# Silicon NPN Power Transistors BD543/A/B/C

## DESCRIPTION

- With TO-220C package
- Complement to type BD544/A/B/C
- 8 A continuous collector current
- 10 A peak Collector current

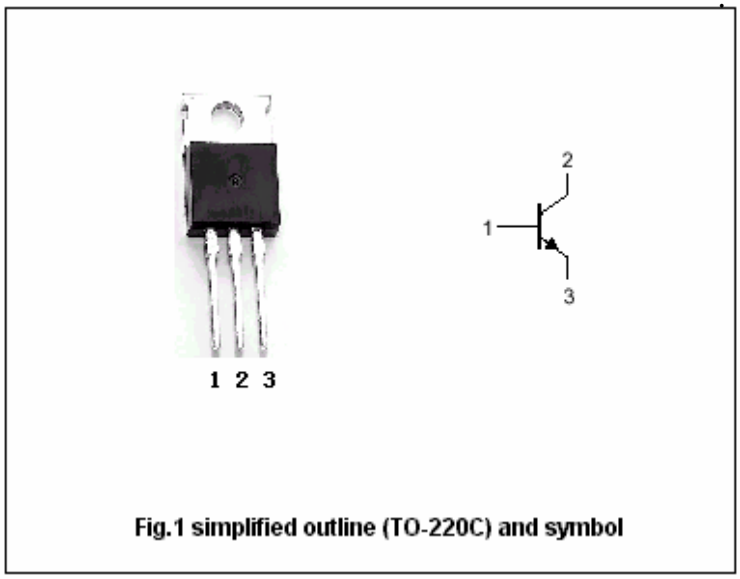


Fig.1 simplified outline (TO-220C) and symbol

**PINNING**

| PIN | DESCRIPTION |
|---|---|
| 1 | Base |
| 2 | Collector;connected to mounting base |
| 3 | Emitter |

**Absolute maximum ratings (Ta=25℃)**

| SYMBOL | PARAMETER | | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | BD543 | Open emitter | 40 | V |
| | | BD543A | | 60 | |
| | | BD543B | | 80 | |
| | | BD543C | | 100 | |
| $V_{CEO}$ | Collector-emitter voltage | BD543 | Open base | 40 | V |
| | | BD543A | | 60 | |
| | | BD543B | | 80 | |
| | | BD543C | | 100 | |
| $V_{EBO}$ | Emitter-base voltage | | Open collector | 5 | V |
| $I_C$ | Collector current | | | 8 | A |
| $I_{CM}$ | Collector current-peak | | | 10 | A |
| $P_C$ | Collector power dissipation | | $T_C$=25℃ | 70 | W |
| $T_j$ | Junction temperature | | | -65~150 | ℃ |
| $T_{stg}$ | Storage temperature | | | -65~150 | ℃ |

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## CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | BD543 | $I_C$=30mA ;$I_B$=0 | 40 | | | V |
| | | BD543A | | 60 | | | |
| | | BD543B | | 80 | | | |
| | | BD543C | | 100 | | | |
| $V_{CEsat-1}$ | Collector-emitter saturation voltage | | $I_C$=3A ;$I_B$=0.3A | | | 0.5 | V |
| $V_{CEsat-2}$ | Collector-emitter saturation voltage | | $I_C$=5A ;$I_B$=1A | | | 0.5 | V |
| $V_{CEsat-3}$ | Collector-emitter saturation voltage | | $I_C$=8A ;$I_B$=1.6A | | | 1 | V |
| $V_{BE}$ | Base-emitter on voltage | | $I_C$=5A ; $V_{CE}$=4V | | | 1.6 | V |
| $I_{CEO}$ | Collector cut-off current | BD543/543A | $V_{CE}$=30V;$I_B$=0 | | | 0.7 | mA |
| | | BD543B/543C | $V_{CE}$=60V;$I_B$=0 | | | | |
| $I_{EBO}$ | Emitter cut-off current | | $V_{EB}$=5V; $I_C$=0 | | | 1 | mA |
| $h_{FE-1}$ | DC current gain | | $I_C$=1A ; $V_{CE}$=4V | 60 | | | |
| $h_{FE-2}$ | DC current gain | | $I_C$=3A ; $V_{CE}$=4V | 40 | | | |
| $h_{FE-3}$ | DC current gain | | $I_C$=5A ; $V_{CE}$=4V | 15 | | | |

Switching times

| | | | | | | |
|---|---|---|---|---|---|---|
| $t_{on}$ | Turn-on time | $I_C$=6A; $I_{B1}$=-$I_{B2}$=0.6A $R_L$=5Ω | | 0.6 | | μs |
| $t_{off}$ | Turn-off time | | | 1.0 | | μs |

**PACKAGE OUTLINE**

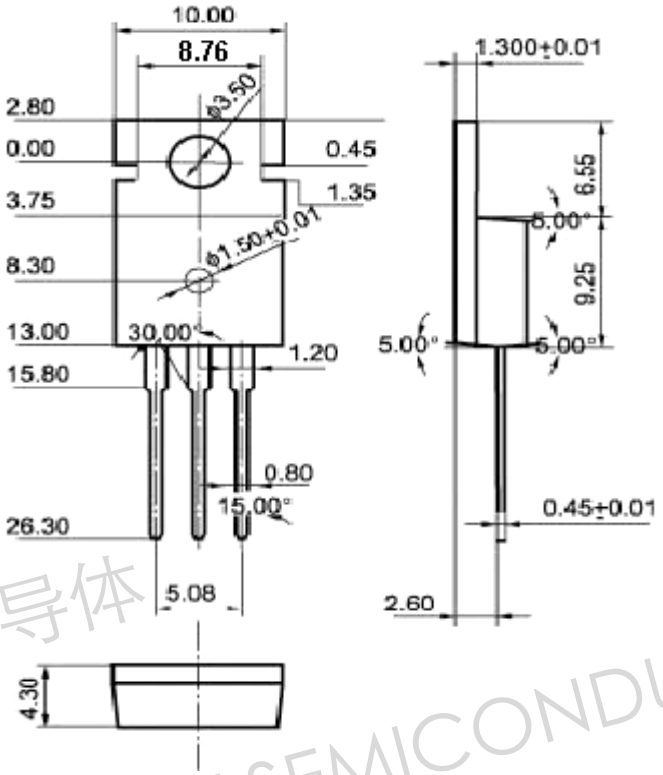




**Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)**