.125 | 3.125 | $^\circ\text{C}/\text{W}$ |
| From Junction to Ambient | $R_{th(j-a)}$ | - | 62.5 | 62.5 | |

BD241C & BD242C

General Purpose Amplifiers



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

| Limiting Values | Symbol | | BD241C BD242C | Unit |
|---|--|---------|-------------------|------|
| Collector Cutoff Current $I_B = 0; V_{CE} = 60\text{V}$ $V_{BE} = 0; V_{CE} = V_{CEO}$ | I_{CEO} I_{CES} | maximum | 0.3 | mA |
| Emitter Cutoff Current $I_C = 0; V_{EB} = 5\text{V}$ | I_{EBO} | | 1.0 | |
| Breakdown Voltages $I_C = 30\text{mA}; I_B = 0$ $I_C = 1\text{mA}; V_{BE} = 0$ $I_E = 1\text{mA}; I_C = 0$ | $V_{CEO(sus)}^*$ V_{CES} V_{EBO} | minimum | 100 115 5.0 | V |
| Saturation Voltage $I_C = 3\text{A}; I_B = 0.6\text{A}$ | $V_{CE(sat)}^*$ | maximum | 1.2 | |
| Base Emitter on Voltage $I_C = 3\text{A}; V_{CE} = 4\text{V}$ | $V_{BE(on)}^*$ | | 1.8 | |
| DC Current Gain $I_C = 1\text{A}; V_{CE} = 4\text{V}$ | h_{FE}^* | minimum | 25 | - |
| Transition Frequency $I_C = 0.5\text{A}; V_{CE} = 10\text{V}; f = 1\text{MHz}$ | $f_T(1)$ | | 3 | MHz |
| Small Signal Current Gain $I_C = 0.5\text{A}; V_{CE} = 10\text{V}; f = 1\text{KHz}$ | h_{fe} | | 20 | - |

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

$$(1) f_T = \left| h_{fe} \right| \cdot f_{test}$$

Part Number

| $I_{C(av)}$ maximum (A) | V_{CEO} maximum (V) | h_{FE} minimum at $I_C = 1\text{A}$ | P_{tot} at 25°C (W) | Type | Package | Part Number |
|-------------------------------|-----------------------------|---|--|------|---------|-------------|
| 5 | 100 | 25 | 40 | NPN | TO-220 | BD241C |

BD241C & BD242C

General Purpose Amplifiers



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