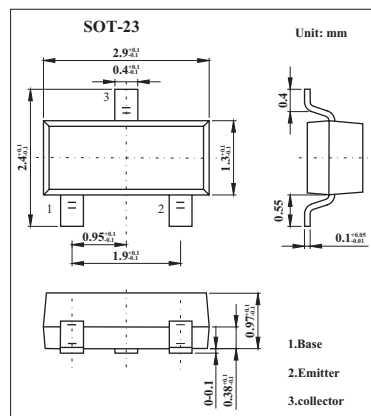
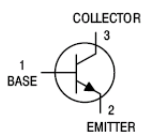


# MMBTA05, MMBTA06

■ Features

- Driver transistors.
- NPN silicon.



■ Absolute Maximum Ratings Ta = 25°C

| Parameter  | Symbol           | MMBTA05     | MMBTA06 | Unit  |
|--|------------------|-------------|---------|-------|
| Collector-emitter voltage  | V <sub>CEO</sub> | 60          | 80      | V     |
| Collector-base voltage   | V <sub>CBO</sub> | 60          | 80      | V     |
| Emitter-base voltage   | V <sub>EBO</sub> | 4.0         |         | V     |
| Collector current  | I <sub>c</sub>   | 500         |         | mA    |
| Total Device Dissipation FR-5 Board<br>(* 1) @T <sub>A</sub> = 25°C            | P <sub>D</sub>   | 225         |         | mW    |
| Derate above 25°C  |                  | 1.8         |         | mW/°C |
| Thermal Resistance, Junction-to-Ambient  | R <sub>θJA</sub> | 556         |         | °C/W  |
| Total Device Dissipation Alumina<br>Substrate, (* 2)<br>@T <sub>A</sub> = 25°C | P <sub>D</sub>   | 300         |         | mW    |
| Derate above 25°C  |                  | 2.4         |         | mW/°C |
| Thermal Resistance, Junction-to-Ambient  | R <sub>θJA</sub> | 417         |         | °C/W  |
| Junction temperature   | T <sub>j</sub>   | 150         |         | °C    |
| Storage temperature  | T <sub>stg</sub> | -55 to +150 |         | °C    |

\* 1. FR-5 = 1.0 X 0.75 X 0.062 in.

\* 2. Alumina = 0.4X 0.3 X 0.024 in. 99.5% alumina.

## MMBTA05, MMBTA06

### ■ Electrical Characteristics Ta = 25°C

| Parameter   | Symbol               | Testconditions   | Min | Typ | Max  | Unit |
|---|----------------------|--|-----|-----|------|------|
| Collector-emitter breakdown voltage* MMBTA05<br>MMBTA06 | V <sub>(BR)CEO</sub> | I <sub>C</sub> = 1.0 mA, I <sub>B</sub> = 0                  | 60  |     |      | V    |
|   |                      |  | 80  |     |      | V    |
| Emitter-base breakdown voltage                          | V <sub>(BR)EBO</sub> | I <sub>E</sub> = 100 μA, I <sub>C</sub> = 0                  | 4   |     |      | V    |
| Base cutoff current                                     | I <sub>CES</sub>     | V <sub>CE</sub> = 60 V, I <sub>B</sub> = 0                   |     |     | 0.1  | μA   |
| Collector cutoff current MMBTA05<br>MMBTA06             | I <sub>CBO</sub>     | V <sub>CB</sub> = 60 V, I <sub>E</sub> = 0                   |     |     | 0.1  | μA   |
|   |                      | V <sub>CB</sub> = 80 V, I <sub>E</sub> = 0                   |     |     | 0.1  | μA   |
| DC current gain   | H <sub>FE</sub>      | I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 1.0 V              | 100 |     |      |      |
|   |                      | I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 1.0 V             | 100 |     |      |      |
| Collector-emitter saturation voltage                    | V <sub>CE(sat)</sub> | I <sub>C</sub> = 100 mA, I <sub>B</sub> = 10 mA              |     |     | 0.25 | V    |
| Base-emitter saturation voltage                         | V <sub>BE(on)</sub>  | I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 1.0 V             |     |     | 1.2  | V    |
| Current-gain-bandwidth product                          | f <sub>T</sub>       | I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 2.0 V, f = 100 MHz | 100 |     |      | MHz  |

\* Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%.

### ■ hFE Classification

| TYPE    | MMBTA05 | MMBTA06 |
|---------|---------|---------|
| Marking | 1H      | 1GM     |