

BDX18 – BDX18N

PNP SILICON TRANSISTOR EPITAXIAL BASE

LF Large Signal Power Amplification
 High Current Switching
 Thermal Fatigue Inspection
 Compliance to RoHS

Applications :

- Series and shunt regulators
- High Fidelity Amplifiers
- Power-switching circuits
- Solenoid drivers

ABSOLUTE MAXIMUM RATINGS

| Symbol | Ratings | | Value | Unit | |
|-----------|---------------------------|------------------------|-------------|------|---|
| V_{CEO} | Collector-Emitter Voltage | | BDX18 | -60 | V |
| | | | BDX18N | | |
| V_{CER} | Collector-Emitter Voltage | $R_{BE}=100\Omega$ | BDX18 | -70 | V |
| | | | BDX18N | -65 | |
| V_{EBO} | Collector-Emitter Voltage | | BDX18 | -7 | V |
| | | | BDX18N | | |
| V_{CBO} | Emitter-Base Voltage | | BDX18 | -100 | V |
| | | | BDX18N | -70 | |
| V_{CEX} | Collector-Emitter Voltage | $V_{BE}=+1.5\text{ V}$ | BDX18 | -90 | V |
| | | | BDX18N | -70 | |
| I_C | Collector Current | | BDX18 | -15 | A |
| | | | BDX18N | | |
| I_B | Base Current | | BDX18 | -7 | A |
| | | | BDX18N | | |
| P_T | Power Dissipation | @ $T_C = 25^\circ$ | 117 | W | |
| T_J | Junction Temperature | | -65 to +200 | °C | |
| T_S | Storage Temperature | | | | |



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THERMAL CHARACTERISTICS

| Symbol | Ratings | Value | Unit |
|-------------|--------------------------------------|-------|------|
| R_{thJ-C} | Thermal Resistance, Junction to Case | 1.5 | °C/W |

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

| Symbol | Ratings | Test Condition(s) | Min | Typ | Max | Unit | |
|----------------|---|--|--------|-----|-----|------|-----|
| $V_{CEO(SUS)}$ | Collector-Emitter Breakdown Voltage (*) | $I_C=200\text{ mA}$ | BDX18 | -60 | - | - | V |
| | | $I_B=0$ | BDX18N | -60 | - | - | |
| $V_{CEX(SUS)}$ | Collector-Emitter Breakdown Voltage (*) | $I_C=-100\text{ mA}$ | BDX18 | -90 | - | - | V |
| | | $V_{BE}=1.5\text{ V}$ | BDX18N | -70 | - | - | |
| $V_{CER(SUS)}$ | Collector-Emitter Breakdown Voltage (*) | $I_C=-200\text{ mA}$ | BDX18 | -70 | - | - | V |
| | | $R_{BE}=100\ \Omega$ | BDX18N | -65 | - | - | |
| I_{CEX} | Collector-Emitter Cutoff Current | $V_{CE}=-90\text{ V}$ | BDX18 | - | - | -5 | mA |
| | | $V_{BE}=1.5\text{ V}$ | | - | - | -10 | |
| | | $V_{CE}=-60\text{ V}, V_{BE}=1.5\text{ V}$ | BDX18N | - | - | -5 | |
| | | $T_{CASE}=150^\circ\text{C}$ | | - | - | -10 | |
| I_{EBO} | Emitter-Base Cutoff Current | $V_{EB}=-7\text{ V}$ | BDX18 | - | - | -5 | mA |
| | | | BDX18N | - | - | -5 | |
| V_{BE} | Base-Emitter Voltage (*) | $I_C=-4.0\text{ A}, V_{CE}=-4.0\text{ V}$ | BDX18 | - | - | -1.8 | V |
| | | | BDX18N | - | - | -1.8 | |
| $V_{CE(SAT)}$ | Collector-Emitter Saturation Voltage | $I_C=-4.0\text{ A}, I_B=-0.4\text{ V}$ | BDX18 | - | - | -1.1 | V |
| | | | BDX18N | - | - | -1.1 | |
| f_T | Transition Frequency | $I_C=-1\text{ A}, V_{CE}=-10\text{ V}$ $f=1\text{ MHz}$ | BDX18 | - | 4 | - | MHz |
| | | | BDX18N | - | 4 | - | |
| h_{21E} | Static Forward Current Transfer Ratio (*) | $V_{CE}=-4.0\text{ V}, I_C=-4.0\text{ A}$ | BDX18 | 20 | - | 70 | - |
| | | | BDX18N | 20 | - | 70 | |

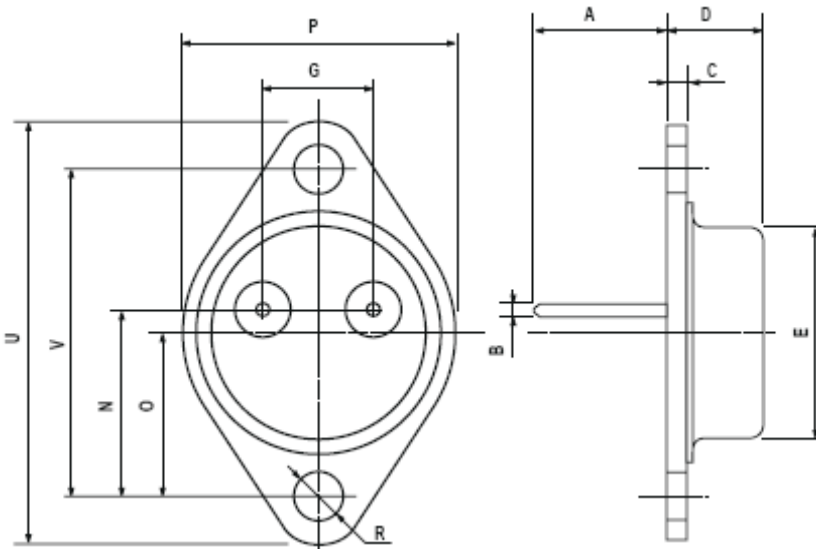
(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$

(1) collector-Emitter voltage limited et $V_{CECl} = V_{\text{rated}}$ by an auxiliary circuit

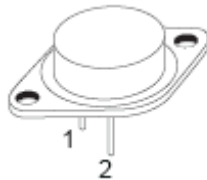
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MECHANICAL DATA CASE TO-3

| DIMENSIONS (mm) | | |
|-----------------|-------|-------|
| | min | max |
| A | 11 | 13.10 |
| B | 0.97 | 1.15 |
| C | 1.5 | 1.65 |
| D | 8.32 | 8.92 |
| F | 19 | 20 |
| G | 10.70 | 11.1 |
| N | 16.50 | 17.20 |
| P | 25 | 26 |
| R | 4 | 4.09 |
| U | 38.50 | 39.30 |
| V | 30 | 30.30 |



| | |
|---------|-----------|
| Pin 1 : | Base |
| Pin 2 : | Emitter |
| Case : | Collector |



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