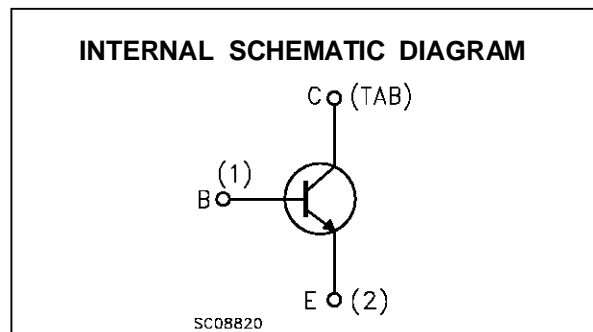
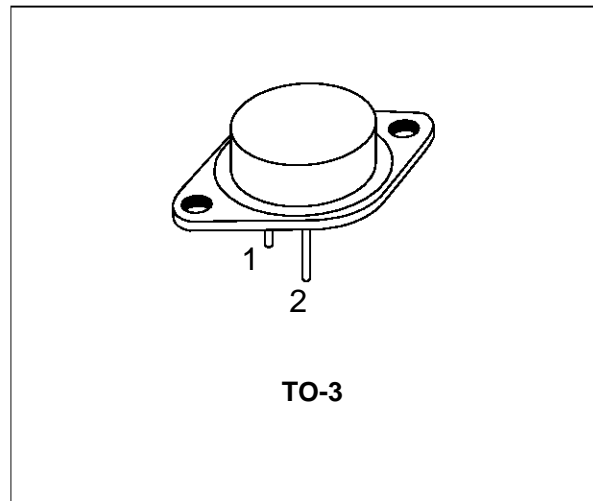


HIGH CURRENT NPN SILICON TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

DESCRIPTION

The BUX11 is a silicon multiepitaxial NPN transistor in Jedec TO-3 metal case, intended for use in switching and linear applications in military and industrial equipment.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|---|------------|------------|
| V_{CBO} | Collector-base Voltage ($I_E = 0$) | 250 | V |
| V_{CEX} | Collector-emitter Voltage ($V_{BE} = -1.5V$) | 250 | V |
| V_{CEO} | Collector-emitter Voltage ($I_B = 0$) | 200 | V |
| V_{EBO} | Emitter-base Voltage ($I_C = 0$) | 7 | V |
| I_C | Collector Current | 20 | A |
| I_{CM} | Collector Peak Current ($t_P = 10$ ms) | 25 | A |
| I_B | Base Current | 4 | A |
| P_{tot} | Total Power Dissipation at $T_{case} \leq 25^\circ C$ | 150 | W |
| T_{stg} | Storage Temperature | -65 to 200 | $^\circ C$ |
| T_j | Max Operating Junction Temperature | 200 | $^\circ C$ |

BUX11

THERMAL DATA

| | | | | |
|----------------|----------------------------------|-----|------|---------------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | Max | 1.17 | $^{\circ}C/W$ |
|----------------|----------------------------------|-----|------|---------------|

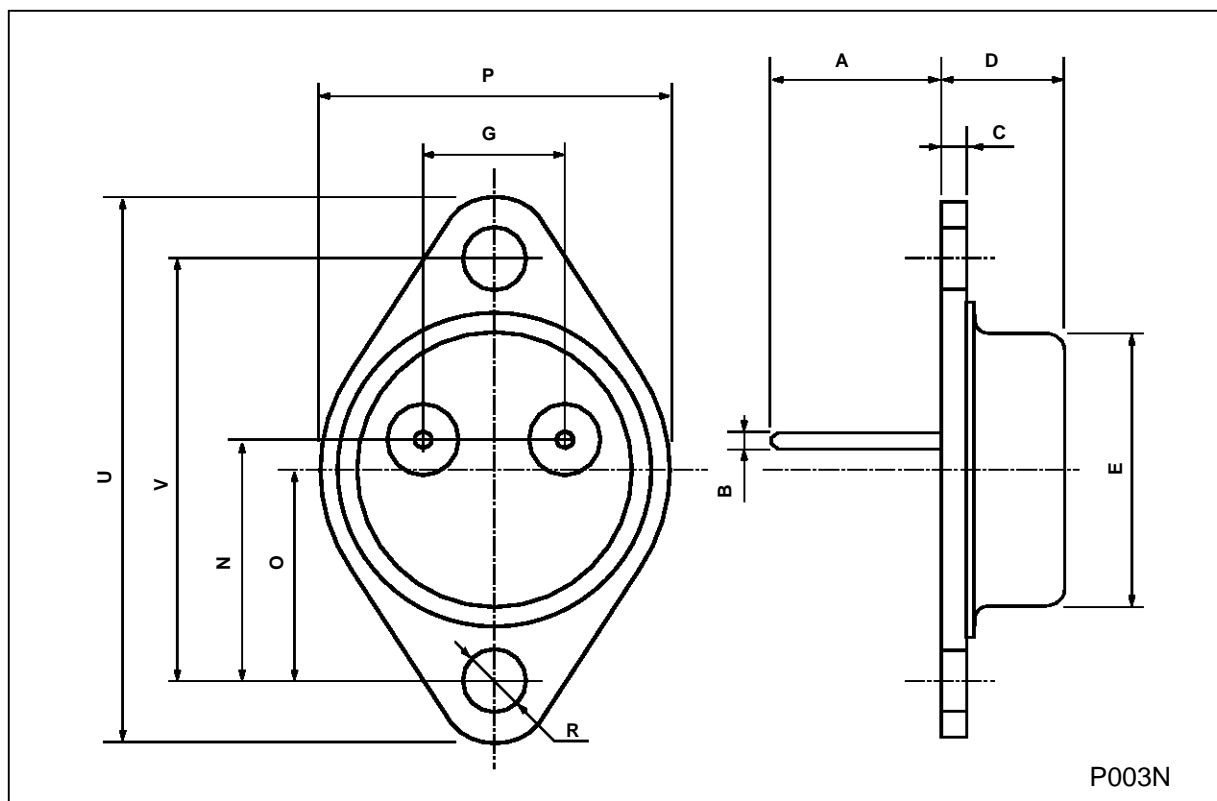
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------|---|---|-----------|-------------|------------|--------------------|
| I_{CEO} | Collector Cut-off Current ($I_B = 0$) | $V_{CE} = 160 V$ | | | 1.5 | mA |
| I_{CEX} | Collector Cut-off Current | $V_{CE} = 250 V$ $V_{CE} = 250 V$ $T_{case} = 125^{\circ}C$ | | | 1.5 6 | mA mA |
| I_{EBO} | Emitter Cut-off Current ($I_C = 0$) | $V_{EB} = 5 V$ | | | 1 | mA |
| $V_{CEO(sus)}^*$ | Collector-Emitter Sustaining Voltage | $I_C = 200 mA$ | 200 | | | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | $I_E = 50 mA$ | 7 | | | V |
| $V_{CE(sat)}^*$ | Collector-Emitter Saturation Voltage | $I_C = 6 A$ $I_B = 0.6 A$ $I_C = 12 A$ $I_B = 1.5 A$ | | 0.3 0.6 | 0.6 1.5 | V V |
| $V_{BE(sat)}^*$ | Base-Emitter Saturation Voltage | $I_C = 12 A$ $I_B = 1.5 A$ | | 1.3 | 1.5 | V |
| h_{FE}^* | DC Current Gain | $I_C = 6 A$ $V_{CE} = 2 V$ $I_C = 12 A$ $V_{CE} = 4 V$ | 20 10 | | 60 | |
| $I_{S/b}$ | Second Breakdown Collector Current | $V_{CE} = 30 V$ $t = 1 s$ $V_{CE} = 140 V$ $t = 1 s$ | 5 0.15 | | | A A |
| f_T | Transistor Frequency | $I_C = 1 A$ $V_{CE} = 15V$ $f = 10MHz$ | 8 | | | MHz |
| t_{on} | Turn-on Time | $I_C = 12 A$ $I_{B1} = 1.5 A$ $V_{CC} = 150V$ | | 0.3 | 1 | μs |
| t_s t_f | Storage Time Fall Time | $I_C = 12 A$ $I_{B1} = 1.5 A$ $I_{B2} = 1.5 A$ $V_{CC} = 150V$ | | 1.2 0.24 | 1.8 0.4 | μs μs |
| | Clamped $E_{s/b}$ Collector Current | $V_{clamp} = 200 V$ $L = 500 \mu H$ | 12 | | | A |

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

TO-3 (H) MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|-------|-------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | 11.7 | | | 0.460 | |
| B | 0.96 | | 1.10 | 0.037 | | 0.043 |
| C | | | 1.70 | | | 0.066 |
| D | | | 8.7 | | | 0.342 |
| E | | | 20.0 | | | 0.787 |
| G | | 10.9 | | | 0.429 | |
| N | | 16.9 | | | 0.665 | |
| P | | | 26.2 | | | 1.031 |
| R | 3.88 | | 4.09 | 0.152 | | 0.161 |
| U | | | 39.50 | | | 1.555 |
| V | | 30.10 | | | 1.185 | |



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