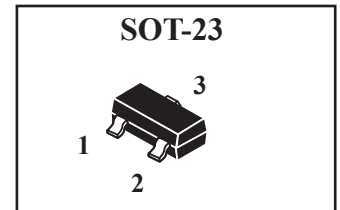
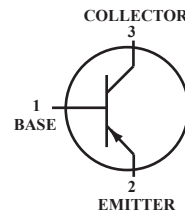


High-Voltage PNP Transistor Surface Mount

 Lead(Pb)-Free



Maximum Ratings

| Rating | Symbol | Value | Unit |
|------------------------------|------------------|-------|------|
| Collector-Emitter Voltage | V _{CEO} | -400 | Vdc |
| Collector-Base Voltage | V _{CBO} | -450 | Vdc |
| Emitter-Base Voltage | V _{EBO} | -6.0 | Vdc |
| Collector Current-Continuous | I _C | -300 | mAdc |

Thermal Characteristics

| Characteristics | Symbol | Max | Unit |
|---|-----------------------------------|-------------|-------------|
| Total Device Dissipation FR-5 Board ⁽¹⁾ T _A =25°C Derate above 25°C | P _D | 225 1.8 | mW mW/°C |
| Thermal Resistance, Junction to Ambient | R _{θA} | 556 | °C/W |
| Total Device Dissipation Alumina Substrate, ⁽²⁾ T _A =25°C Derate above 25°C | P _D | 350 2.8 | mW mW/°C |
| Thermal Resistance, Junction to Ambient | R _{θA} | 357 | °C/W |
| Junction and Storage, Temperature | T _J , T _{stg} | -55 to +150 | °C |

Device Marking

MMBTA94=4D

Electrical Characteristics (T_A=25°C Unless Otherwise noted)

| Characteristics | Symbol | Min | Max | Unit |
|-----------------|--------|-----|-----|------|
|-----------------|--------|-----|-----|------|

Off Characteristics

| | | | | |
|--|----------------------|------|-----|------|
| Collector-Emitter Breakdown Voltage ⁽³⁾ (I _C =-1.0mAdc, I _B =0) | V _{(BR)CEO} | -400 | - | Vdc |
| Collector-Base Breakdown Voltage (I _C =-100 uAdc, I _E =0) | V _{(BR)CBO} | -450 | - | Vdc |
| Emitter-Base Breakdown Voltage (I _E =-10 uAdc, I _C =0) | V _{(BR)EBO} | -6.0 | - | Vdc |
| Collect Cutoff Current (V _{CB} = -400Vdc, I _E =0) | I _{CBO} | - | 100 | nAdc |
| Emitte Cutoff Current (V _{EB} =-4V, I _C =0) | I _{EBO} | - | 100 | nAdc |

1.FR-5=1.0 x 0.75 x 0.062 in.

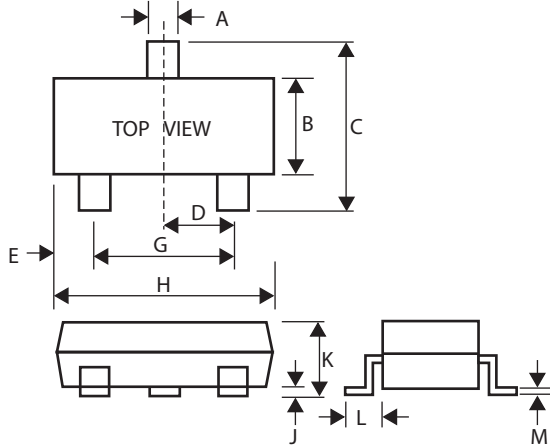
2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina.

3.Pulse Test:Pulse Width ≤300 μS, Duty Cycle ≤2.0%.

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted) (Continued)

| Characteristics | Symbol | Min | Max | Unit |
|---|---------------|-----|----------------------|------|
| On Characteristics | | | | |
| DC Current Gain ($I_C = -1.0\text{ mA dc}$, $V_{CE} = -10\text{ V dc}$) | $H_{FE(1)}$ | 40 | - | - |
| ($I_C = -10\text{ mA dc}$, $V_{CE} = -10\text{ V dc}$) | $H_{FE(2)}$ | 50 | 2.00 | - |
| ($I_C = -50\text{ mA dc}$, $V_{CE} = -10\text{ V dc}$) | $H_{FE(3)}$ | 45 | - | - |
| ($I_C = -100\text{ mA dc}$, $V_{CE} = -10\text{ V dc}$) | $H_{FE(4)}$ | 20 | . | - |
| Collector-Emitter Saturation Voltage (3) ($I_C = -1.0\text{ mA dc}$, $I_B = -0.1\text{ mA dc}$) ($I_C = -10\text{ mA dc}$, $I_B = -1.0\text{ mA dc}$) ($I_C = -50\text{ mA dc}$, $I_B = -5.0\text{ mA dc}$) | $V_{CE(sat)}$ | - | 0.40 0.50 0.75 | Vdc |
| Base-Emitter Saturation Voltage (3) ($I_C = -10\text{ mA dc}$, $I_B = -1.0\text{ mA dc}$) | $V_{BE(sat)}$ | - | 0.75 | Vdc |
| Current-Gain-Bandwidth Product ($I_C = 10\text{ mA dc}$, $V_{CE} = -10\text{ V dc}$, $f = 10\text{ MHz}$) | f_T | 20 | - | MHz |

SOT-23 Package Outline Dimension



| SOT-23 | | |
|--------|-------|------|
| Dim | Min | Max |
| A | 0.35 | 0.51 |
| B | 1.19 | 1.40 |
| C | 2.10 | 3.00 |
| D | 0.85 | 1.05 |
| E | 0.46 | 1.00 |
| G | 1.70 | 2.10 |
| H | 2.70 | 3.10 |
| J | 0.01 | 0.13 |
| K | 0.89 | 1.10 |
| L | 0.30 | 0.61 |
| M | 0.076 | 0.25 |