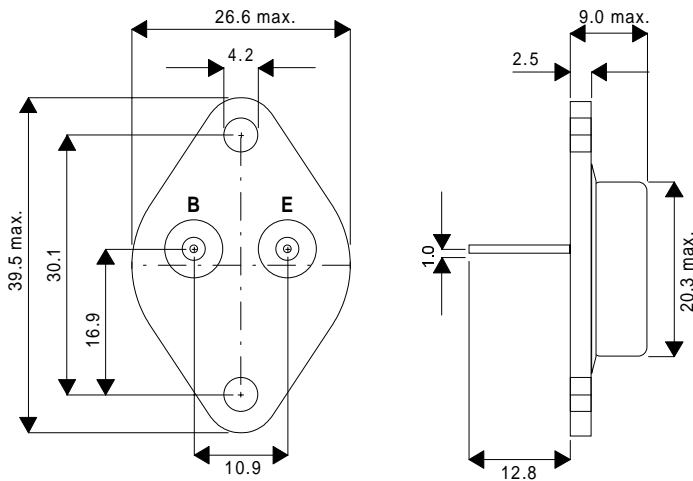


**MECHANICAL DATA**  
 Dimensions in mm

**NPN EPITAXIAL BASE  
 DARLINGTON POWER  
 TRANSISTOR**



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

**PNP complements are:  
 BDX66, BDX66A, BDX66B, BDX66C.**

**TO3 Package.**  
 Case connected to collector.

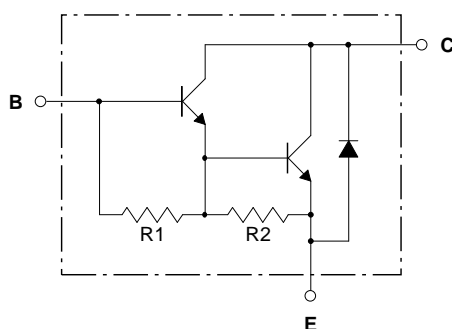
**ABSOLUTE MAXIMUM RATINGS** ( $T_{case}=25^{\circ}C$  unless otherwise stated)

|                |  | <b>BDX 67</b> | <b>BDX 67A</b> | <b>BDX 67B</b> | <b>BDX 67C</b> |             |
|----------------|--|---------------|----------------|----------------|----------------|-------------|
| $V_{CEO}$      | 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                                | 16            |                |                |                | A           |
| $I_{CM}$       | Collector current (peak)                         | 20            |                |                |                | A           |
| $I_B$          | Base current                                     | 250           |                |                |                | mA          |
| $P_{tot}$      | Total power dissipation at $T_{mb}= 25^{\circ}C$ | 150           |                |                |                | 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.   | 1.17          |                |                |                | K/ 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                      | $I_E = 0, V_{CB} = V_{CEOmax}$<br>$I_E = 0, V_{CB} = \frac{1}{2}V_{CBOmax}, T_j = 200^\circ\text{C}$ |      |      | 1<br>5 | mA    |
| $I_{CEO}$ Collector cut-off current                      | $I_B = 0, V_{CE} = \frac{1}{2}V_{CEOmax}$  |      |      | 1      | mA    |
| $I_{EBO}$ Emitter cut-off current                        | $I_C = 0, V_{EB} = 5V$   |      |      | 5      | mA    |
| $h_{FE}$ D.C. current gain (note 1)                      | $I_C = 1A, V_{CE} = 3V$  |      | 5200 |        |       |
|  | $I_C = 10A, V_{CE} = 3V$   | 1000 |      |        |       |
|  | $I_C = 16A, V_{CE} = 3V$   |      | 4000 |        |       |
| $V_{BE}$ Base - emitter voltage (note 1)                 | $I_C = 10A, V_{CE} = 3V$   |      |      | 2.5    | V     |
| $V_{CEsat}$ Collector - emitter saturation voltage       | $I_C = 10A, I_B = 40mA$  |      |      | 2      | V     |
| $C_c$ Collector capacitance                              | $I_E = I_e = 0, V_{CB} = 10V, f = 1MHz$  |      | 300  |        | pF    |
| $f_{hfe}$ Cut-off frequency                              | $I_C = 5A, V_{CE} = 3V$  |      | 50   |        | kHz   |
| $E_{(BR)}$ Turn-off breakdown energy with inductive load | $-I_{Boff} = 0, I_{CC} = 7.8 A$<br>$t_p = 1ms, \delta < 1\%$   | 150  |      |        | mJ    |
| $h_{fe}$ Small signal current gain                       | $I_C = 5A, V_{CE} = 3V, f = 1MHz$  |      | 20   |        | V     |
| $V_F$ Diode, forward voltage                             | $I_F = 10A$  |      | 2.5  |        |       |

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



**R1 typ. 3K $\Omega$**   
**R2 typ. 80 $\Omega$**

Circuit Diagram