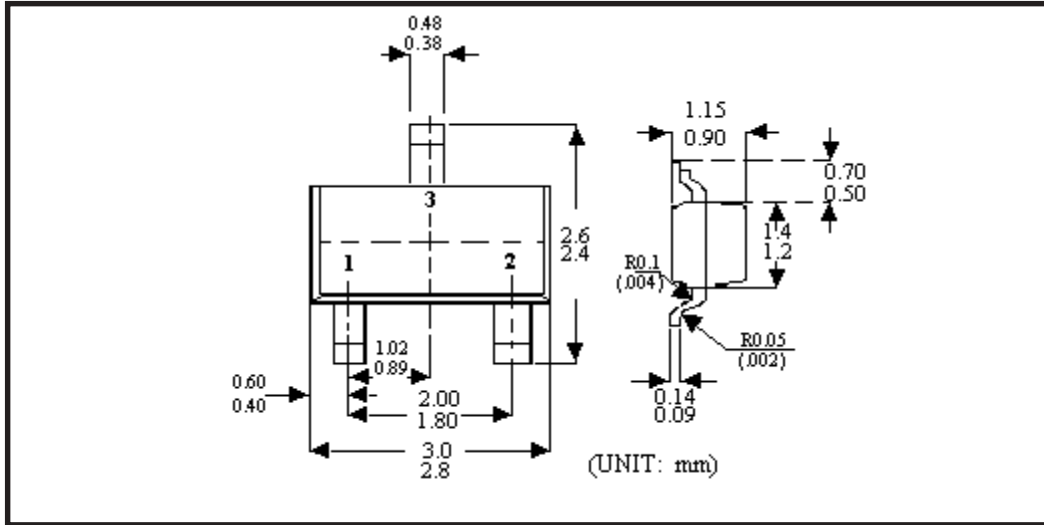


SOT-23 - Power Transistor and Darlingtontons



Maximum Ratings Electrical Characteristics (at Ta = 25°C unless otherwise specified)

| Part # | Polarity | V _{CBO} (V) Min | V _{CEO} (V) Min | V _{EBO} (V) Min | P _D (W) @ 25 °C | I _C (A) | I _{CBO} (uA) Max | @ V _{CB} | h _{FE} Min | h _{FE} Max | @ I _C (A) | V _{CE} (V) | V _{CE(SAT)} (V) Max | V _{BE(SAT)} (V) min - max | @ I _C (A) | f _T (MHz) Min | @ I _C (mA) |
|--------|----------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|-----------------------|---------------------------------|-------------------|------------------------|------------------------|-------------------------|------------------------|------------------------------------|--|-------------------------|--------------------------------|--------------------------|
| *BC807 | PNP | 50 ¹ | 45 | 5 | 0.25 | 0.5 | 100 | 20 | 100 | 600 | 100 | 1 | 0.70 | | 500 | | 10 |
| *BC808 | PNP | 30 ¹ | 25 | 5 | 0.25 | 0.5 | 100 | 20 | 100 | 600 | 100 | 1 | 0.70 | | 500 | | 10 |
| *BC817 | NPN | 50 ¹ | 45 | 5 | 0.25 | 0.5 | 100 | 20 | 100 | 600 | 100 | 1 | 0.70 | | 500 | | 10 |
| *BC818 | NPN | 30 ¹ | 25 | 5 | 0.25 | 0.5 | 100 | 20 | 100 | 600 | 100 | 1 | 0.70 | | 500 | | 10 |
| *BC846 | NPN | 80 | 65 | 6 | 0.25 | 0.1 | 15 | 30 | 110 | 450 | 2 | 5 | 0.60 | | 100 | | 10 |
| *BC847 | NPN | 50 | 45 | 6 | 0.25 | 0.1 | 15 | 30 | 110 | 800 | 2 | 5 | 0.60 | | 100 | | 10 |
| *BC848 | NPN | 30 | 30 | 5 | 0.25 | 0.1 | 15 | 30 | 110 | 800 | 2 | 5 | 0.60 | | 100 | | 10 |
| *BC849 | NPN | 30 | 30 | 5 | 0.25 | 0.1 | 15 | 30 | 200 | 800 | 2 | 5 | 0.60 | | 100 | | 10 |
| *BC850 | NPN | 50 | 45 | 5 | 0.25 | 0.1 | 15 | 30 | 200 | 800 | 2 | 5 | 0.60 | | 100 | | 10 |
| *BC856 | PNP | 80 | 65 | 5 | 0.25 | 0.1 | 15 | 30 | 125 | 475 | 2 | 5 | 0.65 | | 100 | | 10 |
| *BC857 | PNP | 50 | 45 | 5 | 0.25 | 0.1 | 15 | 30 | 125 | 800 | 2 | 5 | 0.65 | | 100 | | 10 |
| *BC858 | PNP | 30 | 30 | 5 | 0.25 | 0.1 | 15 | 30 | 125 | 800 | 2 | 5 | 0.65 | | 100 | | 10 |
| *BC859 | PNP | 30 | 30 | 5 | 0.25 | 0.1 | 15 | 30 | 125 | 800 | 2 | 5 | 0.65 | | 100 | | 10 |
| *BC860 | PNP | 50 | 45 | 5 | 0.25 | 0.1 | 15 | 30 | 125 | 800 | 2 | 5 | 0.65 | | 100 | | 10 |
| BF820 | NPN | 300 | 300 ² | 5 | 0.25 | 0.05 | 10 | 200 | 50 | | 25 | 20 | 0.60 | | 30 | | 10 |
| BF821 | PNP | 300 | 300 ² | 5 | 0.25 | 0.05 | 10 | 200 | 50 | | 25 | 20 | 0.80 | | 30 | | 10 |
| BF822 | NPN | 250 | 250 | 5 | 0.25 | 0.05 | 10 | 200 | 50 | | 25 | 20 | 0.60 | | 30 | | 10 |
| BF823 | PNP | 250 | 250 | 5 | 0.25 | 0.05 | 10 | 200 | 50 | | 25 | 20 | 0.80 | | 30 | | 10 |
| BF840 | NPN | 40 | 40 | 4 | 0.25 | 0.025 | 100 | 20 | 67 | 222 | 1 | 10 | | | | 380 | 1 |
| BF841 | NPN | 40 | 40 | 4 | 0.25 | 0.025 | 100 | 20 | 36 | 125 | 1 | 10 | | | | 380 | 1 |

¹h_{FE} ¹V_{CES} ²V_{CER} ³I_{CEX} ⁴MIN ⁵MAX

| Part # | Polarity | V _{CBO} (V) Min | V _{CEO} (V) Min | V _{EBO} (V) Min | P _D (W) | I _C (A) | I _{CBO} (uA) Max | @ V _{CB} (V) | h _{FE} Min | h _{FE} Max | @ I _C (A) | V _{CE} (V) | V _{CE(SAT)} (V) Max | V _{BE(SAT)} (V) Mn-Mx | @ I _C (mA) | f _T (MHz) | @ I _C (mA) |
|-----------|----------|--------------------------------|--------------------------------|--------------------------------|-----------------------|-----------------------|---------------------------------|--------------------------|------------------------|------------------------|-------------------------|------------------------|------------------------------------|--|--------------------------|-------------------------|--------------------------|
| CMBT918 | NPN | 30 | 15 | 3 | 0.225 | 0.35 | 50 | 15 | 20 | | 3 | 1 | 0.40 | - 1.00 ⁴ | 10 | - | 4 |
| CMBT2222A | NPN | 75 | 40 | 6 | 0.25 | 0.6 | 10 | 60 | 100 | 300 | 150 | 10 | 0.30 | 0.60 ⁴ 1.20 ⁵ | 150 | - | 20 |
| CMBT2907A | PNP | 60 | 60 | 5 | 0.25 | 0.6 | 10 | 50 | 100 | 300 | 150 | 10 | 0.40 | - 1.30 ⁵ | 150 | - | 50 |
| CMBT3904 | NPN | 60 | 40 | 6 | 0.25 | 0.2 | 50 ³ | 30 | 100 | 300 | 10 | 1 | 0.20 | 0.65 ⁴ 0.85 ⁵ | 10 | - | 10 |
| CMBT3906 | PNP | 40 | 40 | 5 | 0.25 | 0.2 | 50 ³ | 30 | 100 | 300 | 10 | 1 | 0.25 | 0.65 ⁴ 0.85 ⁵ | 10 | - | 10 |
| CMBT4401 | NPN | 60 | 40 | 6 | 0.25 | 0.6 | 100 ³ | 35 | 100 | 300 | 150 | 1 | 0.40 | 0.75 ⁴ 0.95 ⁵ | 150 | - | 20 |
| CMBT4403 | PNP | 40 | 40 | 5 | 0.25 | 0.6 | 100 ³ | 35 | 100 | 300 | 150 | 2 | 0.40 | 0.75 ⁴ 0.95 ⁵ | 150 | - | 20 |
| CMBT5401 | PNP | 160 | 150 | 5 | 0.25 | 0.5 | 50 | 120 | 60 | 240 | 10 | 5 | 0.20 | - 1.00 ⁵ | 10 | 300 ⁵ | 10 |
| CMBT5551 | NPN | 180 | 160 | 6 | 0.25 | 0.6 | 50 | 120 | 80 | 250 | 10 | 5 | 0.15 | - 1.00 ⁵ | 10 | 300 ⁵ | 10 |
| CMBTA05 | NPN | 60 | 60 | 4 | 0.25 | 0.5 | 100 | 60 | 100 | - | 100 | 1 | 0.25 | - | 100 | - | 10 |
| CMBTA06 | NPN | 80 | 80 | 4 | 0.25 | 0.5 | 100 | 80 | 100 | - | 100 | 1 | 0.25 | - | 100 | - | 10 |
| CMBTA13 | NPN | 30 | 30 ¹ | 10 | 0.25 | 0.3 | 100 | 30 | 10k | - | 100 | 5 | 1.50 | - | 100 | - | 10 |
| CMBTA14 | NPN | 30 | 30 ¹ | 10 | 0.25 | 0.3 | 100 | 30 | 20k | - | 100 | 5 | 1.50 | - | 100 | - | 10 |
| CMBTA42 | NPN | 300 | 300 | 6 | 0.25 | 0.5 | 100 | 200 | 40 | - | 10 | 10 | 0.50 | - 0.90 ⁵ | 20 | - | 10 |
| CMBTA55 | PNP | 60 | 60 | 4 | 0.25 | 0.5 | 100 | 60 | 100 | - | 100 | 1 | 0.25 | - | 100 | - | 100 |
| CMBTA56 | PNP | 80 | 80 | 4 | 0.25 | 0.5 | 100 | 80 | 100 | - | 100 | 1 | 0.25 | - | 100 | - | 100 |
| CMBTA92 | PNP | 300 | 300 | 5 | 0.25 | 0.5 | 250 | 200 | 40 | - | 10 | 10 | 0.50 | - 0.90 ⁵ | 20 | - | 10 |
| CMMT451 | NPN | 80 | 60 | 5 | 0.5 | 1.0 | 100 | 60 | 50 | 150 | 150 | 10 | 0.35 | - 1.10 ⁵ | 150 | - | 50 |
| CMMT491 | NPN | 80 | 60 | 5 | 0.5 | 1.0 | 100 | 60 | 100 | 300 | 500 | 5 | 0.25 | - | 500 | - | 50 |
| CMMT551 | PNP | 80 | 60 | 5 | 0.5 | 1.0 | 100 | 60 | 50 | 150 | 150 | 10 | 0.35 | - 1.10 ⁵ | 150 | - | 50 |
| CMMT591 | PNP | 80 | 60 | 5 | 0.5 | 1.0 | 100 | 60 | 100 | 300 | 500 | 5 | 0.30 | - | 500 | - | 50 |
| CSA1162GR | PNP | 50 | 50 | 5 | 0.15 | 0.15 | 100 | 50 | 200 | 400 | 2 | 6 | 0.30 | - | 100 | - | 1 |
| CSA1362GR | PNP | 15 | 15 | 5 | 0.2 | 0.80 | 100 | 15 | 200 | 400 | 100 | 1 | 0.25 | - | 400 | 120 ⁴ | 10 |
| CSC2712GR | NPN | 60 | 50 | 5 | 0.15 | 0.15 | 100 | 60 | 200 | 400 | 2 | 6 | 0.25 | - | 100 | - | 1 |
| CSD1306E | NPN | 30 | 15 | 5 | 0.2 | 0.70 | 100- 0 | 20 | 400 | 800 | 150 | 1 | 0.50 | - | 500 | 250 ⁴ | 150 |

¹I_{CEO} ²I_{CBO} ³V_{CES} ⁴I_{CER} ⁵f_T Typical Values