

2SC5081

Silicon NPN Epitaxial Transistor

Application

VHF & UHF wide band amplifire

Features

- High gain bandwidth product
 $f_T = 13.5$ GHz typ
- High gain, low noise figure
 $PG = 18$ dB typ,
 $NF = 1.1$ dB typ at $f = 900$ MHz

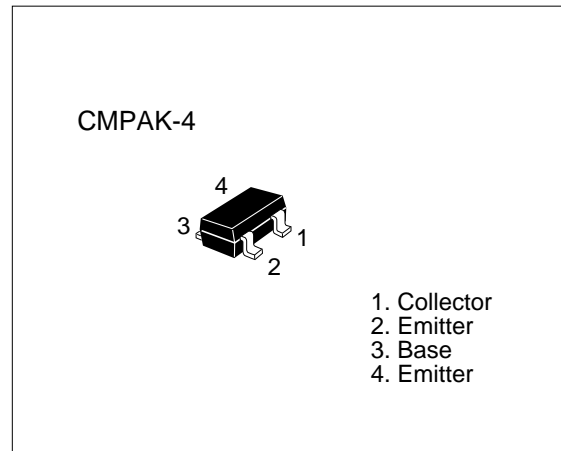


Table 1 Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Item | Symbol | Ratings | Unit |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage | V_{CBO} | 15 | V |
| Collector to emitter voltage | V_{CEO} | 8 | V |
| Emitter to base voltage | V_{EBO} | 1.5 | V |
| Collector current | I_C | 50 | mA |
| Collector power dissipation | P_C | 100 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

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Table 2 Electrical Characteristics (Ta = 25°C)

| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|-------------------------------------|---------------|------|------|------|---------|--|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | 15 | — | — | V | $I_C = 10 \mu A, I_E = 0$ |
| Collector cutoff current | I_{CBO} | — | — | 1 | μA | $V_{CB} = 12 V, I_E = 0$ |
| | I_{CEO} | — | — | 1 | mA | $V_{CE} = 9 V, R_{BE} = \infty$ |
| Emitter cutoff current | I_{EBO} | — | — | 10 | μA | $V_{EB} = 1.5 V, I_C = 0$ |
| DC current transfer ratio | h_{FE} | 50 | 90 | 160 | | $V_{CE} = 5 V, I_C = 20 mA$ |
| Output capacitance | C_{ob} | — | 0.4 | 0.75 | pF | $V_{CB} = 5 V, I_E = 0, f = 1 MHz$ |
| Gain bandwidth product | f_T | 10.5 | 13.5 | — | GHz | $V_{CE} = 5 V, I_C = 20 mA$ |
| Power gain | PG | 15 | 18 | — | dB | $V_{CE} = 5 V, I_C = 20 mA, f = 900 MHz$ |
| Noise figure | NF | — | 1.1 | 2.0 | dB | $V_{CE} = 5 V, I_C = 5 mA, f = 900 MHz$ |

Note: See characteristic curve of 2SC5080.
Marking of 2SC5081 is "ZD-".

Attention: This device is very sensitive to electro static discharge.
It is recommended to adopt appropriate cautions when handling this transistor.