



# BD243B/BD243C BD244B/BD244C

## COMPLEMENTARY SILICON POWER TRANSISTORS

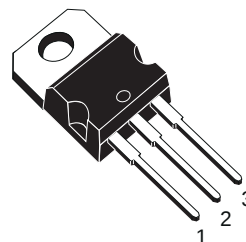
- STMicroelectronics PREFERRED SALESTYPES

### DESCRIPTION

The BD243B and BD243C are silicon Epitaxial-Base NPN transistors mounted in Jedec TO-220 plastic package.

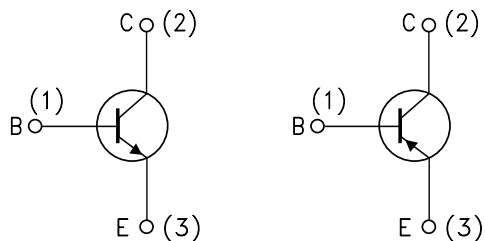
They are intended for use in medium power linear and switching applications.

The complementary PNP types are BD244B and BD244C respectively.



TO-220

### INTERNAL SCHEMATIC DIAGRAM



SC06960

SC08810

### ABSOLUTE MAXIMUM RATINGS

| Symbol           | Parameter                                      | Value      |        | Unit |
|------------------|------------------------------------------------|------------|--------|------|
|                  |                                                | NPN        | BD243B |      |
|                  | PNP                                            | BD244B     | BD244C |      |
| V <sub>CBO</sub> | Collector-Base Voltage (I <sub>E</sub> = 0)    | 80         | 100    | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage (I <sub>B</sub> = 0) | 80         | 100    | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage (I <sub>C</sub> = 0)      | 5          |        | V    |
| I <sub>C</sub>   | Collector Current                              | 6          |        | A    |
| I <sub>CM</sub>  | Collector Peak Current                         | 10         |        | A    |
| I <sub>B</sub>   | Base Current                                   | 2          |        | A    |
| P <sub>tot</sub> | Total Dissipation at T <sub>c</sub> ≤ 25 °C    | 65         |        | W    |
| T <sub>stg</sub> | Storage Temperature                            | -65 to 150 |        | °C   |
| T <sub>j</sub>   | Max. Operating Junction Temperature            | 150        |        | °C   |

For PNP types voltage and current values are negative.

BD243B / BD243C / BD244B / BD244C

THERMAL DATA

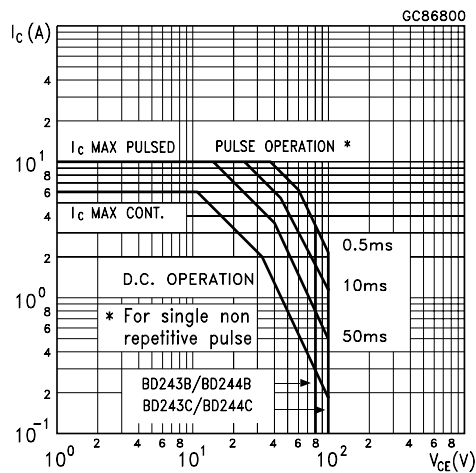
|                       |                                     |     |      |      |
|-----------------------|-------------------------------------|-----|------|------|
| R <sub>thj-case</sub> | Thermal Resistance Junction-case    | Max | 1.92 | °C/W |
| R <sub>thj-amb</sub>  | Thermal Resistance Junction-ambient | Max | 62.5 | °C/W |

ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| Symbol                 | Parameter                                                 | Test Conditions                                                                                                              | Min.      | Typ. | Max. | Unit   |
|------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------|------|------|--------|
| I <sub>CES</sub>       | Collector Cut-off Current (V <sub>BE</sub> = 0)           | V <sub>CE</sub> = rated V <sub>CEO</sub>                                                                                     |           |      | 0.4  | mA     |
| I <sub>CEO</sub>       | Collector Cut-off Current (I <sub>B</sub> = 0)            | V <sub>CE</sub> = 60 V                                                                                                       |           |      | 0.7  | mA     |
| I <sub>EBO</sub>       | Emitter Cut-off Current (I <sub>C</sub> = 0)              | V <sub>EB</sub> = 5 V                                                                                                        |           |      | 1    | mA     |
| V <sub>CEO(sus)*</sub> | Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0) | I <sub>C</sub> = 30 mA<br>for <b>BD243B/BD244B</b><br>for <b>BD243C/BD244C</b>                                               | 80<br>100 |      |      | V<br>V |
| V <sub>CE(sat)*</sub>  | Collector-Emitter Saturation Voltage                      | I <sub>C</sub> = 6 A    I <sub>B</sub> = 1 A                                                                                 |           |      | 1.5  | V      |
| V <sub>BE*</sub>       | Base-Emitter Voltage                                      | I <sub>C</sub> = 6 A    V <sub>CE</sub> = 4 V                                                                                |           |      | 2    | V      |
| h <sub>FE*</sub>       | DC Current Gain                                           | I <sub>C</sub> = 0.3 A    V <sub>CE</sub> = 4 V<br>I <sub>C</sub> = 3 A    V <sub>CE</sub> = 4 V                             | 30<br>15  |      |      |        |
| h <sub>fe</sub>        | Small Signal Current Gain                                 | I <sub>C</sub> = 0.5 A    V <sub>CE</sub> = 10 V    f = 1MHz<br>I <sub>C</sub> = 0.5 A    V <sub>CE</sub> = 10 V    f = 1KHz | 3<br>20   |      |      |        |

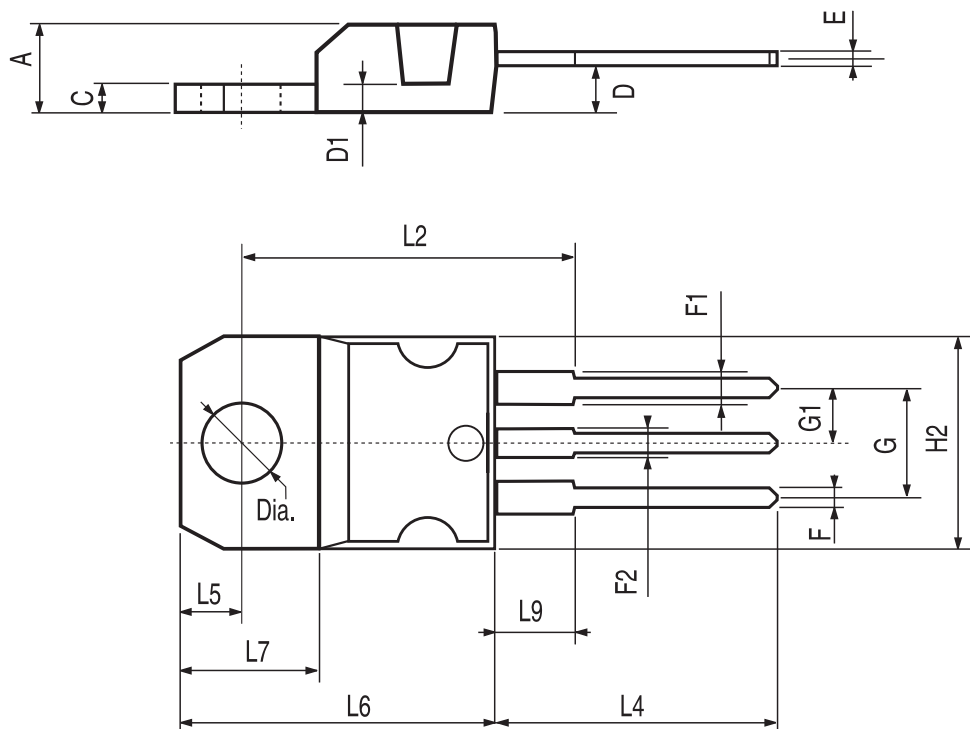
\* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %  
For PNP types voltage and current values are negative.

Safe Operating Area



## TO-220 MECHANICAL DATA

| DIM. | mm    |      |       | inch  |       |       |
|------|-------|------|-------|-------|-------|-------|
|      | MIN.  | TYP. | MAX.  | MIN.  | TYP.  | MAX.  |
| A    | 4.40  |      | 4.60  | 0.173 |       | 0.181 |
| C    | 1.23  |      | 1.32  | 0.048 |       | 0.051 |
| D    | 2.40  |      | 2.72  | 0.094 |       | 0.107 |
| D1   |       | 1.27 |       |       | 0.050 |       |
| E    | 0.49  |      | 0.70  | 0.019 |       | 0.027 |
| F    | 0.61  |      | 0.88  | 0.024 |       | 0.034 |
| F1   | 1.14  |      | 1.70  | 0.044 |       | 0.067 |
| F2   | 1.14  |      | 1.70  | 0.044 |       | 0.067 |
| G    | 4.95  |      | 5.15  | 0.194 |       | 0.203 |
| G1   | 2.4   |      | 2.7   | 0.094 |       | 0.106 |
| H2   | 10.0  |      | 10.40 | 0.393 |       | 0.409 |
| L2   |       | 16.4 |       |       | 0.645 |       |
| L4   | 13.0  |      | 14.0  | 0.511 |       | 0.551 |
| L5   | 2.65  |      | 2.95  | 0.104 |       | 0.116 |
| L6   | 15.25 |      | 15.75 | 0.600 |       | 0.620 |
| L7   | 6.2   |      | 6.6   | 0.244 |       | 0.260 |
| L9   | 3.5   |      | 3.93  | 0.137 |       | 0.154 |
| DIA. | 3.75  |      | 3.85  | 0.147 |       | 0.151 |



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