



BD241CFP

NPN SILICON POWER TRANSISTOR

- FULLY MOLDED ISOLATED PACKAGE
- 2000 V DC ISOLATION (U.L. COMPLIANT)

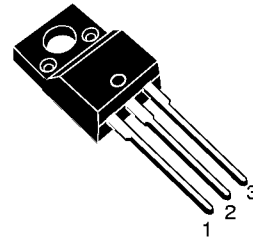
APPLICATIONS

- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIERS

DESCRIPTION

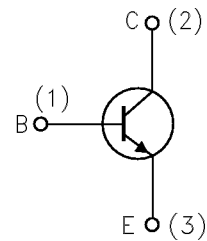
The BD241CFP is silicon epitaxial-base NPN transistor mounted in TO-220FP fully molded isolated package.

It is intended for power linear and switching applications.



TO-220FP

INTERNAL SCHEMATIC DIAGRAM



SC06960

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|--|------------|------------|
| V_{CER} | Collector-Base Voltage ($R_{BE} = 100 \Omega$) | 115 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 100 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | 5 | V |
| I_C | Collector Current | 3 | A |
| I_{CM} | Collector Peak Current | 5 | A |
| I_B | Base Current | 1 | A |
| P_{tot} | Total Dissipation at $T_c \leq 25^\circ C$ | 24 | W |
| T_{stg} | Storage Temperature | -65 to 150 | $^\circ C$ |
| T_j | Max. Operating Junction Temperature | 150 | $^\circ C$ |

BD241CFP

THERMAL DATA

| | | | | |
|----------------|----------------------------------|-----|-----|------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | Max | 5.3 | °C/W |
|----------------|----------------------------------|-----|-----|------|

ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|--|--|----------|------|------|------|
| I_{CEO} | Collector Cut-off Current ($I_B = 0$) | $V_{CE} = 60\text{ V}$ | | | 0.3 | mA |
| I_{CES} | Collector Cut-off Current ($V_{BE} = 0$) | $V_{CE} = 100\text{ V}$ | | | 0.2 | mA |
| I_{EBO} | Emitter Cut-off Current ($I_C = 0$) | $V_{EB} = 5\text{ V}$ | | | 1 | mA |
| $V_{CEO(sus)*}$ | Collector-Emitter Sustaining Voltage ($I_B = 0$) | $I_C = 30\text{ mA}$ | 100 | | | V |
| $V_{CE(sat)*}$ | Collector-Emitter Saturation Voltage | $I_C = 3\text{ A}$ $I_B = 0.6\text{ A}$ | | | 1.2 | V |
| $V_{BE(ON)*}$ | Base-Emitter Voltage | $I_C = 3\text{ A}$ $V_{CE} = 4\text{ V}$ | | | 1.8 | V |
| h_{FE*} | DC Current Gain | $I_C = 1\text{ A}$ $V_{CE} = 4\text{ V}$ $I_C = 3\text{ A}$ $V_{CE} = 4\text{ V}$ | 25 10 | | | |

* Pulsed: Pulse duration = 300 μ s, duty cycle $\leq 2\%$ ive.

TO-220FP MECHANICAL DATA

| DIM. | mm | | | Inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 4.4 | | 4.6 | 0.173 | | 0.181 |
| B | 2.5 | | 2.7 | 0.098 | | 0.106 |
| D | 2.5 | | 2.75 | 0.098 | | 0.108 |
| E | 0.45 | | 0.7 | 0.017 | | 0.027 |
| F | 0.75 | | 1 | 0.030 | | 0.039 |
| F1 | 1.15 | | 1.7 | 0.045 | | 0.067 |
| F2 | 1.15 | | 1.7 | 0.045 | | 0.067 |
| G | 4.95 | | 5.2 | 0.195 | | 0.204 |
| G1 | 2.4 | | 2.7 | 0.094 | | 0.106 |
| H | 10 | | 10.4 | 0.393 | | 0.409 |
| L2 | | 16 | | | 0.630 | |
| L3 | 28.6 | | 30.6 | 1.126 | | 1.204 |
| L4 | 9.8 | | 10.6 | 0.385 | | 0.417 |
| L6 | 15.9 | | 16.4 | 0.626 | | 0.645 |
| L7 | 9 | | 9.3 | 0.354 | | 0.366 |
| Ø | 3 | | 3.2 | 0.118 | | 0.126 |

