

BD234/236/238

Medium Power Linear and Switching Applications

- Complement to BD 233/235/237 respectively



PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage | | |
| | : BD234 | - 45 | V |
| | : BD236 | - 60 | V |
| | : BD238 | - 100 | V |
| V_{CEO} | Collector-Emitter Voltage | | |
| | : BD234 | - 45 | V |
| | : BD236 | - 60 | V |
| | : BD238 | - 80 | V |
| V_{CER} | Collector-Emitter Voltage | | |
| | : BD234 | - 45 | V |
| | : BD236 | - 60 | V |
| | : BD238 | - 100 | V |
| V_{EBO} | Emitter-Base Voltage | - 5 | V |
| I_C | Collector Current (DC) | - 2 | A |
| I_{CP} | *Collector Current (Pulse) | - 6 | A |
| P_C | Collector Dissipation ($T_C=25^\circ\text{C}$) | 25 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 65 ~ 150 | $^\circ\text{C}$ |

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|----------------|--|---|----------|------|-------|---------------|
| $V_{CEO(sus)}$ | * Collector-Emitter Sustaining Voltage | | | | | |
| | : BD234 | $I_C = - 100\text{mA}, I_B = 0$ | - 45 | | | V |
| | : BD236 | | - 60 | | | V |
| | : BD238 | | - 80 | | | V |
| I_{CBO} | Collector Cut-off Current | | | | | |
| | : BD234 | $V_{CB} = - 45\text{V}, I_E = 0$ | | | - 100 | μA |
| | : BD236 | $V_{CB} = - 60\text{V}, I_E = 0$ | | | - 100 | μA |
| | : BD238 | $V_{CB} = - 100\text{V}, I_E = 0$ | | | - 100 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = - 5\text{V}, I_C = 0$ | | | - 1 | mA |
| h_{FE} | * DC Current Gain | $V_{CE} = - 2\text{V}, I_C = - 150\text{mA}$ $V_{CE} = - 2\text{V}, I_C = - 1\text{A}$ | 40 25 | | | |
| $V_{CE(sat)}$ | * Collector-Emitter Saturation Voltage | $I_C = - 1\text{A}, I_B = - 0.1\text{A}$ | | | - 0.6 | V |
| $V_{BE(on)}$ | * Base-Emitter ON Voltage | $V_{CE} = - 2\text{V}, I_C = - 1\text{A}$ | | | - 1.3 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = - 10\text{V}, I_C = - 250\text{mA}$ | 3 | | | MHz |

* Pulse Test: PW=300 μs , duty Cycle=1.5% Pulsed

Typical Characteristics

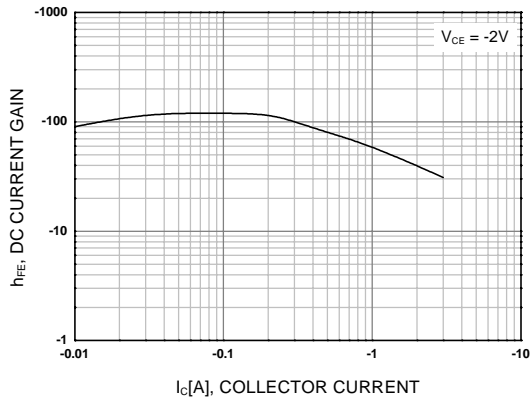


Figure 1. DC current Gain

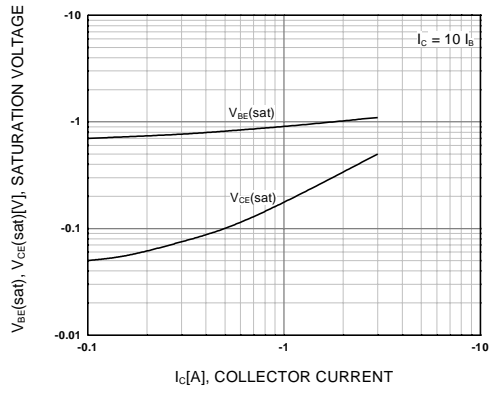


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

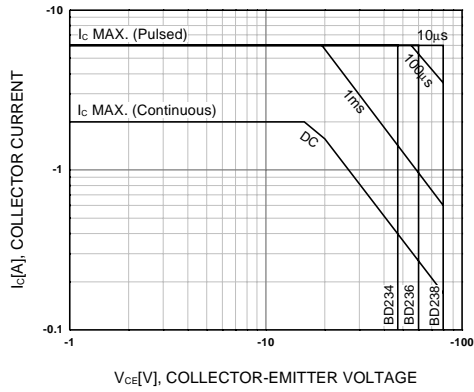


Figure 3. Safe Operating Area

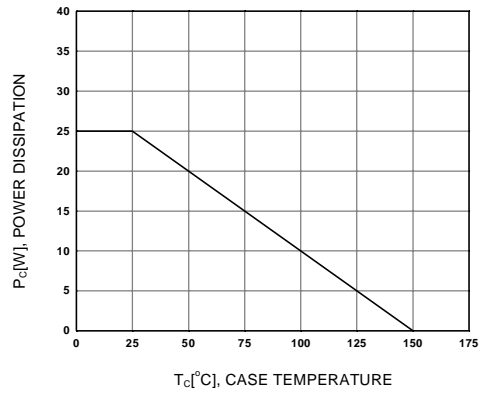


Figure 4. Power Derating

Package Dimensions

BD234/236/238

TO-126



Dimensions in Millimeters

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| CROSSVOLT™ | POP™ | UHC™ |
| E ² CMOS™ | PowerTrench® | VCX™ |
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