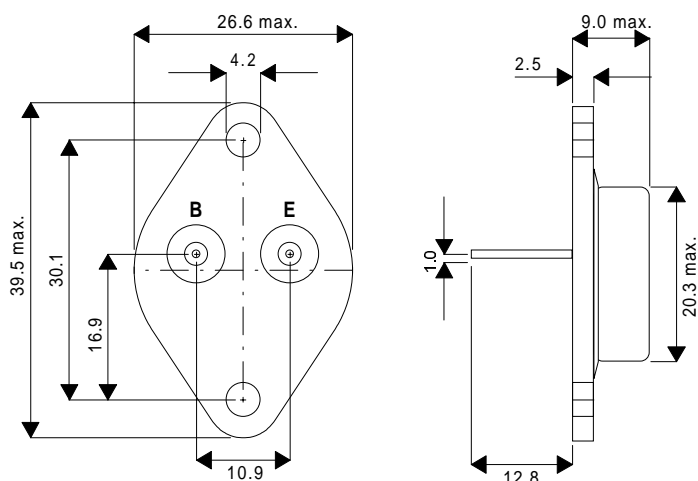


MECHANICAL DATA
 Dimensions in mm

**NPN EPITAXIAL BASE
 DARLINGTON POWER
 TRANSISTOR**



NPN epitaxial base transistors in monolithic Darlington circuit for audio output stages and general amplifier and switching applications.

T03 Package.
 Case connected to collector.

**PNP complements are:
 BDX62, BDX62A, BDX62B, BDX62C.**

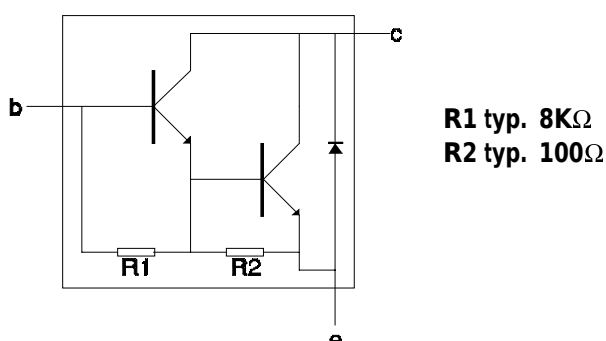
ABSOLUTE MAXIMUM RATINGS ($T_{case}=25^{\circ}C$ unless otherwise stated)

| | | BDX 63 | BDX 63A | BDX 63B | BDX 63C | |
|----------------|---|------------|------------|------------|------------|-----------------|
| V_{CEO} | Collector - emitter voltage (open base) | 60 | 80 | 100 | 120 | V |
| V_{CBO} | Collector - base voltage (open emitter) | 80 | 100 | 120 | 140 | V |
| V_{EBO} | Emitter - base voltage (open collector) | 5 | 5 | 5 | 5 | V |
| I_C | Collector current | 8 | | | | A |
| I_{CM} | Collector current (peak) | 12 | | | | A |
| I_B | Base current | 150 | | | | mA |
| P_{tot} | Total power dissipation at $T_{case} = 25^{\circ}C$ | 90 | | | | W |
| T_j | Maximum junction temperature | 200 | | | | $^{\circ}C$ |
| T_{stj} | Storage junction temperature | -65 to 200 | | | | $^{\circ}C$ |
| $R_{th\ j-mb}$ | Thermal resistance, junction to mounting base. | 1.94 | | | | $^{\circ}C / W$ |

ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$, unless otherwise stated)

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit. |
|--|--|------|------|----------|-------|
| I_{CBO} Collector cut-off current | $I_E = 0, V_{CB} = V_{CE0max}$ $I_E = 0, V_{CB} = \frac{1}{2}V_{CB0max}, T_j = 200^\circ\text{C}$ | | | 0.2 2 | mA |
| I_{CEO} Collector cut-off current | $I_B = 0, V_{CE} = \frac{1}{2}V_{CE0max}$ | | | 0.5 | mA |
| I_{EBO} Emitter cut-off current | $I_C = 0, V_{EB} = 5V$ | | | 5 | mA |
| h_{FE} D.C. current gain (note 1) | $I_C = 0.5A, V_{CE} = 3V$ | | 2500 | | |
| | $I_C = 3A, V_{CE} = 3V$ | 1000 | | | |
| | $I_C = 8A, V_{CE} = 3V$ | | 2600 | | |
| V_{BE} Base - emitter voltage (note 1) | $I_C = 3A, V_{CE} = 3V$ | | | 2.5 | V |
| V_{CEsat} Collector - emitter saturation voltage | $I_C = 3A, I_B = 12mA$ | | | 2 | V |
| C_c Collector capacitance | $I_E = I_e = 0, V_{CB} = 10V$ | | 100 | | pF |
| f_{hfe} Cut-off frequency | $I_C = 3A, V_{CE} = 3V$ | | 100 | | kHz |
| $E_{(BR)}$ Turn-off breakdown energy with inductive load | $-I_{Boff} = 0, I_{Con} = 4.5 A$ $t_p = 1ms, T = 100ms$ | 50 | | | mJ |
| h_{FE1}/h_{FE2} D.C. current gain ratio of complementary matched pairs | $I_C = 3A, V_{CE} = 3V$ | | | 2.5 | |
| $ h_{fe} $ Small signal current gain | $I_C = 3A, V_{CE} = 3V, f = 1MHz$ | | 100 | | |
| V_F Diode, forward voltage | $I_F = 3A$ | | 1.2 | | V |

Note 1: Measured under pulse conditions, $t_p < 300\mu s$, $\delta < 2\%$



Circuit diagram.