

## SMD Type

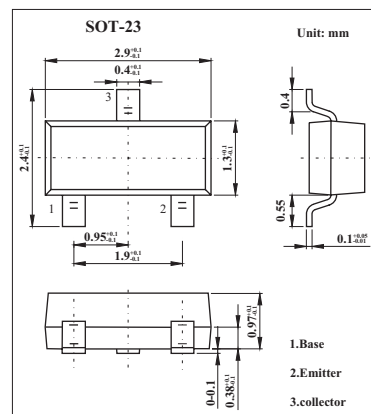
## Transistors

## NPN Medium Frequency Transistor

### KFS20(BFS20)

#### ■ Features

- Low current (max. 25 mA)
- Low voltage (max. 20 V)
- Very low feedback capacitance (typ. 350 fF).



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                                     | Symbol        | Rating      | Unit             |
|-----------------------------------------------|---------------|-------------|------------------|
| Collector-base voltage                        | $V_{CB0}$     | 30          | V                |
| Collector-emitter voltage                     | $V_{CE0}$     | 20          | V                |
| Emitter-base voltage                          | $V_{EB0}$     | 4           | V                |
| Collector current                             | $I_C$         | 25          | mA               |
| Peak collector current                        | $I_{CM}$      | 25          | mA               |
| power dissipation                             | $P_D$         | 250         | mW               |
| Thermal resistance from junction to ambient * | $R_{th\ j-a}$ | 500         | K/W              |
| Junction temperature                          | $T_j$         | 150         | $^\circ\text{C}$ |
| Storage temperature                           | $T_{stg}$     | -65 to +150 | $^\circ\text{C}$ |

\* Transistor mounted on an FR4 printed-circuit board.

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                | Symbol    | Testconditons                                                    | Min | Typ | Max | Unit           |
|--------------------------|-----------|------------------------------------------------------------------|-----|-----|-----|----------------|
| Collector cutoff current | $I_{CBO}$ | $I_E = 0; V_{CB} = 20\text{ V}$                                  |     |     | 100 | nA             |
|                          | $I_{CBO}$ | $I_E = 0; V_{CB} = 20\text{ V}; T_j = 100\text{ }^\circ\text{C}$ |     |     | 10  | $\mu\text{ A}$ |
| Emitter cutoff current   | $I_{EBO}$ | $I_C = 0; V_{EB} = 4\text{ V}$                                   |     |     | 100 | nA             |
| DC current gain          | $h_{FE}$  | $I_C = 7\text{ mA}; V_{CE} = 10\text{ V}$                        | 40  | 85  |     |                |
| Base to emitter voltage  | $V_{BE}$  | $I_C = 7\text{ mA}; V_{CE} = 10\text{ V}$                        |     | 740 | 900 | mV             |
| Collector capacitance    | $C_C$     | $I_E = I_C = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$          |     | 1   |     | pF             |
| Feedback capacitance     | $C_{re}$  | $I_C = 0, V_{CB} = 10\text{ V}, f = 1\text{ MHz}$                |     | 350 |     | pF             |
| Transition frequency     | $f_T$     | $I_C = 5\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$    | 275 | 450 |     | MHz            |

#### ■ Marking

|         |    |
|---------|----|
| Marking | G1 |
|---------|----|