

NPN Transistors

2KC1101

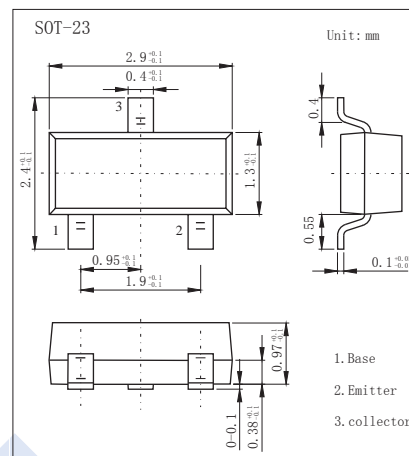
■ Features

- Low noise and high gain.

NF = 1.1 dB Typ., Ga = 11 dB Typ. @V_{CE} = 10 V, I_C = 7 mA, f = 1.0 GHz

- High power gain.

MAG = 13 dB Typ. @V_{CE} = 10 V, I_C = 20 mA, f = 1.0 GHz



■ Absolute Maximum Ratings Ta = 25°C

| Parameter | Symbol | Rating | Unit |
|------------------------------|------------------|-------------|------|
| Collector to base voltage | V _{CBO} | 20 | V |
| Collector to emitter voltage | V _{CEO} | 12 | V |
| Emitter to base voltage | V _{EBO} | 3.0 | V |
| Collector current (DC) | I _C | 100 | mA |
| Total power dissipation | P _{tot} | 200 | mW |
| Junction temperature | T _j | 150 | °C |
| Storage temperature range | T _{stg} | -65 to +150 | °C |

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|---------------------------------|---|-----|------|-----|------|
| Collector- base breakdown voltage | V _{CBO} | I _C = 100 μA, I _E = 0 | 20 | | | V |
| Collector- emitter breakdown voltage | V _{CEO} | I _C = 1 mA, I _B = 0 | 12 | | | |
| Emitter - base breakdown voltage | V _{EBO} | I _E = 100 uA, I _C = 0 | 3 | | | |
| Collector-base cut-off current | I _{CBO} | V _{CB} = 10 V, I _E = 0 | | | 1 | uA |
| Emitter cut-off current | I _{EBO} | V _{EB} = 3V, I _C =0 | | | 1 | |
| Collector-emitter saturation voltage * | V _{CE(sat)} | I _C =50 mA, I _B =5mA | | | 0.4 | V |
| Base - emitter saturation voltage * | V _{BE(sat)} | I _C =50 mA, I _B =5mA | | | 1.2 | |
| DC current gain * | h _{FE} | V _{CE} = 10V, I _C = 20mA | 125 | | 250 | |
| Insertion power gain | S _{21e} ² | V _{CE} = 10 V, I _C = 20 mA, f= 1GHz | | 11.5 | | dB |
| Noise figure | NF | V _{CE} = 10 V, I _C = 7 mA, f= 1GHz | | 1.1 | 2 | |
| Reverse transfer capacitance | C _{re} | V _{CB} = 10V, I _E = 0, f=1MHz | | 0.55 | 1 | pF |
| Transition frequency | f _t | V _{CE} = 10V, I _C = 20mA | | 7 | | GHz |

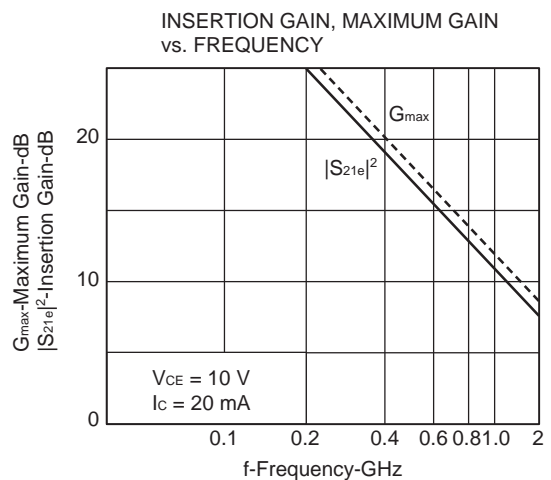
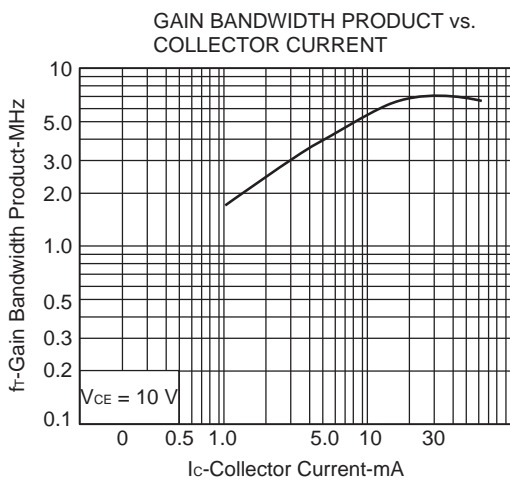
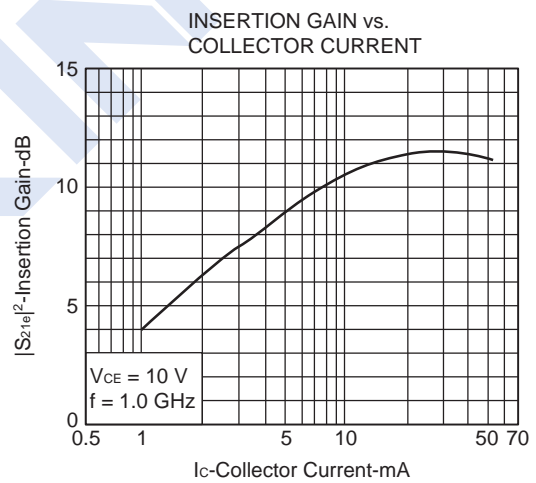
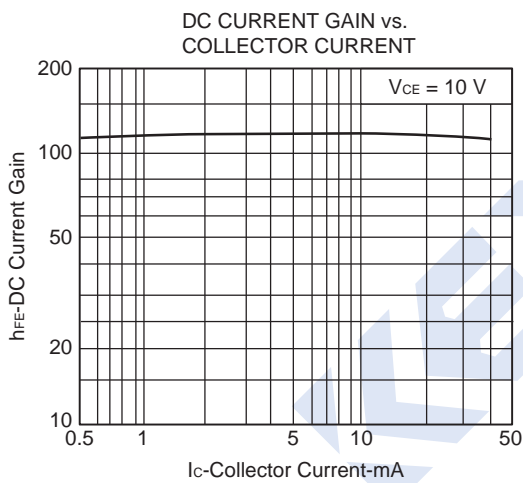
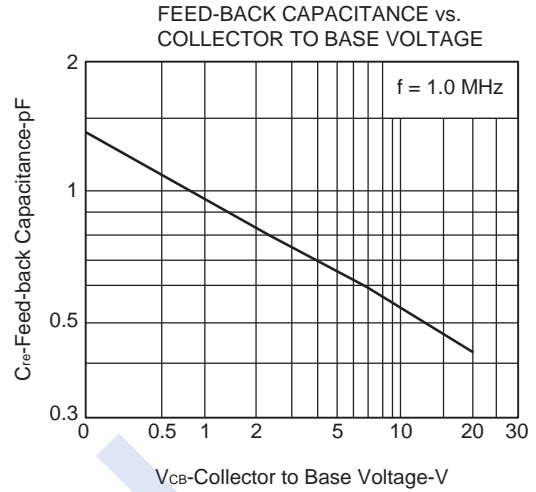
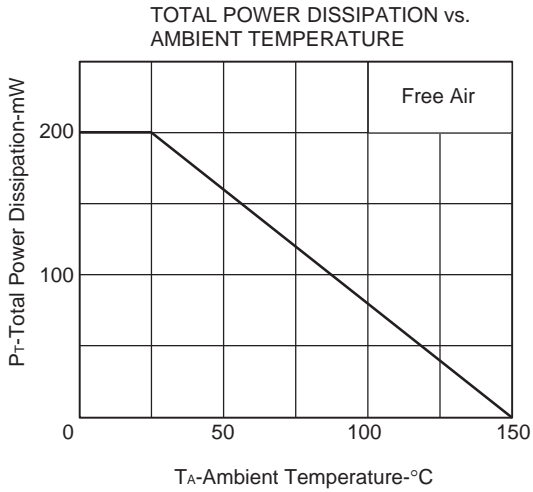
*. Pulse measurement: PW ≤ 350 μs, Duty Cycle ≤ 2%.

■ Marking

| | |
|---------|-----|
| Marking | R01 |
|---------|-----|

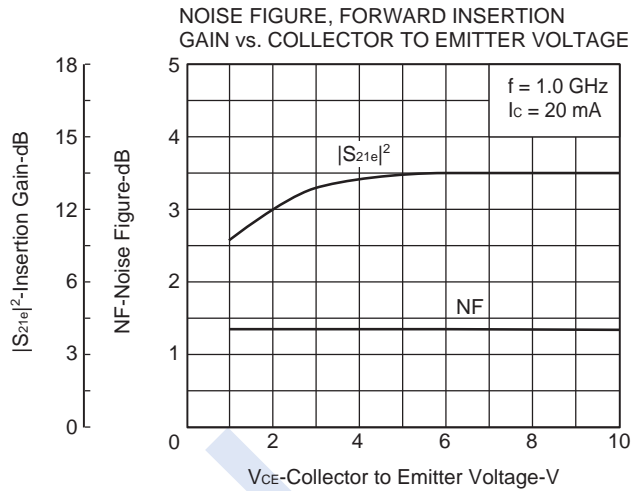
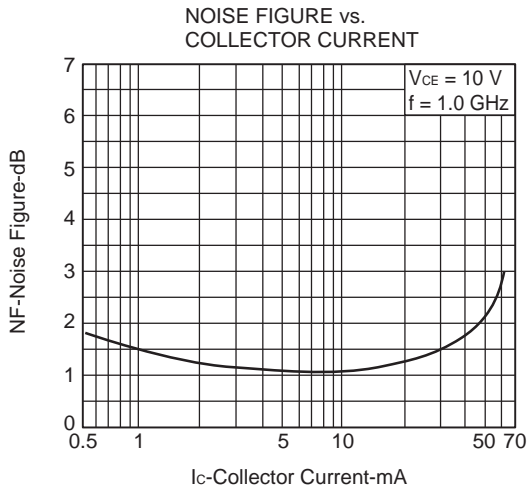
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Typical Characteristics

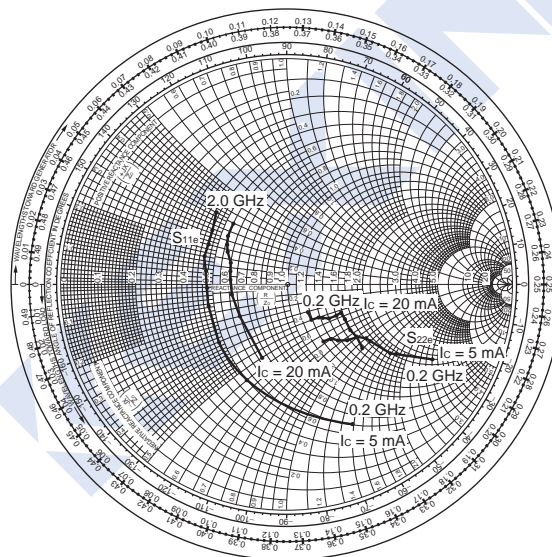


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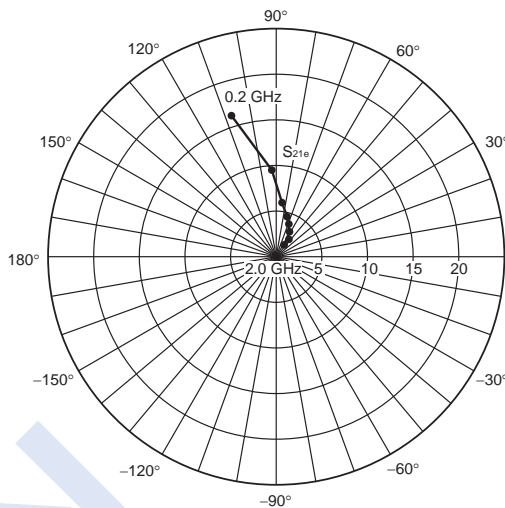
■ Typical Characteristics



S_{11e}, S_{22e}-FREQUENCY
CONDITION $V_{CE} = 10\text{ V}$
200 MHz Step



S_{21e}-FREQUENCY
CONDITION $V_{CE} = 10\text{ V}$
 $I_c = 20\text{ mA}$



S_{12e}-FREQUENCY
CONDITION $V_{CE} = 10\text{ V}$
 $I_c = 20\text{ mA}$

