

BU208D

NPN POWER TRANSISTOR

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

| Characteristic | Symbol | BU208D | Unit |
|--|-----------------|-------------|--------------------|
| Collector-Emitter Voltage ($V_{BE} = 0$) | V_{CES} | 1500 | V |
| Collector-Emitter Voltage ($I_B = 0$) | V_{CEO} | 700 | V |
| Emitter-Base Voltage ($I_C = 0$) | V_{EBO} | 10.0 | V |
| Collector Current – continuous | I_C | 8 | A |
| Peak | | 15 | |
| Total Power Dissipation @ $T_C = 25^\circ\text{C}$ | P_D | 150 | W |
| Junction and Storage Temperature Range | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 1 | $^\circ\text{C/W}$ |

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

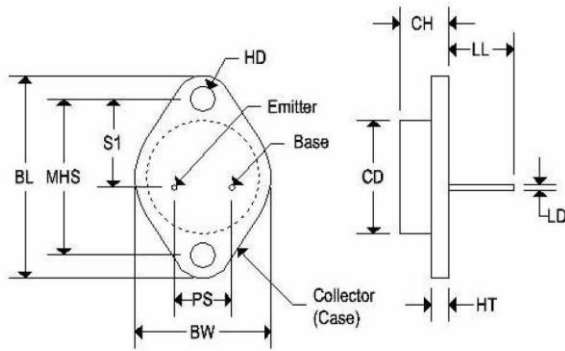
| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---|-------|-----|------------|---------------|
| Collector Cutoff Current ($V_{CE} = 1500\text{V}, V_{BE} = 0$) ($V_{CE} = 1500\text{V}, V_{BE} = 0, T_J = 125^\circ\text{C}$) | I_{CES} | - | - | 1.0 2.0 | mA |
| Emitter Cutoff Current ($V_{EB} = 5.0\text{V}, I_C = 0$) | I_{EBO} | - | - | 300 | mA |
| Collector-Emitter Saturation Voltage ($I_C = 4.5\text{A}, I_B = 2\text{A}$) | $V_{CE(sat)}$ | - | - | 1.0 | V |
| Collector-Emitter Sustaining Voltage ($I_C = 100\text{mA}$) | $V_{CEO(sus)}$ | 700 | - | - | V |
| Base-Emitter Saturation Voltage ⁽¹⁾ ($I_C = 4.5\text{A}, I_B = 2\text{A}$) | $V_{BE(sat)}$ | - | - | 1.3 | V |
| Storage Time | $I_C = 4.5\text{A}, h_{FE} = 2.5, V_{CC} = 140\text{V}, L_C = 0.9\text{mH}, L_B = 3\mu\text{H}$ | t_s | - | 7.0 | μs |
| Fall Time | | t_f | - | 550 | ns |
| Diode Forward Voltage ($I_F = 4\text{A}$) | V_F | - | - | 2 | V |
| Transition Frequency ($I_C = 0.1\text{A}, V_{CE} = 5\text{V}, f = 5\text{MHz}$) | f_T | - | 7 | - | MHz |

BU208D

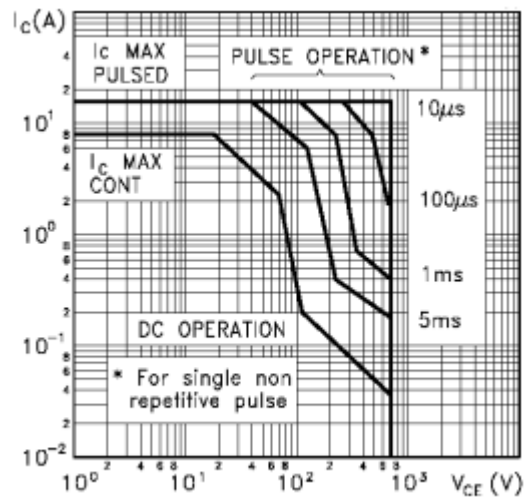
NPN POWER TRANSISTOR

MECHANICAL CHARACTERISTICS

| | |
|------------------|---------------|
| Case: | TO-3 |
| Marking: | Alpha-Numeric |
| Polarity: | See below |



| | TO-3 | | | |
|-----|-----------|-------|-------------|--------|
| | Inches | | Millimeters | |
| | Min | Max | Min | Max |
| CD | - | 0.875 | - | 22.220 |
| CH | 0.250 | 0.380 | 6.860 | 9.650 |
| HT | 0.060 | 0.135 | 1.520 | 3.430 |
| BW | - | 1.050 | - | 26.670 |
| HD | 0.131 | 0.188 | 3.330 | 4.780 |
| LD | 0.038 | 0.043 | 0.970 | 1.090 |
| LL | 0.312 | 0.500 | 7.920 | 12.700 |
| BL | 1.550 REF | | 39.370 REF | |
| MHS | 1.177 | 1.197 | 29.900 | 30.400 |
| PS | 0.420 | 0.440 | 10.670 | 11.180 |
| S1 | 0.655 | 0.675 | 16.640 | 17.150 |

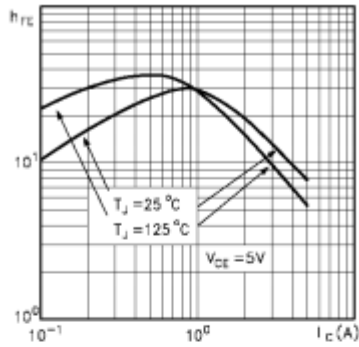


SAFE OPERATING AREA

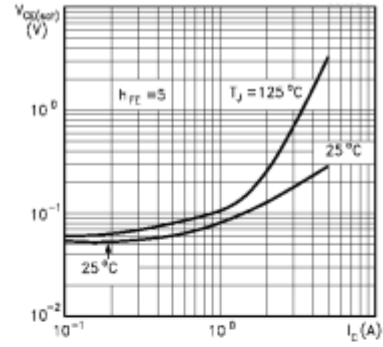
BU208D

NPN POWER TRANSISTOR

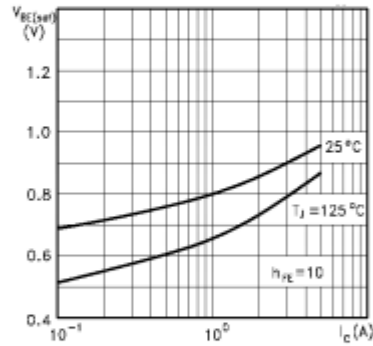
DC Current Gain



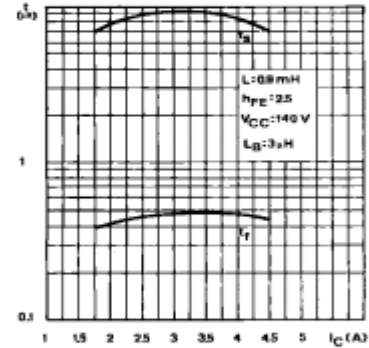
Collector Emitter Saturation Voltage



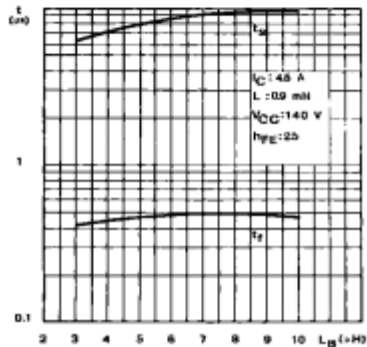
Base Emitter Saturation Voltage



Switching Time Inductive Load



Switching Time Inductive Load (see figure 1)



Switching Time Percentance vs. Case

