

**isc Silicon PNP Darlington Power Transistor**

**BDX68/A/B/C**

**DESCRIPTION**

- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = -20\text{A}$
- Low Saturation Voltage
- Complement to Type BDX69/A/B/C

**APPLICATIONS**

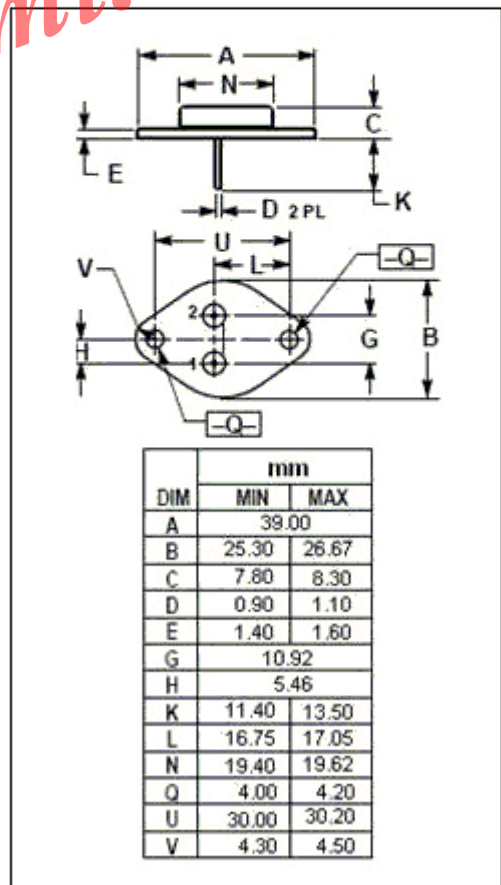
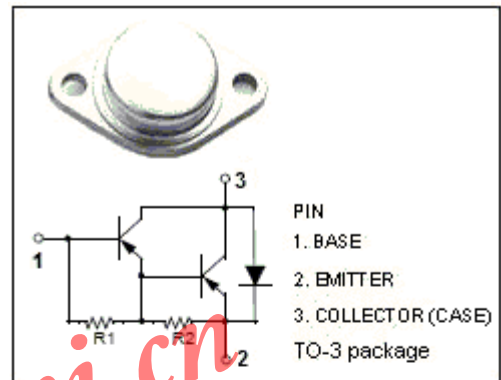
- Designed for audio output stages and general amplifier and switching applications

**ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )**

| SYMBOL    | PARAMETER  | VALUE   | UNIT             |   |
|-----------|--|---------|------------------|---|
| $V_{CBO}$ | Collector-Base Voltage                                 | BDX68   | -80              | V |
|           |  | BDX68A  | -100             |   |
|           |  | BDX68B  | -120             |   |
|           |  | BDX68C  | -140             |   |
| $V_{CEO}$ | Collector-Emitter Voltage                              | BDX68   | -60              | V |
|           |  | BDX68A  | -80              |   |
|           |  | BDX68B  | -100             |   |
|           |  | BDX68C  | -120             |   |
| $V_{EBO}$ | Emitter-Base Voltage                                   | -5      | V                |   |
| $I_C$     | Collector Current-Continuous                           | -25     | A                |   |
| $I_{CM}$  | Collector Current-Peak                                 | -40     | A                |   |
| $I_B$     | Base Current   | -500    | mA               |   |
| $P_C$     | Collector Power Dissipation @ $T_C = 25^\circ\text{C}$ | 150     | W                |   |
| $T_J$     | Junction Temperature                                   | 200     | $^\circ\text{C}$ |   |
| $T_{stg}$ | Storage Temperature Range                              | -65~200 | $^\circ\text{C}$ |   |

**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                            | MAX   | UNIT               |
|---------------|--------------------------------------|-------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 0.875 | $^\circ\text{C/W}$ |



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## BDX68/A/B/C

## ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$  unless otherwise specified

| SYMBOL         | PARAMETER                            | CONDITIONS  | MIN                                    | TYP. | MAX  | UNIT   |    |                                 |
|----------------|--------------------------------------|---|--|------|------|--|----|---------------------------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | BDX68   | $I_C = -100\text{mA}; L = 25\text{mH}$ |      |      | V  |    |                                 |
|                |                                      | BDX68A  |  | -60  |      |  |    |                                 |
|                |                                      | BDX68B  |  | -80  |      |  |    |                                 |
|                |                                      | BDX68C  |  | -100 |      |  |    |                                 |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C = -20\text{A}; I_B = -80\text{mA}$                   |  |      | -2.0 | V  |    |                                 |
| $V_{BE(on)}$   | Base-Emitter On Voltage              | $I_C = -20\text{A}; V_{CE} = -3\text{V}$                  |  |      | -2.5 | V  |    |                                 |
| $I_{CBO}$      | Collector Cutoff Current             | BDX68   |  |      |      | -2.0   | mA |                                 |
|                |                                      | BDX68A  |  |      |      | $V_{CB} = -80\text{V}; I_E = 0$<br>$V_{CB} = -40\text{V}; I_E = 0; T_C = 200^\circ\text{C}$  |    | -10                             |
|                |                                      | BDX68B  |  |      |      | $V_{CB} = -100\text{V}; I_E = 0$<br>$V_{CB} = -50\text{V}; I_E = 0; T_C = 200^\circ\text{C}$ |    | -2.0                            |
|                |                                      | BDX68C  |  |      |      | $V_{CB} = -120\text{V}; I_E = 0$<br>$V_{CB} = -60\text{V}; I_E = 0; T_C = 200^\circ\text{C}$ |    | -10                             |
| $I_{CEO}$      | Collector Cutoff Current             | BDX68   |  |      |      | -6.0   | mA |                                 |
|                |                                      | BDX68A  |  |      |      |  |    | $V_{CE} = -30\text{V}; I_B = 0$ |
|                |                                      | BDX68B  |  |      |      |  |    | $V_{CE} = -40\text{V}; I_B = 0$ |
|                |                                      | BDX68C  |  |      |      |  |    | $V_{CE} = -50\text{V}; I_B = 0$ |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB} = -5\text{V}; I_C = 0$                            |  |      | -10  | mA   |    |                                 |
| $h_{FE-1}$     | DC Current Gain                      | $I_C = -5\text{A}; V_{CE} = -3\text{V}$                   |  | 3000 |      |  |    |                                 |
| $h_{FE-2}$     | DC Current Gain                      | $I_C = -20\text{A}; V_{CE} = -3\text{V}$                  | 1000                                   |      |      |  |    |                                 |
| $h_{FE-3}$     | DC Current Gain                      | $I_C = -30\text{A}; V_{CE} = -3\text{V}$                  |  | 1000 |      |  |    |                                 |
| $C_{OB}$       | Output Capacitance                   | $I_E = 0; V_{CB} = -10\text{V}, f_{test} = 1.0\text{MHz}$ |  | 600  |      | pF   |    |                                 |