

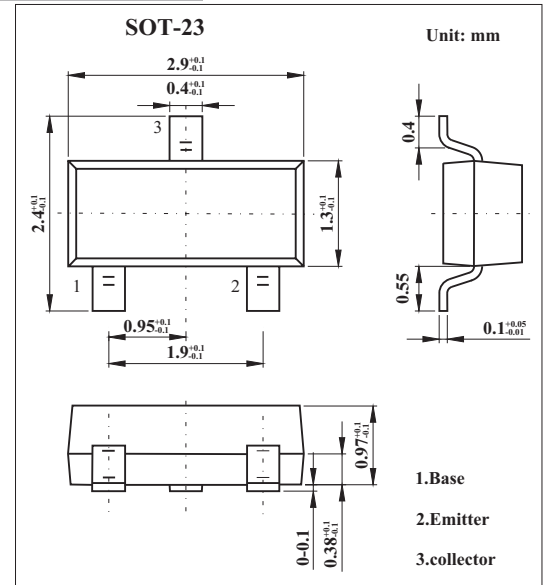
## SOT-23 Plastic-Encapsulate Transistors

### Features

- Switching transistors.

### MECHANICAL DATA

- Case style: SOT-23 molded plastic
- Mounting position: any



## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter                               | Symbol                            | Rating      | Unit |
|-----------------------------------------|-----------------------------------|-------------|------|
| Collector-base voltage                  | V <sub>CBO</sub>                  | 30          | V    |
| Collector-emitter voltage               | V <sub>CEO</sub>                  | 25          | V    |
| Emitter-base voltage                    | V <sub>EB0</sub>                  | 5           | V    |
| Collector current                       | I <sub>C</sub>                    | 200         | mA   |
| Power dissipation                       | P <sub>tot</sub>                  | 330         | mW   |
| Operating and storage temperature range | T <sub>j</sub> , T <sub>stg</sub> | -55 to +150 | °C   |

### PACKAGE INFORMATION

| Device   | Package | Shipping       |
|----------|---------|----------------|
| FMMT4124 | SOT-23  | 3000/Tape&Reel |

| Parameter                              | Symbol               | Test conditions                                                                                  | Min | Typ | Max  | Unit |
|----------------------------------------|----------------------|--------------------------------------------------------------------------------------------------|-----|-----|------|------|
| Collector-base breakdown voltage       | V <sub>(BR)CBO</sub> | I <sub>C</sub> =10mA                                                                             | 30  |     |      | V    |
| Collector-emitter breakdown voltage    | V <sub>(BR)CEO</sub> | I <sub>C</sub> =1mA                                                                              | 25  |     |      | V    |
| Emitter-base breakdown voltage         | V <sub>(BR)EBO</sub> | I <sub>E</sub> =10mA                                                                             | 5   |     |      | V    |
| Collector cutoff current               | I <sub>CBO</sub>     | V <sub>CE</sub> =20V                                                                             |     |     | 50   | nA   |
| Emitter cut-off current                | I <sub>EBO</sub>     | V <sub>EB</sub> =3V                                                                              |     |     | 50   | nA   |
| Collector-emitter saturation voltage * | V <sub>CE(sat)</sub> | I <sub>C</sub> =50mA, I <sub>B</sub> =5mA                                                        |     |     | 0.3  | V    |
| Base-emitter saturation voltage *      | V <sub>BE(sat)</sub> | I <sub>C</sub> =50mA, I <sub>B</sub> =5mA                                                        |     |     | 0.95 | V    |
| DC current gain *                      | h <sub>FE</sub>      | I <sub>C</sub> =2mA, V <sub>CE</sub> =1V                                                         | 120 |     | 360  |      |
| Current-gain-bandwidth product         | f <sub>T</sub>       | I <sub>C</sub> =10mA, V <sub>CE</sub> =20V f=100MHz                                              | 300 |     |      | MHz  |
| Output capacitance                     | C <sub>obo</sub>     | V <sub>CB</sub> =5V, I <sub>E</sub> =0, f=140KHz                                                 |     |     | 4    | pF   |
| Input capacitance                      | C <sub>ibo</sub>     | V <sub>BE</sub> =0.5V, I <sub>C</sub> =0, f=140KHz                                               |     |     | 8    | pF   |
| Noise figure                           | NF                   | V <sub>CE</sub> =5V I <sub>C</sub> =200mA, R <sub>g</sub> =2K?<br>f=30Hz to 15KHz at -3dB points |     |     | 6    | dB   |
| Small signal current transfer          | h <sub>fe</sub>      | I <sub>C</sub> =2mA, V <sub>CE</sub> =1V, f=1KHz                                                 | 120 | 480 |      |      |
| Delay time                             | t <sub>d</sub>       | V <sub>CC</sub> =3V, I <sub>C</sub> =10mA, I <sub>B1</sub> =1mA                                  |     |     | 24   | ns   |
| Rise time                              | t <sub>r</sub>       | V <sub>BE(off)</sub> =0.5V                                                                       |     |     | 13   | ns   |
| Storage time                           | t <sub>s</sub>       | V <sub>CC</sub> =3V, I <sub>C</sub> =10mA                                                        |     |     | 125  | ns   |
| Fall time                              | t <sub>f</sub>       | I <sub>B1</sub> = I <sub>B2</sub> =1mA                                                           |     |     | 11   | ns   |

\* Pulse test: t<sub>p</sub> ≤ 300 μs; d ≤ 0.02.

### Marking

|         |    |
|---------|----|
| Marking | ZC |
|---------|----|