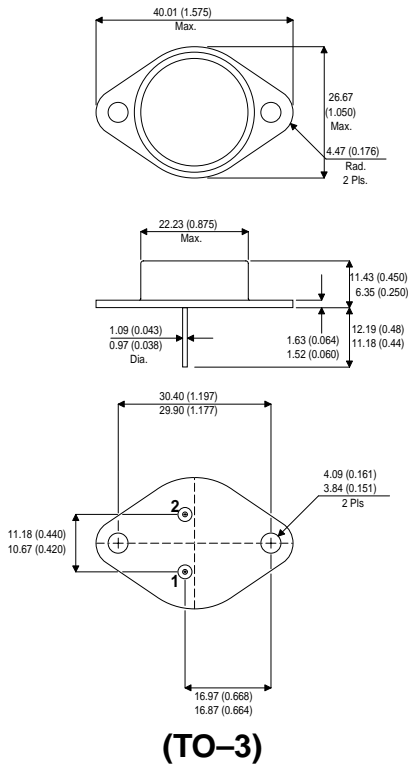


**MECHANICAL DATA**

Dimensions in mm (inches)



**(TO-3)**

PIN 1 — Base    PIN 2 — Emitter    Case is Collector.

**HIGH VOLTAGE FAST SWITCHING**

**Description**

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

**ABSOLUTE MAXIMUM RATINGS**

|           |  | <b>BUX98</b> | <b>BUX98A</b> |
|-----------|--|--------------|---------------|
| $V_{CER}$ | Collector – Emitter Voltage ( $R_{BE} \leq 10\Omega$ ) | 850          | 1000          |
| $V_{CES}$ | Collector – Base Voltage ( $V_{BE} = 0$ )              | 850          | 1000          |
| $V_{CEO}$ | Collector – Emitter Voltage ( $I_B = 0$ )              | 400          | 450           |
| $V_{EBO}$ | Emitter – Base Voltage ( $I_C = 0$ )                   |              | 7V            |
| $I_C$     | Collector Current                                      |              | 30A           |
| $I_{CM}$  | 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 +150°C |
| $T_J$     | Junction Temperature                                   |              | 200°C         |

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

| Parameter   | Test Conditions                             |                           | Min.          | Typ. | Max. | Unit    |  |
|---|---|---------------------------|---------------|------|------|---------|--|
| $V_{CEO(sus)^*}$<br>Collector - Emitter<br>Sustaining Voltage | $I_C = 200mA$                               | <b>BUX98</b>              | 400           |      |      | V       |  |
|   |   | <b>BUX98A</b>             | 450           |      |      |         |  |
| $V_{CER(sus)^*}$<br>Collector - Emitter<br>Sustaining Voltage | $I_C = 1A$                                  | $L = 2mH$                 | <b>BUX98</b>  | 850  |      |         |  |
|   |   |                           | <b>BUX98A</b> | 1000 |      |         |  |
| $V_{CE(sat)^*}$<br>Collector – Emitter<br>Saturation Voltage  | $I_C = 20A$                                 | $I_B = 4A$                | <b>BUX98</b>  |      | 1.5  |         |  |
|   |   | $I_B = 3.2A$              | <b>BUX98A</b> |      | 1.5  |         |  |
|   | $I_C = 24A$                                 | $I_B = 5A$                | <b>BUX98</b>  |      | 5    |         |  |
|   |   | $I_B = 4A$                | <b>BUX98A</b> |      | 1.6  |         |  |
| $I_{CER}$<br>Collector Cutoff Current                         | $V_{CE} = V_{CES}$<br>$R_{BE} = 10\Omega$   | $T_{case} = 125^{\circ}C$ |               |      | 1    | $\mu A$ |  |
|   |   |                           |               |      | 8    | mA      |  |
| $I_{CES}$<br>Collector Cutoff Current                         | $V_{CE} = V_{CES}$<br>$V_{BE} = 0$          | $T_{case} = 125^{\circ}C$ |               |      | 400  | $\mu A$ |  |
|   |   |                           |               |      | 4    | mA      |  |
| $I_{CEO}$<br>Collector Cutoff Current                         | $V_{CES} = V_{CEO}$                         | $I_C = 0$                 |               |      | 2    | mA      |  |
| $I_{EBO}$<br>Emitter Cutoff Current                           | $V_{EB} = 5V$                               | $I_C = 0$                 |               |      | 2    | mA      |  |
| $t_{on}$<br>Turn-On Time                                      | $V_{CC} = 150V$<br>$I_{B1} = I_{B2} = 4A$   | $I_C = 20A$               | <b>BUX98</b>  |      | 1    | $\mu A$ |  |
| $t_s$<br>Storage Time   |   |                           |               |      | 3    |         |  |
| $t_f$<br>Fall Time  |   |                           |               |      | 0.8  |         |  |
| $t_{on}$<br>Turn-On Time                                      | $V_{CC} = 150V$<br>$I_{B1} = I_{B2} = 3.2A$ | $I_C = 16A$               | <b>BUX98A</b> |      | 1    | $\mu A$ |  |
| $t_s$<br>Storage Time   |   |                           |               |      | 3    |         |  |
| $t_f$<br>Fall Time  |   |                           |               |      | 0.8  |         |  |

\* Pulsed: Pulse duration = 300 $\mu s$ , duty cycle = 1.5%

**THERMAL CHARACTERISTICS**

|                  |                                     |                      |
|------------------|-------------------------------------|----------------------|
| $R_{th\ j-case}$ | Thermal Resistance Junction to Case | 0.7max $^{\circ}C/W$ |
|------------------|-------------------------------------|----------------------|