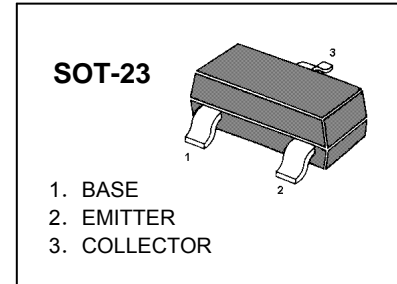


**MMBT4401 TRANSISTOR ( NPN)**
**FEATURES**

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (MMBT4403)
- Ideal for Medium Power Amplification and Switching

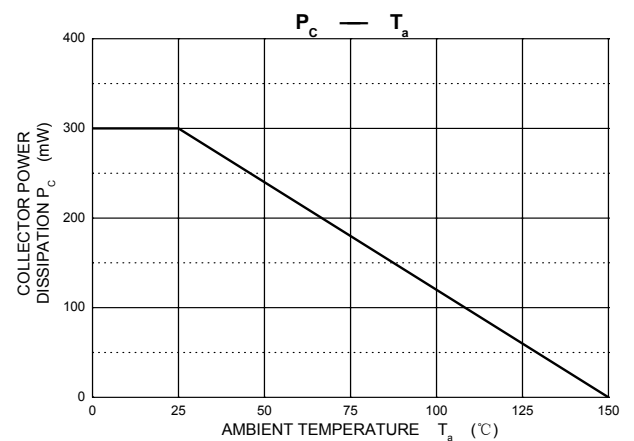
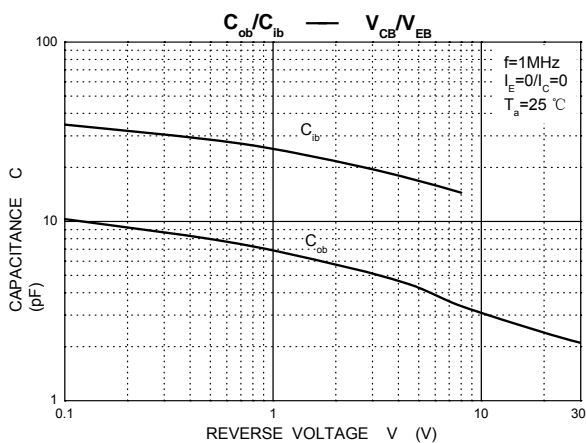
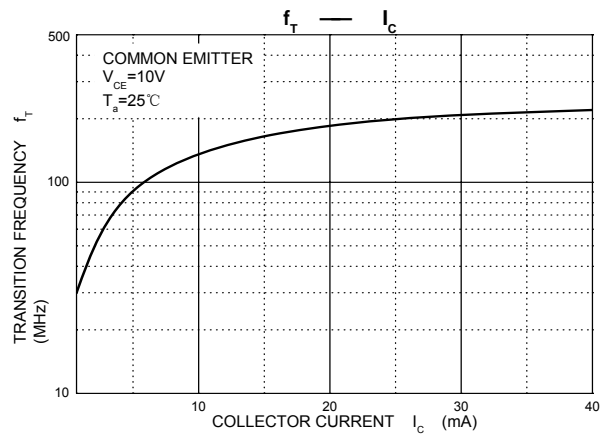
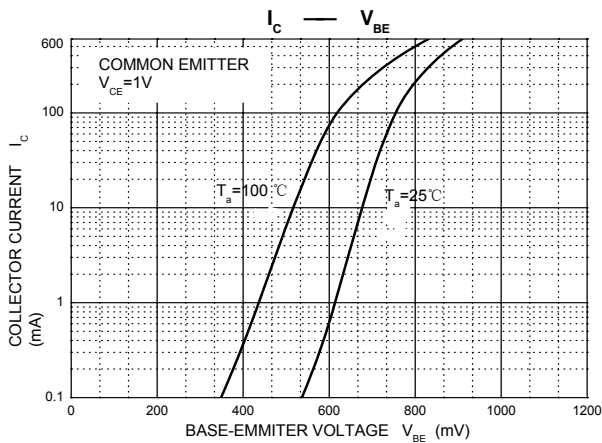
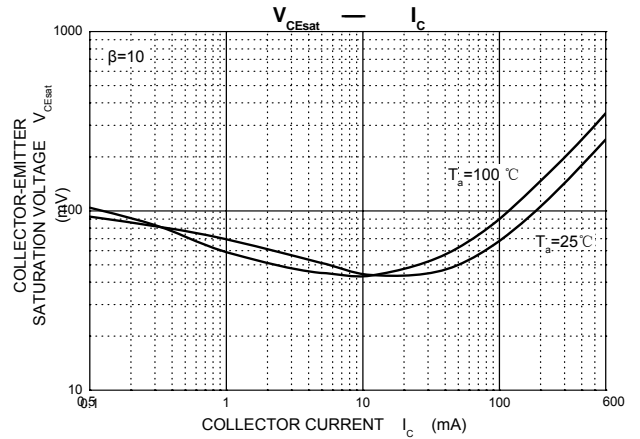
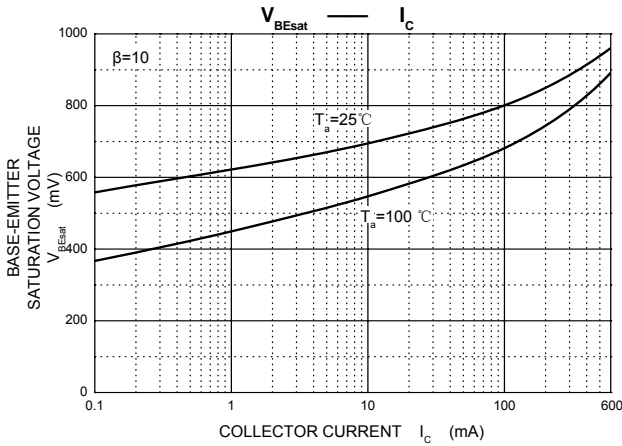
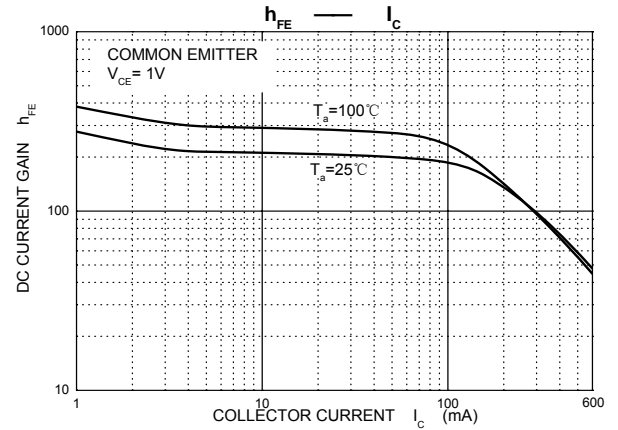
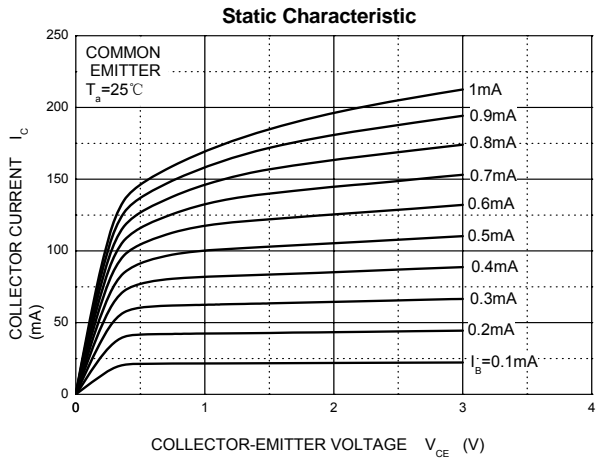

**MARKING: 2X**
**MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)**

| Symbol           | Parameter                               | Value       | Units |
|------------------|---|-------------|-------|
| V <sub>CB0</sub> | Collector-Base Voltage                  | 60          | V     |
| V <sub>CEO</sub> | Collector-Emitter Voltage               | 40          | V     |
| V <sub>EBO</sub> | Emitter-Base Voltage                    | 6           | V     |
| I <sub>C</sub>   | Collector Current -Continuous           | 600         | mA    |
| P <sub>C</sub>   | Collector Power dissipation             | 0.3         | W     |
| T <sub>j</sub>   | Junction Temperature                    | 150         | °C    |
| T <sub>stg</sub> | Storage Temperature                     | -55 to +150 | °C    |
| R <sub>θJA</sub> | Thermal Resistance, junction to Ambient | 417         | °C/mW |

**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)**

| Parameter                            | Symbol               | Test conditions  | MIN | MAX  | UNIT |
|--------------------------------------|----------------------|--|-----|------|------|
| Collector-base breakdown voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> = 100μA, I <sub>E</sub> =0                  | 60  |      | V    |
| Collector-emitter breakdown voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> = 1mA, I <sub>B</sub> =0                    | 40  |      | V    |
| Emitter-base breakdown voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> = 100μA, I <sub>C</sub> =0                  | 6   |      | V    |
| Collector cut-off current            | I <sub>CBO</sub>     | V <sub>CB</sub> =50 V, I <sub>E</sub> =0                   |     | 0.1  | μA   |
| Collector cut-off current            | I <sub>CEO</sub>     | V <sub>CE</sub> =30 V, I <sub>B</sub> =0                   |     | 0.1  | μA   |
| Emitter cut-off current              | I <sub>EBO</sub>     | V <sub>EB</sub> =5V, I <sub>C</sub> =0                     |     | 0.1  | μA   |
| DC current gain                      | h <sub>FE</sub>      | V <sub>CE</sub> =1V, I <sub>C</sub> =150mA                 | 100 | 300  |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =150mA, I <sub>B</sub> =15mA                |     | 0.4  | V    |
| Base-emitter saturation voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> = 150mA, I <sub>B</sub> =15mA               |     | 0.95 | V    |
| Transition frequency                 | f <sub>T</sub>       | V <sub>CE</sub> = 10V, I <sub>C</sub> = 20mA<br>f = 100MHz | 250 |      | MHz  |

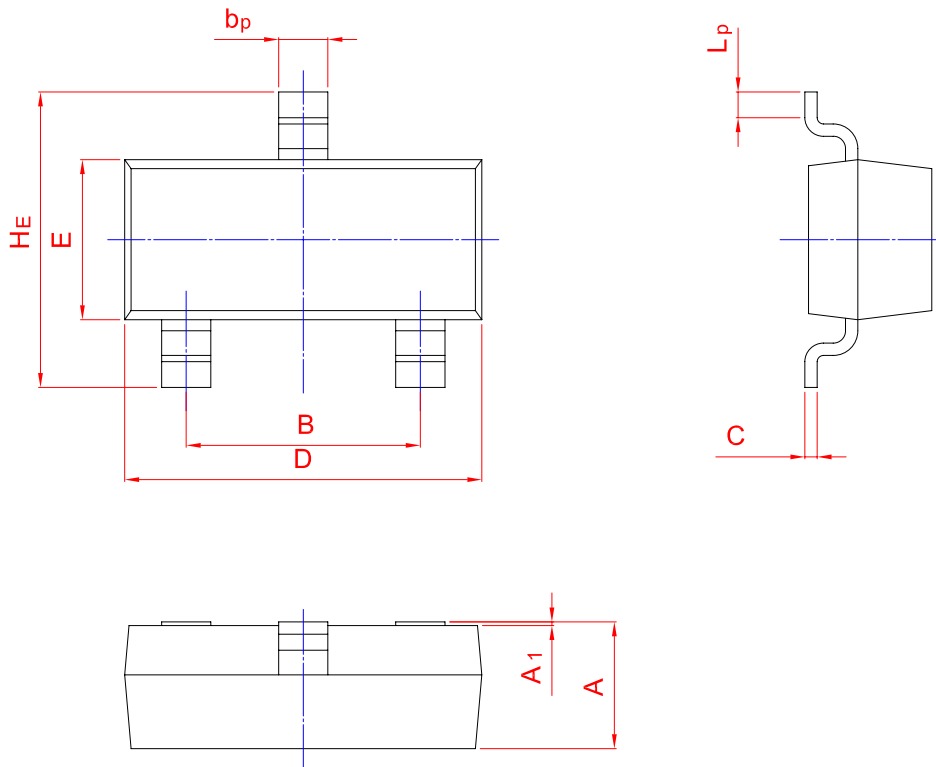
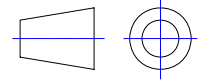
Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



| UNIT | A    | B    | $b_p$ | C    | D    | E    | $H_E$ | $A_1$ | $L_p$ |
|------|------|------|-------|------|------|------|-------|-------|-------|
| mm   | 1.40 | 2.04 | 0.50  | 0.19 | 3.10 | 1.65 | 3.00  | 0.100 | 0.50  |
|      | 0.95 | 1.78 | 0.35  | 0.08 | 2.70 | 1.20 | 2.20  | 0.013 | 0.20  |

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