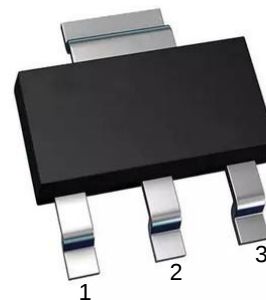


## SOT-223 Plastic-Encapsulate Transistors

**BCP51** TRANSISTOR (PNP)

### • Features

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCP54



1. BASE  
2.COLLECTOR  
3.EMITTER

**SOT-223**

### • MAXIMUM RATINGS (T<sub>C</sub>=25°C)

| Parameter                                        | Symbol                            | Limit    | Unit |
|--------------------------------------------------|-----------------------------------|----------|------|
| Collector-Base Voltage                           | V <sub>CBO</sub>                  | -45      | V    |
| Collector-Emitter Voltage                        | V <sub>CEO</sub>                  | -45      | V    |
| Emitter-Base Voltage                             | V <sub>EBO</sub>                  | -5       | V    |
| Collector Current                                | I <sub>C</sub>                    | -1       | A    |
| Peak Pulse Collector Current                     | I <sub>CM</sub>                   | -2       | A    |
| Collector Power Dissipation                      | P <sub>C</sub>                    | 1.5      | W    |
| Thermal Resistance From Junction To Ambient      | R <sub>θJA</sub>                  | 94       | °C/W |
| Operation Junction and Storage Temperature Range | T <sub>J</sub> , T <sub>stg</sub> | -55~+150 | °C   |

### • ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C)

| Parameter                            | Symbol               | Test conditions                                        | Min | Max  | Unit |
|--------------------------------------|----------------------|--------------------------------------------------------|-----|------|------|
| Collector-base breakdown voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> = -0.1mA, I <sub>E</sub> =0             | -45 |      | V    |
| Collector-emitter breakdown voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> = -10mA, I <sub>B</sub> =0              | -45 |      | V    |
| Base-emitter breakdown voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> = -10μA, I <sub>C</sub> =0              | -5  |      | V    |
| Collector cut-off current            | I <sub>CBO</sub>     | V <sub>CB</sub> = -30 V, I <sub>E</sub> =0             |     | -100 | nA   |
| DC current gain                      | h <sub>FE(1)</sub>   | V <sub>CE</sub> =-2V, I <sub>C</sub> =-5mA             | 25  |      |      |
|                                      | h <sub>FE(2)</sub>   | V <sub>CE</sub> = -2V, I <sub>C</sub> =-150m A         | 63  | 250  |      |
|                                      | h <sub>FE(3)</sub>   | V <sub>CE</sub> = -2V, I <sub>C</sub> =-500m A         | 25  |      |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA          |     | -0.5 | V    |
| Base-emitter voltage                 | V <sub>BE</sub>      | V <sub>CE</sub> =-2V, I <sub>C</sub> =-500m A          |     | -1   | V    |
| Transition frequency                 | f <sub>T</sub>       | V <sub>CE</sub> =-10V, I <sub>C</sub> =-50mA, f=100MHz | 100 |      | MHz  |

### • CLASSIFICATION OF h<sub>FE(1)</sub>

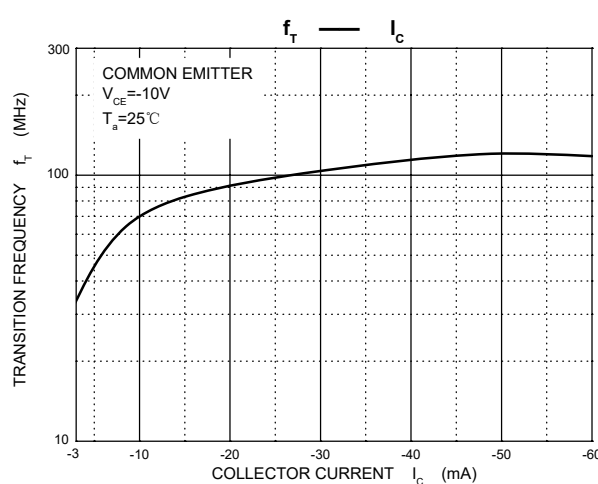
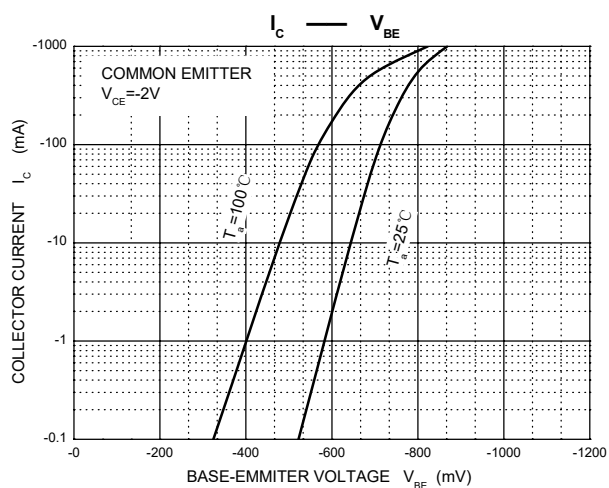
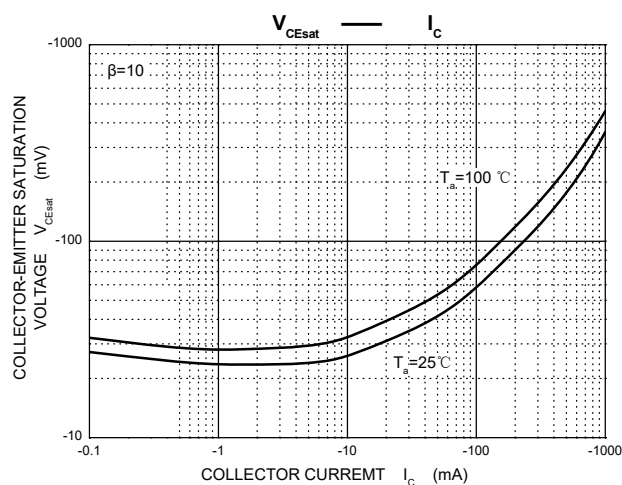
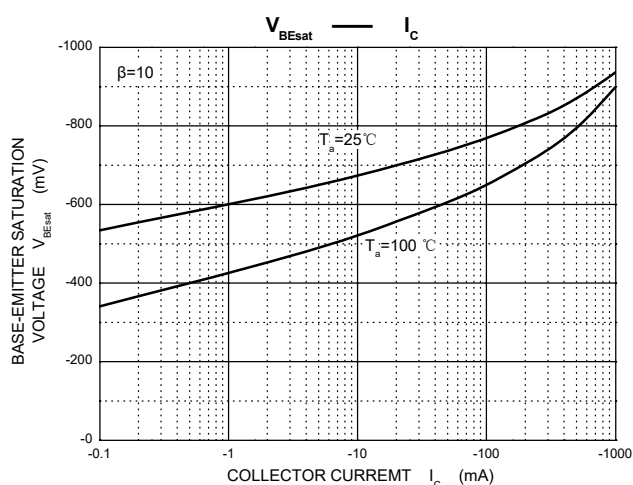
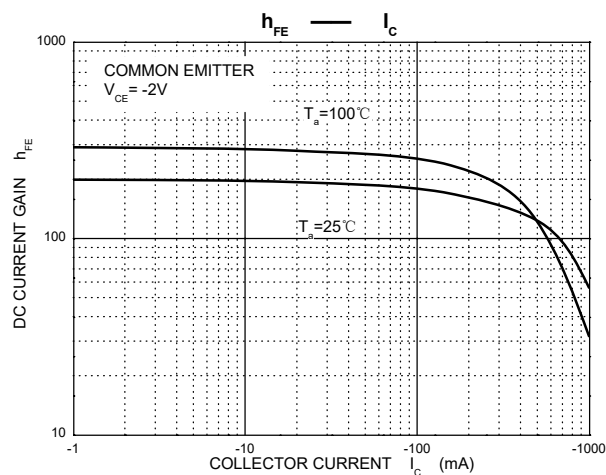
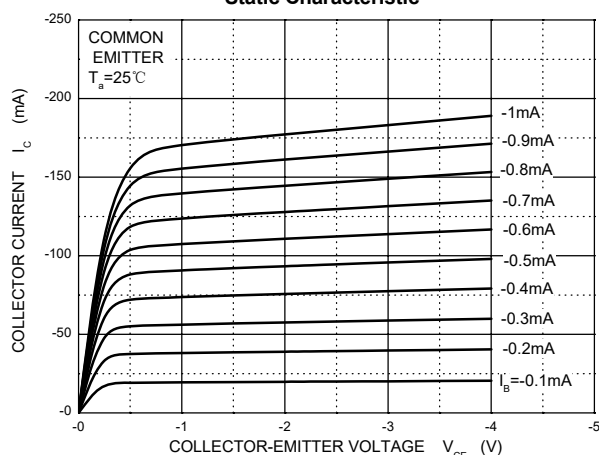
| Rank  | BCP51  | BCP51-10 | BCP51-16 |
|-------|--------|----------|----------|
| Range | 63-250 | 63-160   | 100-250  |

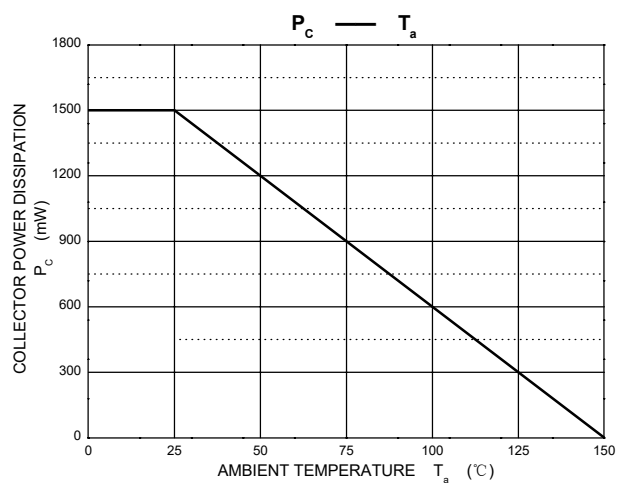
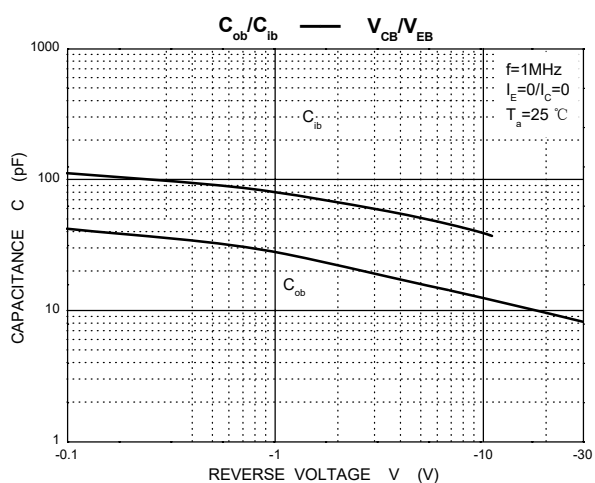
## • Ordering Information:

|                           |                         |
|---------------------------|-------------------------|
| Part NO.                  | BCP51                   |
| Marking                   | BCP51/BCP51-10/BCP51-16 |
| Packing Information       | REEL TAPE               |
| Basic ordering unit (pcs) | 1000                    |

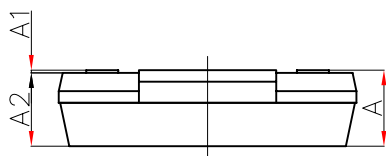
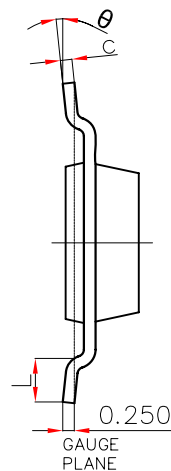
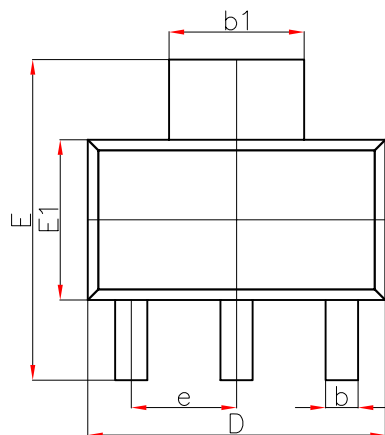
## • Typical Characteristics

Static Characteristic

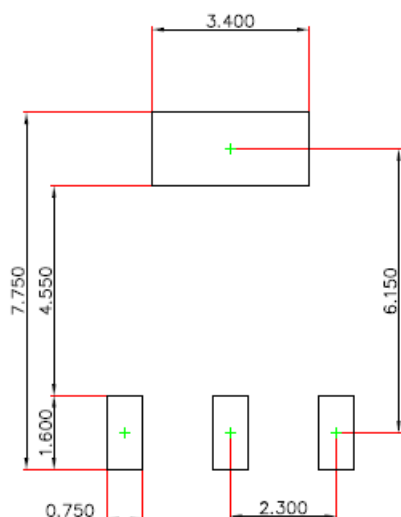




## SOT-223 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | —                         | 1.800 | —                    | 0.071 |
| A1     | 0.020                     | 0.100 | 0.001                | 0.004 |
| A2     | 1.500                     | 1.700 | 0.059                | 0.067 |
| b      | 0.660                     | 0.840 | 0.026                | 0.033 |
| b1     | 2.900                     | 3.100 | 0.114                | 0.122 |
| c      | 0.230                     | 0.350 | 0.009                | 0.014 |
| D      | 6.300                     | 6.700 | 0.248                | 0.264 |
| E      | 6.700                     | 7.300 | 0.264                | 0.287 |
| E1     | 3.300                     | 3.700 | 0.130                | 0.146 |
| e      | 2.300(BSC)                |       | 0.091(BSC)           |       |
| L      | 0.750                     | —     | 0.030                | —     |
| θ      | 0°                        | 10°   | 0°                   | 10°   |



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.050\text{mm}$ .
3. The pad layout is for reference purposes only.