

HIGH POWER NPN SILICON TRANSISTORS

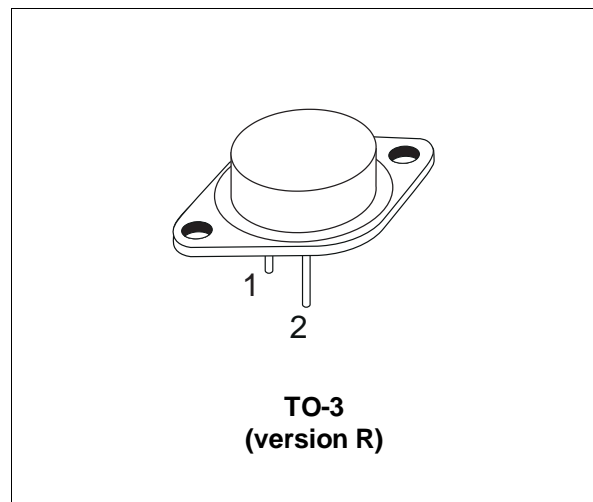
- SGS-THOMSON PREFERRED SALESTYPES
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

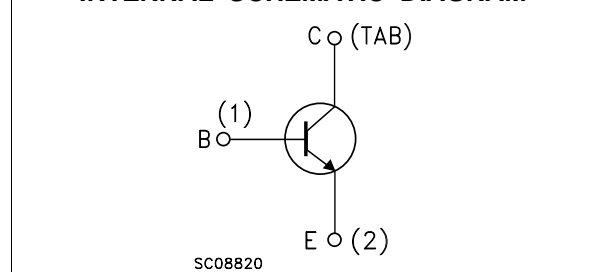
- HIGH FREQUENCY AND EFFICIENCY CONVERTERS
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BUX98 and BUX98A are silicon multiepitaxial mesa NPN transistor in jedec TO-3 metal case, intended and industrial applications from single and three-phase mains operation.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | | Unit |
|-----------|---|------------|--------|------------------|
| | | BUX98 | BUX98A | |
| V_{CER} | Collector-Emitter Voltage ($R_{BE} = \leq 10 \Omega$) | 850 | 1000 | V |
| V_{CES} | Collector-Base Voltage ($V_{BE} = 0$) | 850 | 1000 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 400 | 450 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | 7 | | V |
| I_C | Collector Current | 30 | | A |
| I_{CM} | Collector Peak Current ($t_p < 5$ ms) | 60 | | A |
| I_{CP} | Collector Peak Current non Rep. ($t_p < 20 \mu s$) | 80 | | A |
| I_B | Base Current | 8 | | A |
| I_{BM} | Base Peak Current ($t_p < 5$ ms) | 30 | | A |
| P_{tot} | Total Power Dissipation at $T_{case} < 25 \text{ }^\circ\text{C}$ | 250 | | W |
| T_{stg} | Storage Temperature | -65 to 200 | | $^\circ\text{C}$ |
| T_j | Max Operating Junction Temperature | 200 | | $^\circ\text{C}$ |

BUX98 / BUX98A

THERMAL DATA

| | | | | |
|-----------------------|----------------------------------|-----|-----|------|
| R _{thj-case} | Thermal Resistance Junction-case | Max | 0.7 | °C/W |
|-----------------------|----------------------------------|-----|-----|------|

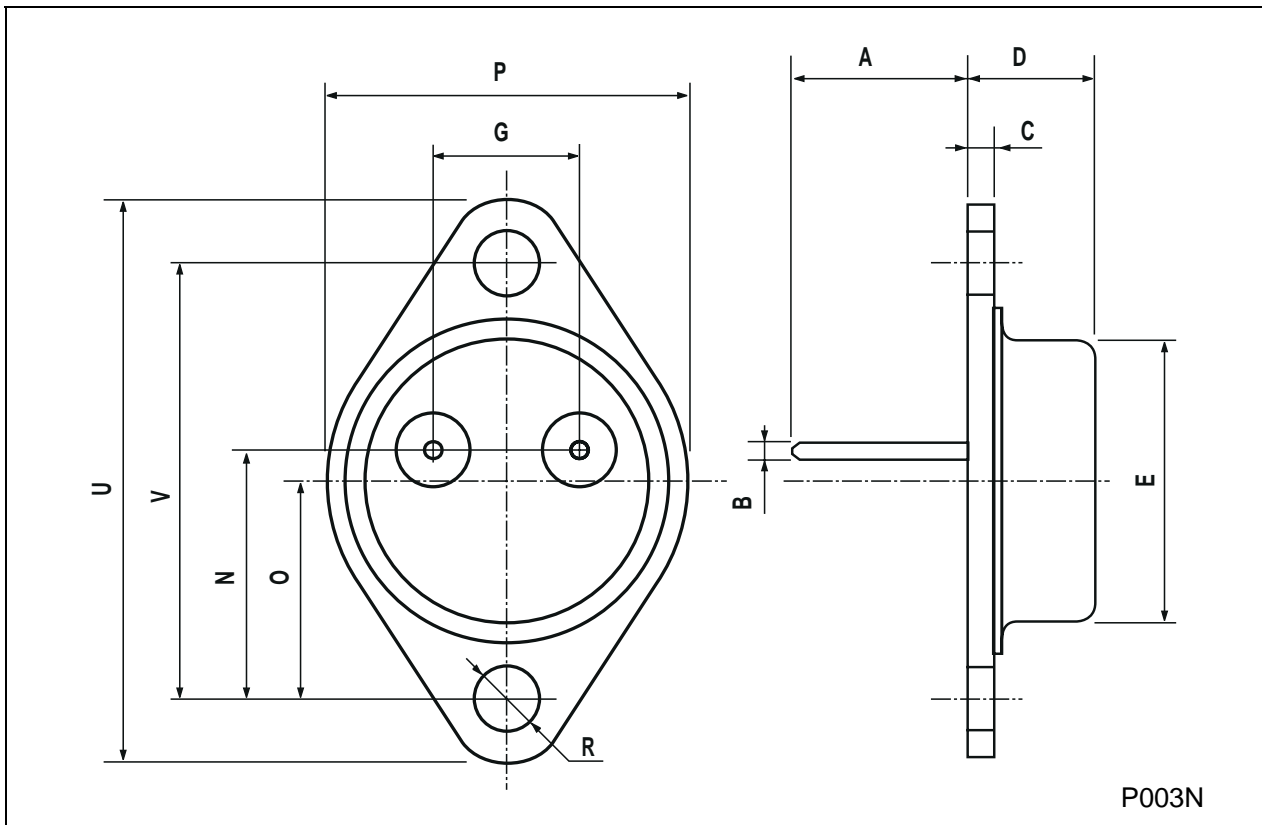
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------|--|--|-------------|------|-----------------|-------------|
| I _{CER} | Collector Cut-off Current (R _{BE} = 10 Ω) | V _{CE} = V _{CES} V _{CE} = V _{CES} T _{CASE} = 125 °C | | | 1 8 | μA mA |
| I _{CES} | Collector Cut-off Current (V _{BE} = 0) | V _{CE} = V _{CES} V _{CE} = V _{CES} T _{CASE} = 125 °C | | | 400 4 | μA mA |
| I _{CEO} | Collector Cut-off Current (I _B = 0) | V _{CE} = V _{CEO} | | | 2 | mA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = 5 V | | | 2 | mA |
| V _{CEO(sus)*} | Collector-Emitter Sustaining Voltage | I _C = 200 mA for BUX98 for BUX98A | 400 450 | | | V V |
| V _{CER(sus)*} | Collector-Emitter Sustaining Voltage | L = 2mH I _C = 1 A for BUX98 for BUX98A | 850 1000 | | | V V |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | for BUX98 I _C = 20 A I _B = 4 A for BUX98A I _C = 16 A I _B = 3.2 A I _C = 24 A I _B = 5 A | | | 1.5 1.5 5 | V V V |
| V _{BE(sat)*} | Base-Emitter Saturation Voltage | for BUX98 I _C = 20 A I _B = 4 A for BUX98A I _C = 16 A I _B = 3.2 A | | | 1.6 1.6 | V V |
| t _{on} | Turn-on Time | for BUX98 | | | 1 | μs |
| t _s | Storage Time | V _{CC} = 150 V I _C = 20 A | | | 3 | μs |
| t _f | Fall Time | I _{B1} = - I _{B2} = 4 A | | | 0.8 | μs |
| t _{on} | Turn-on Time | for BUX98A | | | 1 | μs |
| t _s | Storage Time | V _{CC} = 150 V I _C = 16 A | | | 3 | μs |
| t _f | Fall Time | I _{B1} = - I _{B2} = 3.2 A | | | 0.8 | μs |

* Pulsed: Pulse duration = 300 μs, duty cycle = 1.5 %

TO-3 (version R) 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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