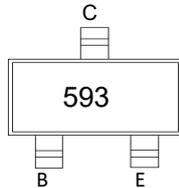
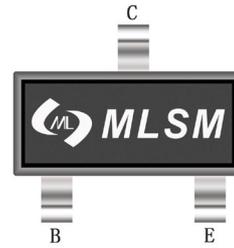


**Features**

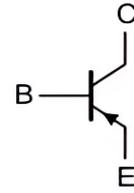
- Complementary Type FMMT493



Marking and pin assignment



SOT-23 top view



Schematic diagram



Pb-Free



Halogen-Free

**Maximum Ratings (T<sub>a</sub>=25°C unless otherwise noted)**

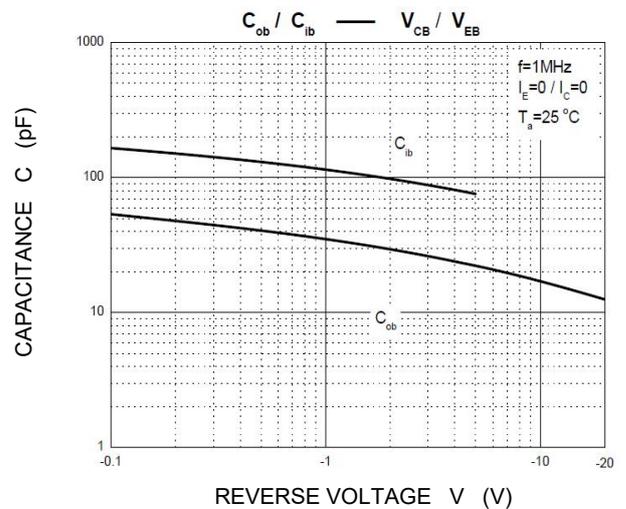
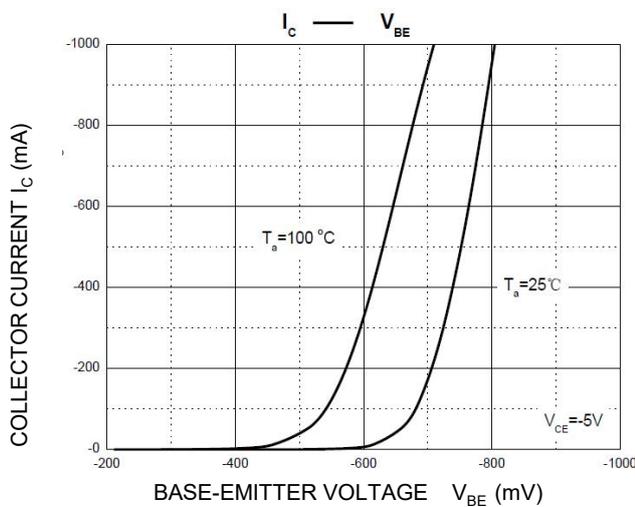
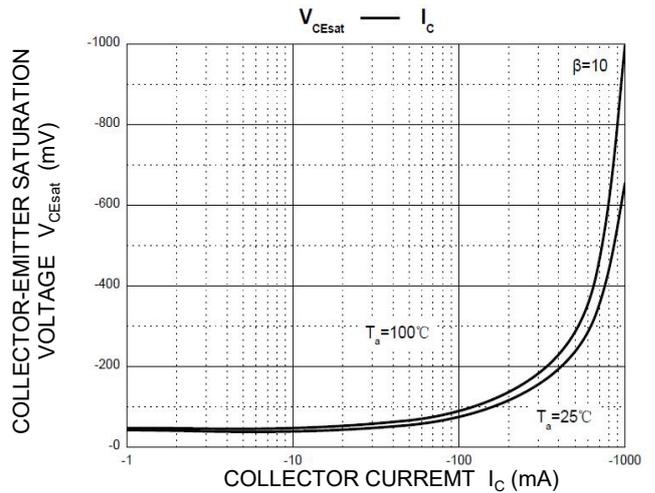
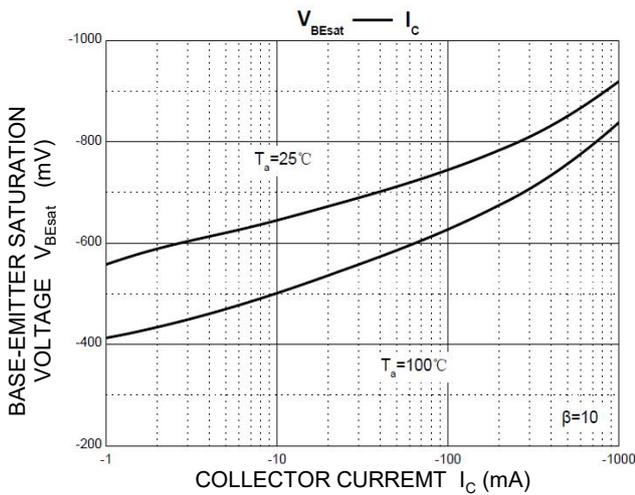
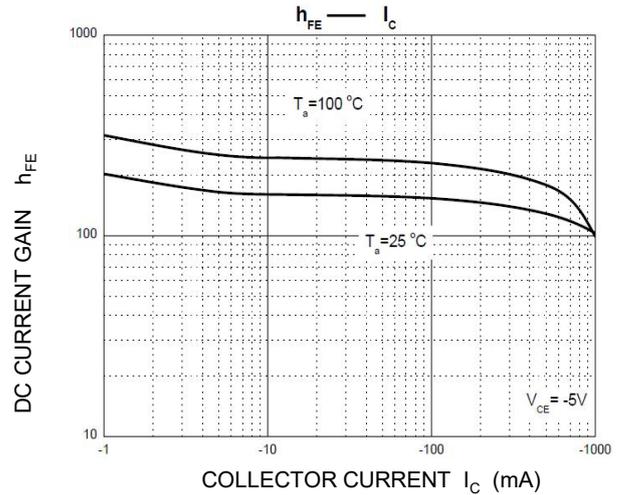
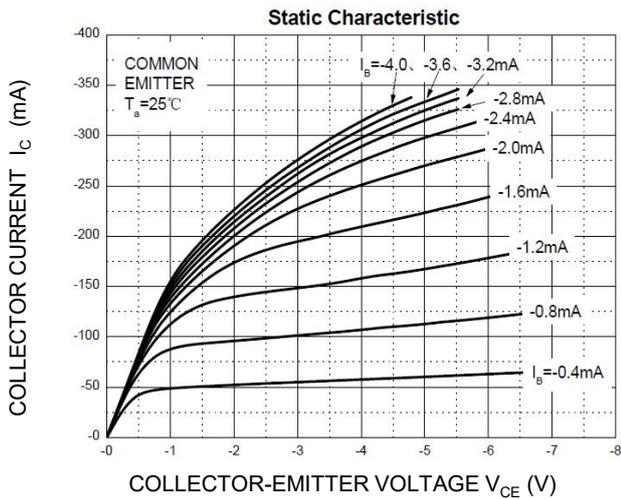
| Symbol                            | Parameter                               | Value     | Unit |
|-----------------------------------|---|-----------|------|
| V <sub>CB0</sub>                  | Collector-Base Voltage                  | -120      | V    |
| V <sub>CEO</sub>                  | Collector-Emitter Voltage               | -100      | V    |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                    | -5        | V    |
| I <sub>C</sub>                    | Collector Current -Continuous           | -1        | A    |
| P <sub>C</sub>                    | Collector Power Dissipation             | 250       | mW   |
| R <sub>θJA</sub>                  | Thermal Resistance Junction to Ambient  | 500       | °C/W |
| T <sub>J</sub> , T <sub>STG</sub> | Operating and Storage Temperature Range | -55~ +150 | °C   |

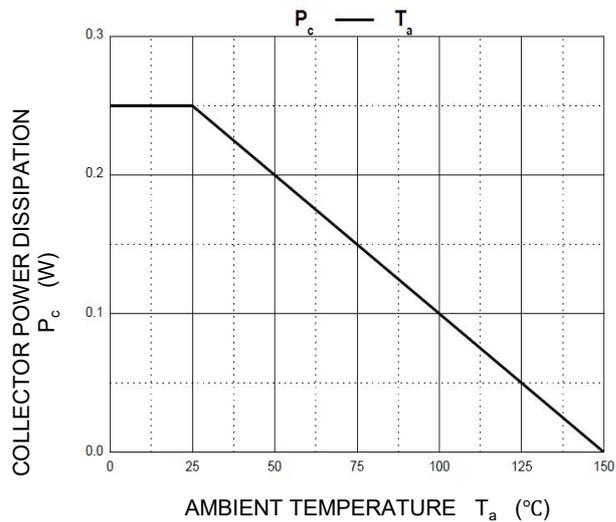
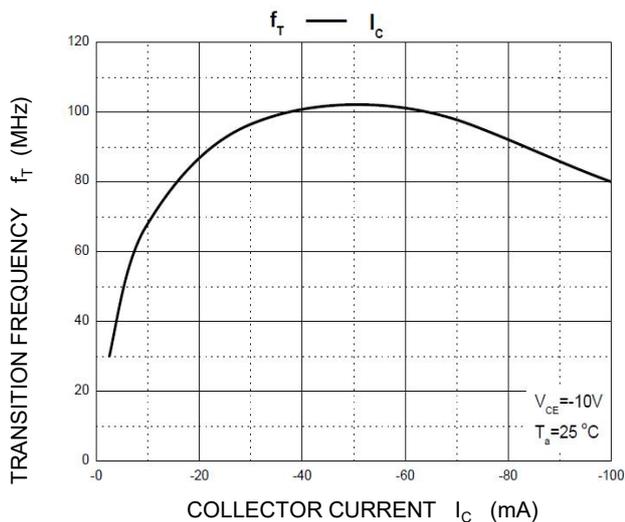
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

| Symbol                  | Parameter                            | Test conditions  | Min  | Typ | Max  | Unit |
|-------------------------|--------------------------------------|--|------|-----|------|------|
| V <sub>(BR)CBO</sub>    | Collector-base breakdown voltage     | I <sub>C</sub> =-100μA, I <sub>E</sub> =0              | -120 | --  | --   | V    |
| V <sub>(BR)CEO</sub>    | Collector-emitter breakdown voltage  | I <sub>C</sub> =-10mA, I <sub>B</sub> =0               | -100 | --  | --   | V    |
| V <sub>(BR)EBO</sub>    | Emitter-base breakdown voltage       | I <sub>E</sub> =-100μA, I <sub>C</sub> =0              | -5   | --  | --   | V    |
| I <sub>CB0</sub>        | Collector cut-off current            | V <sub>CB</sub> =-100V, I <sub>E</sub> =0              | --   | --  | -0.1 | μA   |
| I <sub>EBO</sub>        | Emitter cut-off current              | V <sub>EB</sub> =-4V, I <sub>C</sub> =0                | --   | --  | -0.1 | μA   |
| I <sub>CES</sub>        | Collector cut-off current            | V <sub>CES</sub> =-100V, I <sub>E</sub> =0             | --   | --  | -0.1 | μA   |
| h <sub>FE1</sub> *      | DC current gain                      | V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA             | 100  | --  | --   |      |
| h <sub>FE2</sub> *      |                                      | V <sub>CE</sub> =-5V, I <sub>C</sub> =-250mA           | 100  | --  | --   |      |
| h <sub>FE3</sub> *      |                                      | V <sub>CE</sub> =-5V, I <sub>C</sub> =0.5A             | 100  | --  | 300  |      |
| h <sub>FE4</sub> *      |                                      | V <sub>CE</sub> =-5V, I <sub>C</sub> =1A               | 50   | --  | --   |      |
| V <sub>CE(sat)1</sub> * | Collector-emitter saturation voltage | I <sub>C</sub> =-250mA, I <sub>B</sub> =-25mA          | --   | --  | -0.2 | V    |
| V <sub>CE(sat)2</sub> * |                                      | I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA          | --   | --  | -0.3 | V    |
| V <sub>BE(sat)</sub> *  | Base-emitter saturation voltage      | I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA          | --   | --  | -1.1 | V    |
| V <sub>BE</sub> *       | Base-emitter voltage                 | V <sub>CE</sub> =-5V, I <sub>C</sub> =-1A              | --   | --  | -1   | V    |
| f <sub>T</sub>          | Transition frequency                 | V <sub>CE</sub> =-10V, I <sub>C</sub> =-50mA, f=100MHz | 50   | --  | --   | MHz  |
| C <sub>ob</sub>         | Collector output capacitance         | V <sub>CE</sub> =-10V, I <sub>C</sub> =-50mA, f=100MHz | --   | 5   | --   | pF   |

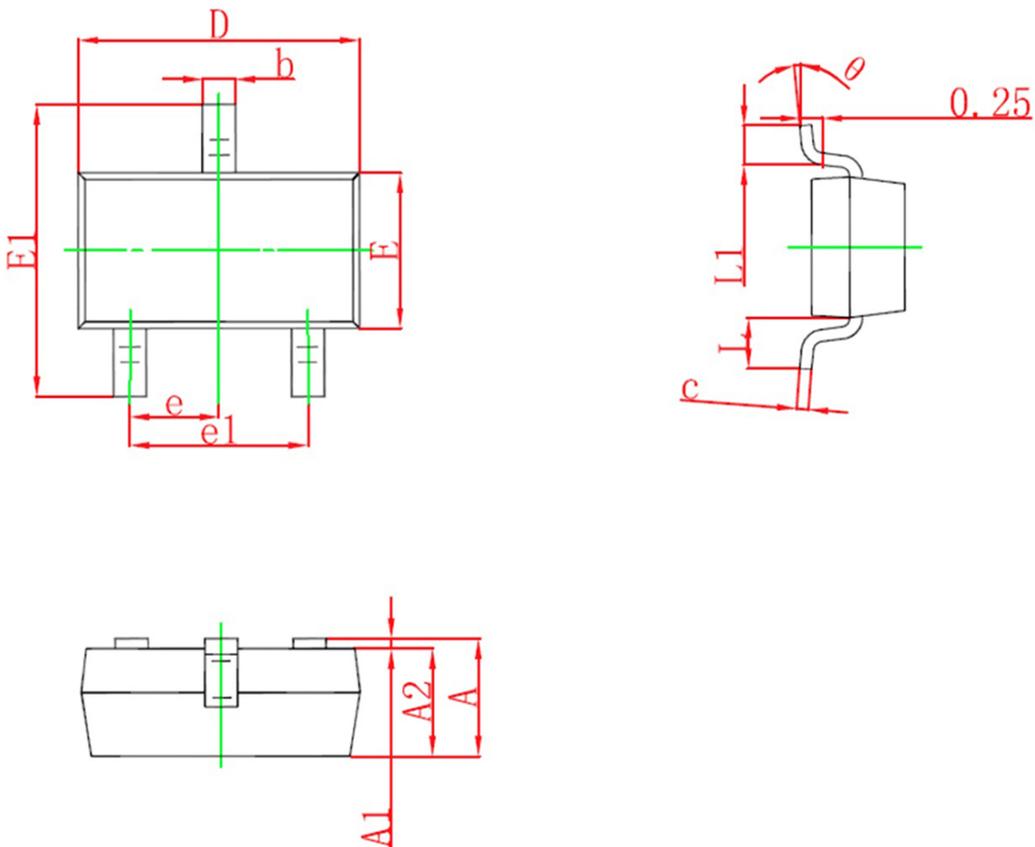
\*Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

**Typical Operating Characteristics**




**Ordering Information (Example)**

| Type    | Package | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|---------|---------|---------|----------------------|-------------------------|----------------------------|---------------|
| FMMT593 | SOT-23  | 593     | 3,000                | 45,000                  | 180,000                    | 7"reel        |

**SOT-23 Package information**


| Symbol   | Dimensions in Millimeters(mm) |       | Dimensions In Inches |       |
|----------|-------------------------------|-------|----------------------|-------|
|          | Min                           | Max   | Min                  | Max   |
| A        | 0.900                         | 1.150 | 0.035                | 0.045 |
| A1       | 0.000                         | 0.100 | 0.000                | 0.004 |
| A2       | 0.900                         | 1.050 | 0.035                | 0.041 |
| b        | 0.300                         | 0.500 | 0.012                | 0.020 |
| c        | 0.080                         | 0.150 | 0.003                | 0.006 |
| D        | 2.800                         | 3.000 | 0.110                | 0.118 |
| E1       | 2.250                         | 2.550 | 0.088                | 0.100 |
| E        | 1.200                         | 1.400 | 0.047                | 0.055 |
| e        | 0.950TYP                      |       | 0.037TYP             |       |
| e1       | 1.800                         | 2.000 | 0.071                | 0.079 |
| L        | 0.550 REF                     |       | 0.022 REF            |       |
| L1       | 0.300                         | 0.500 | 0.012                | 0.020 |
| $\theta$ | 0°                            | 8°    | 0°                   | 8°    |