

isc Silicon PNP Darlington Power Transistor

BDX64/A/B/C

DESCRIPTION

- Collector Current $-I_C = -12A$
- High DC Current Gain $-h_{FE} = 1000(\text{Min}) @ I_C = -5A$
- Complement to Type BDX65/A/B/C

APPLICATIONS

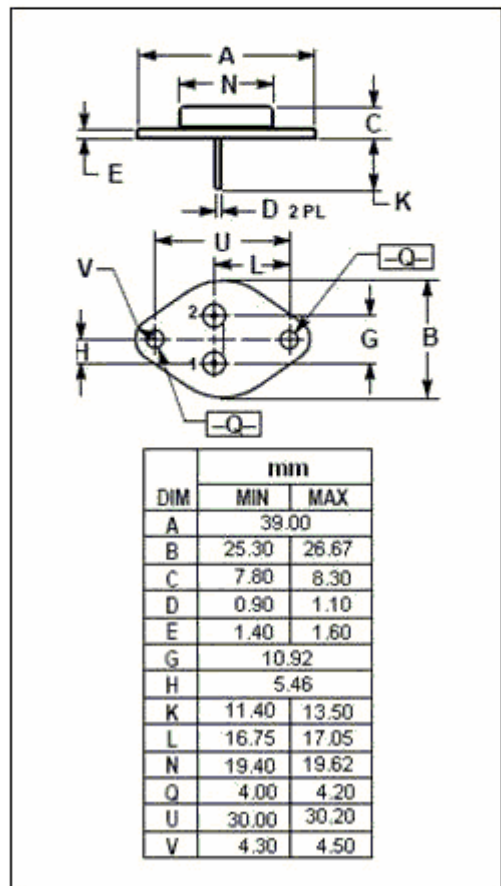
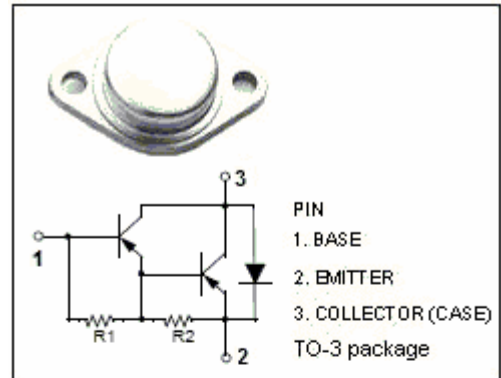
- Designed for audio output stages and general amplifier and switching applications

ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ C$)

| SYMBOL | PARAMETER | VALUE | UNIT | |
|-----------|--|---------|------------|---|
| V_{CBO} | Collector-Base Voltage | BDX64 | -80 | V |
| | | BDX64A | -100 | |
| | | BDX64B | -120 | |
| | | BDX64C | -140 | |
| V_{CEO} | Collector-Emitter Voltage | BDX64 | -60 | V |
| | | BDX64A | -80 | |
| | | BDX64B | -100 | |
| | | BDX64C | -120 | |
| V_{EBO} | Emitter-Base Voltage | -5 | V | |
| I_C | Collector Current-Continuous | -12 | A | |
| I_{CM} | Collector Current-Peak | -16 | A | |
| I_B | Base Current-Continuous | -0.2 | A | |
| P_C | Collector Power Dissipation @ $T_C = 25^\circ C$ | 117 | W | |
| T_J | Junction Temperature | 200 | $^\circ C$ | |
| T_{stg} | Storage Temperature Range | -65~200 | $^\circ C$ | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|-----|--------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.5 | $^\circ C/W$ |



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ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|--------|--|------|------|------|------|
| $V_{CE(SUS)}$ | Collector-Emitter Sustaining Voltage | BDX64 | $I_C = -100\text{mA}; I_B = 0$ | -60 | | | V |
| | | BDX64A | | -80 | | | |
| | | BDX64B | | -100 | | | |
| | | BDX64C | | -120 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | | $I_C = -5\text{A}; I_B = -20\text{mA}$ | | | -2 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | | $I_C = -5\text{A}; V_{CE} = -3\text{V}$ | | | -2.5 | V |
| V_{ECF} | C-E Diode Forward Voltage | | $I_F = -5\text{A}$ | | | -1.8 | V |
| I_{CEO} | Collector Cutoff Current | | $V_{CE} = \frac{1}{2}V_{CE0max}; I_B = 0$ | | | -0.2 | mA |
| I_{CBO} | Collector Cutoff Current | | $V_{CB} = V_{CB0max}; I_E = 0$ | | | -0.4 | mA |
| I_{CBO} | Collector Cutoff Current | BDX64 | $V_{CB} = -40\text{V}; I_E = 0; T_J = 200^\circ\text{C}$ | | | -3 | mA |
| | | BDX64A | $V_{CB} = -50\text{V}; I_E = 0; T_J = 200^\circ\text{C}$ | | | | |
| | | BDX64B | $V_{CB} = -60\text{V}; I_E = 0; T_J = 200^\circ\text{C}$ | | | | |
| | | BDX64C | $V_{CB} = -70\text{V}; I_E = 0; T_J = 200^\circ\text{C}$ | | | | |
| I_{EBO} | Emitter Cutoff Current | | $V_{EB} = -5\text{V}; I_C = 0$ | | | -5 | mA |
| h_{FE-1} | DC Current Gain | | $I_C = -1\text{A}; V_{CE} = -3\text{V}$ | | 1500 | | |
| h_{FE-2} | DC Current Gain | | $I_C = -5\text{A}; V_{CE} = -3\text{V}$ | 1000 | | | |
| h_{FE-3} | DC Current Gain | | $I_C = -12\text{A}; V_{CE} = -3\text{V}$ | | 750 | | |
| C_{OB} | Output Capacitance | | $I_E = 0; V_{CB} = -10\text{V}; f_{test} = 1\text{MHz}$ | | 200 | | pF |

Switching times

| | | | | | | |
|-----------|---------------|---|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C = -5\text{A}; I_{B1} = -I_{B2} = -20\text{mA}$ | | 1 | | μs |
| t_{off} | Turn-off Time | | | 2.5 | | μs |