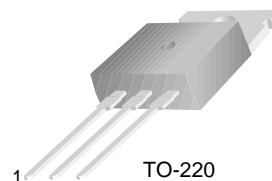


BDX54/A/B/C

Hammer Drivers, Audio Amplifiers Applications Power Liner and Switching Applications

- Power Darlington TR
- Complement to BDX53, BDX53A, BDX53B and BDX53C respectively



TO-220

1.Base 2.Collector 3.Emitter

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 : BDX54 | - 45 | V |
| | : BDX54A | - 60 | V |
| | : BDX54B | - 80 | V |
| | : BDX54C | - 100 | V |
| V_{CEO} | Collector-Emitter Voltage : BDX54 | - 45 | V |
| | : BDX54A | - 60 | V |
| | : BDX54B | - 80 | V |
| | : BDX54C | - 100 | V |
| V_{EBO} | Emitter-Base Voltage | - 5 | V |
| I_C | Collector Current (DC) | - 8 | A |
| I_{CP} | *Collector Current (Pulse) | - 12 | A |
| I_B | Base Current | - 0.2 | A |
| P_C | Collector Dissipation ($T_C=25^\circ\text{C}$) | 60 | 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 : BDX54 | $I_C = - 100\text{mA}, I_B = 0$ | - 45 | | | V |
| | : BDX54A | | - 60 | | | V |
| | : BDX54B | | - 80 | | | V |
| | : BDX54C | | - 100 | | | V |
| I_{CBO} | Collector Cut-off Current : BDX54 | $V_{CB} = - 45\text{V}, I_E = 0$ | | | - 200 | μA |
| | : BDX54A | $V_{CB} = - 60\text{V}, I_E = 0$ | | | - 200 | μA |
| | : BDX54B | $V_{CB} = - 80\text{V}, I_E = 0$ | | | - 200 | μA |
| | : BDX54C | $V_{CB} = - 100\text{V}, I_E = 0$ | | | - 200 | μA |
| I_{CEO} | Collector Cut-off Current : BDX54 | $V_{CE} = - 22\text{V}, I_B = 0$ | | | - 500 | μA |
| | : BDX54A | $V_{CE} = - 30\text{V}, I_B = 0$ | | | - 500 | μA |
| | : BDX54B | $V_{CE} = - 40\text{V}, I_B = 0$ | | | - 500 | μA |
| | : BDX54C | $V_{CE} = - 50\text{V}, I_B = 0$ | | | - 500 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = - 5\text{V}, I_C = 0$ | | | - 2 | mA |
| h_{FE} | * DC Current Gain | $V_{CE} = - 3\text{V}, I_C = - 3\text{A}$ | 750 | | | |
| $V_{CE(sat)}$ | * Collector-Emitter Saturation Voltage | $I_C = - 3\text{A}, I_B = - 12\text{mA}$ | | | - 2 | V |
| $V_{BE(sat)}$ | * Base-Emitter Saturation Voltage | $I_C = - 3\text{A}, I_B = - 12\text{mA}$ | | | - 2.5 | V |
| V_F | * Parallel Diode Forward Voltage | $I_F = - 3\text{A}$ | | - 1.8 | - 2.5 | V |
| | | $I_F = - 8\text{A}$ | | - 2.5 | | V |

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

Typical Characteristics

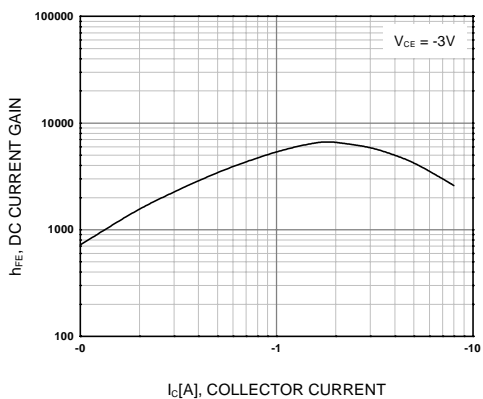


Figure 1. DC current Gain

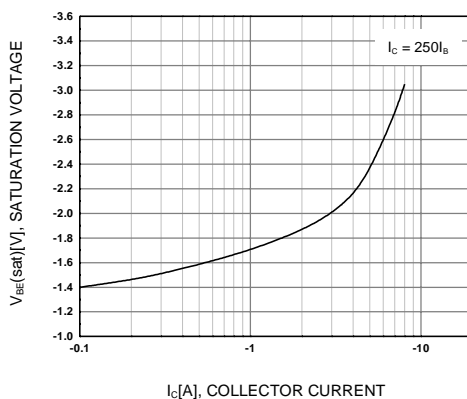


Figure 2. Base-Emitter Saturation Voltage

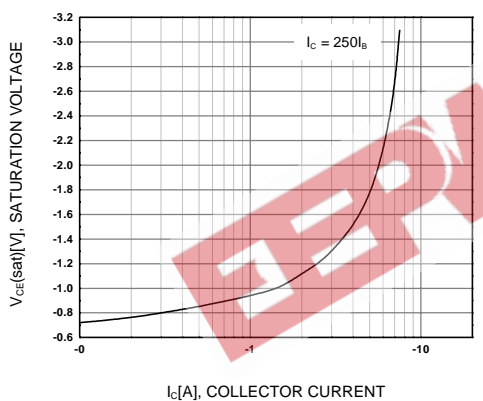


Figure 3. Collector-Emitter Saturation Voltage

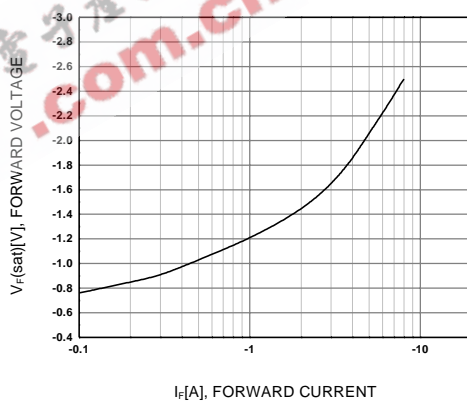


Figure 4. Damper Diode Forward Voltage

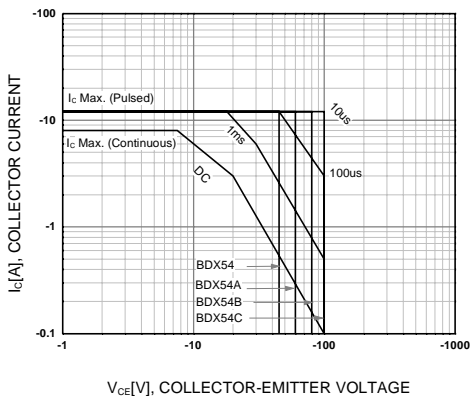


Figure 5. Safe Operating Area

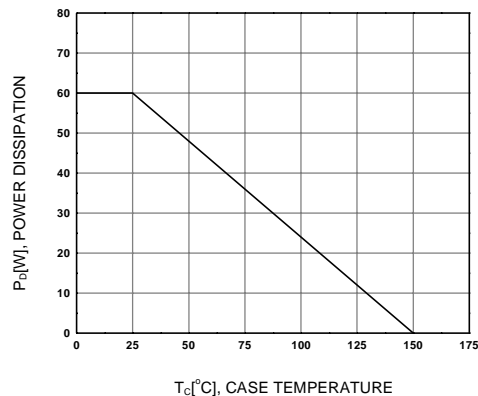
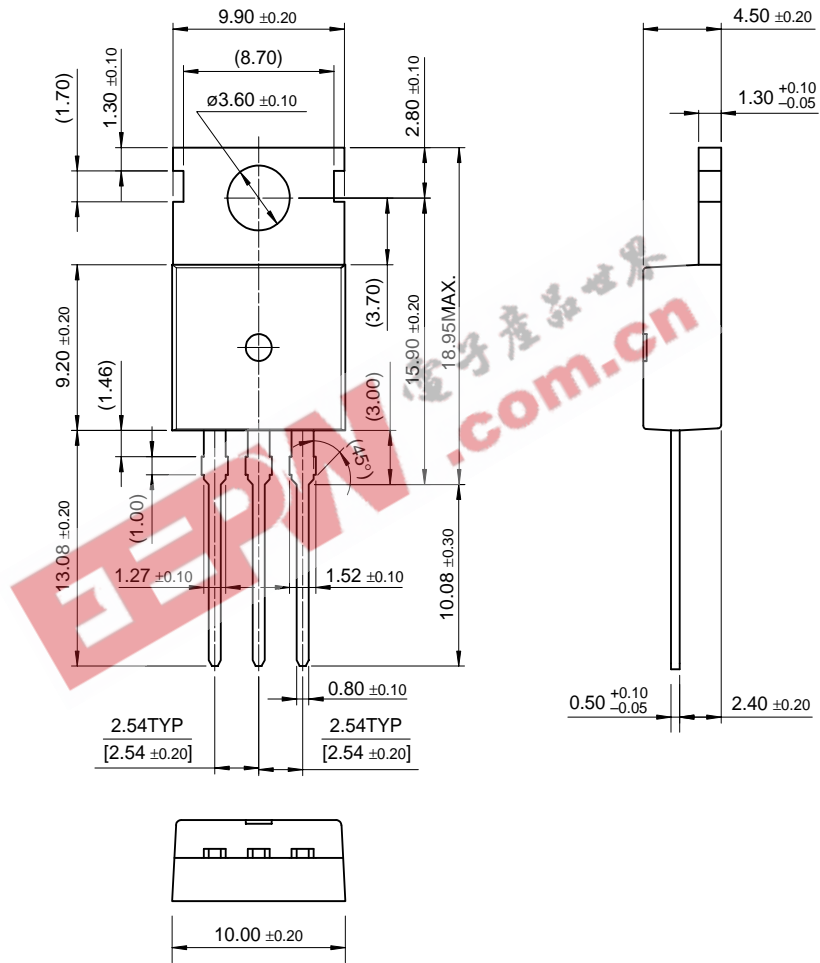


Figure 6. Power Derating

Package Demensions

BDX54/A/B/C

TO-220



Dimensions in Millimeters

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