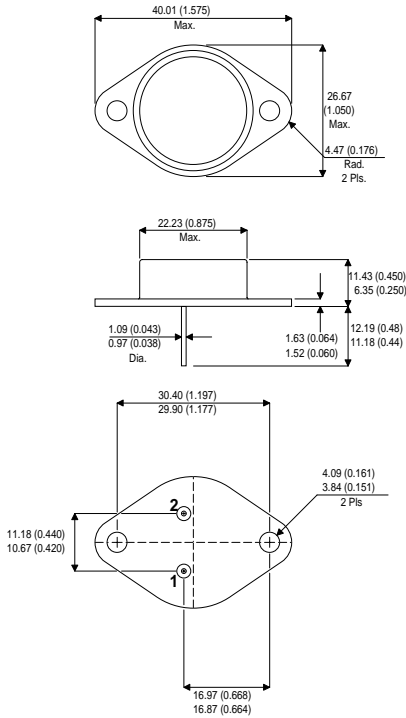


MECHANICAL DATA

Dimensions in mm (inches)



(TO-3)

PIN 1 – Base PIN 2 – Emitter CASE – Collector

**HIGH VOLTAGE FAST SWITCHING
POWER TRANSISTOR**

DESCRIPTION

The BUL98B is a silicon multi-epitaxial mesa NPN transistor in a JEDEC TO-3 metal case, intended for military and industrial applications.

- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- JAN LEVEL SCREENING OPTIONS
- HIGH SPEED SWITCHING

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

| | | |
|-----------|--|---------------|
| V_{CER} | Collector - Emitter Voltage ($R_{BE} \approx 10 \Omega$) | 850V |
| V_{CES} | Collector - Base Voltage ($V_{BE} = 0V$) | 850V |
| V_{CEO} | Collector - Emitter Voltage ($I_B = 0$) | 400V |
| V_{EBO} | Emitter - Base Voltage ($I_C = 0$) | 7V |
| I_C | Collector Current | 25A |
| I_{CM} | Collector Peak Current non ($t_p = 5ms$) | 60A |
| I_{CP} | Collector Peak Current non Rep ($t_p = 20\mu s$) | 80A |
| I_B | Base Current | 8A |
| I_{BM} | Base Peak Current ($t_p = 5ms$) | 30A |
| P_{tot} | Total Power Dissipation $T_{case} < 25^{\circ}C$ | 250W |
| T_{STG} | Storage Temperature | -65 to +200°C |
| T_J | Junction Temperature | 200°C |

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|--|---|------|------|------|-----------------------------|
| $V_{\text{CEO(sus)}}^*$ Collector-Emitter Voltage (Sustaining) | $I_{\text{C}}=200\text{mA}$ | 400 | | | V |
| $V_{\text{CER(sus)}}^*$ Collector-Emitter Voltage (Sustaining) | $I_{\text{C}}=1\text{A}$ $L=2\text{mH}$ | 850 | | | |
| $V_{\text{CE(sat)}}^*$ Collector-Emitter Saturation Voltage | $I_{\text{C}}=20\text{A}$ $I_{\text{B}}=4\text{A}$ | | | 1.5 | |
| $V_{\text{BE(sat)}}^*$ Base-Emitter Saturation Voltage | $I_{\text{C}}=20\text{A}$ $I_{\text{B}}=4\text{A}$ | | | 1.6 | |
| I_{CER} Collector Cutoff Current | $V_{\text{CE}} = V_{\text{CES}}$ $V_{\text{BE}} = 10\Omega$ $T_{\text{case}} = 125^{\circ}\text{C}$ | | | 1 | μA |
| | | | | 8 | mA |
| I_{CES} Collector Cutoff Current | $V_{\text{CE}} = V_{\text{CES}}$ $V_{\text{BE}} = 0\text{V}$ $T_{\text{case}} = 125^{\circ}\text{C}$ | | | 400 | μA |
| | | | | 4 | mA |
| I_{CEO} Collector Cutoff Current | $V_{\text{CE}}=V_{\text{CEO}}$ | | | 2 | mA |
| I_{EBO} Emitter Cutoff Current | $V_{\text{EB}}=5\text{V}$ $I_{\text{C}}=0$ | | | 2 | mA |
| t_{on} Turn-On Time | $V_{\text{CC}}=150\text{V}$ $I_{\text{C}}=20\text{A}$ $I_{\text{B1}}=I_{\text{B2}}=4\text{A}$ | | | 1 | μs |
| t_{s} Storage Time | | | | 3 | |
| t_{f} Fall Time | | | | 0.8 | |
| R_{JC} Thermal Resistance Junction to Case | | | | 0.7 | $^{\circ}\text{C}/\text{W}$ |

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