

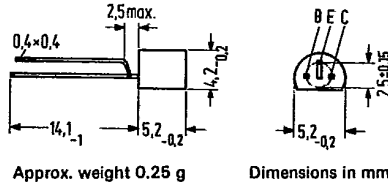
**NPN Silicon RF Transistor**

**BF 507**

SIEMENS AKTIENGESELLSCHAFT 04513 D

BF 507 is an NPN silicon planar RF transistor in TO 92 plastic package (10 A 3 DIN 41868). The transistor is particularly intended for use in VHF amplifiers, VHF mixers and VHF/UHF oscillators.

| Type   | Ordering code |
|--------|---------------|
| BF 507 | Q62702-F571   |



Approx. weight 0.25 g

Dimensions in mm

**Maximum ratings ( $T_{amb} = 25^\circ\text{C}$ )**

|                           |           |             |                  |
|---------------------------|-----------|-------------|------------------|
| Collector-emitter voltage | $V_{CE0}$ | 25          | V                |
| Collector-base voltage    | $V_{CBO}$ | 30          | V                |
| Emitter-base voltage      | $V_{EBO}$ | 3           | V                |
| Collector current         | $I_C$     | 20          | mA               |
| Collector peak current    | $I_{CM}$  | 50          | mA               |
| Base current              | $I_B$     | 5           | mA               |
| Junction temperature      | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature range | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |
| Total power dissipation   | $P_{tot}$ | 500         | mW               |

**Thermal resistance**

|                         |            |            |     |
|-------------------------|------------|------------|-----|
| Junction to ambient air | $R_{thJA}$ | $\leq 250$ | K/W |
|-------------------------|------------|------------|-----|

**Static characteristics ( $T_{amb} = 25^{\circ}\text{C}$ )**

|  |               |             |    |
|--|---------------|-------------|----|
| Collector cutoff current<br>( $V_{CBO} = 25\text{ V}$ )                              | $I_{CBO}$     | $\leq 100$  | nA |
| Collector-emitter breakdown voltage<br>( $I_C = 1\text{ mA}$ )                       | $V_{(BR)CEO}$ | $\geq 25$   | V  |
| Collector-base breakdown voltage<br>( $I_C = 10\text{ }\mu\text{A}$ )                | $V_{(BR)CBO}$ | $\geq 30$   | V  |
| Emitter-base breakdown voltage<br>( $I_E = 10\text{ }\mu\text{A}$ )                  | $V_{(BR)EBO}$ | $\geq 3$    | V  |
| DC current gain<br>( $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$ )                     | $h_{FE}$      | $\geq 30$   | -  |
| ( $I_C = 5\text{ mA}; V_{CE} = 10\text{ V}$ )  | $h_{FE}$      | $\geq 40$   | -  |
| Base-emitter voltage<br>( $I_C = 5\text{ mA}; V_{CE} = 10\text{ V}$ )                | $V_{BE}$      | $\leq 0.95$ | V  |
| Collector-emitter saturation voltage<br>( $I_C = 5\text{ mA}; I_B = 0.5\text{ mA}$ ) | $V_{CEsat}$   | $\leq 0.6$  | V  |

**Dynamic characteristics ( $T_{amb} = 25^{\circ}\text{C}$ )**

|  |          |              |     |
|--|----------|--------------|-----|
| Transition frequency<br>( $I_C = 5\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$ )                        | $f_T$    | $\geq 750$   | MHz |
| Noise figure<br>( $I_C = 3\text{ mA}; V_{CE} = 10\text{ V}; f = 200\text{ MHz}; R_g = 60\text{ }\Omega$ )        | $NF$     | 3            | dB  |
| Collector-base capacitance<br>( $f = 1\text{ MHz}; V_{BE} = 0\text{ V}$ ) <sup>1)</sup>                          | $C_{CB}$ | $\leq 0.75$  | pF  |
| Collector-emitter capacitance<br>( $f = 1\text{ MHz}; V_{CB} = 10\text{ V}; V_{BE} = 0\text{ V}$ ) <sup>1)</sup> | $C_{CE}$ | 0.35 to 0.65 | pF  |

<sup>1)</sup> Third terminal at screening potential