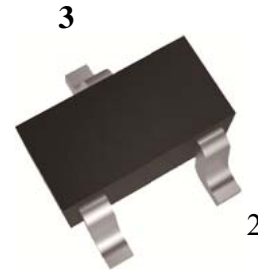


NPN SILICON RF TRANSISTOR

- Ultra high frequency low noise transistor
- Silicon epitaxial bipolar process.
- High power gain, low noise figure,
- high dynamic range and ideal current characteristics,
- SC-59 chip package, mainly used in VHF, UHF and CATV
- high frequency wideband low noise amplifier.



1
SC-59

1: Base 2: Emitter 3: Collector

Feature

High gain: $|S_{21e}|$ TYP. Value is 11dB @ $V_{CE}=10V$, $I_C=20mA$, $f=1GHz$
 Low noise: NF TYP. Value is 1.5dB @ $V_{CE}=10V$, $I_C=7mA$, $f=1GHz$
 f_T (TYP.): TYP. Value is 7GHz @ $V_{CE}=10V$, $I_C=20mA$, $f=1GHz$

Absolute Maximum Ratings $T_A=25^\circ C$ Unless Otherwise noted

| PARAMETER | SYMBLE | MAXIMUM VALUE | UNIT |
|-------------------------------------|-----------|-----------------------|------------|
| Collector-base breakdown voltage | V_{CBO} | 20 | V |
| Collector-emitter breakdown voltage | V_{CEO} | 12 | V |
| Emitter-base breakdown voltage | V_{EBO} | 3 | V |
| Collector current | I_C | 100 | mA |
| Collector Power Dissipation | P_D | 200 | mW |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | -65 ~ +150 $^\circ C$ | T_{stg} |

hFE Classification (@ $V_{CE}=10V, I_C=20mA$)

| Classification | B | C | D |
|----------------|--------|---------|---------|
| Marking | R24 | R25 | |
| hFE | 90-140 | 130-180 | 170-250 |

SHIKE MAKE CONSCIOUS PRODUCT

CONSCIOUS PRODUCTS BEGIN WITH CONSCIOUS PEOPLE

REV.07



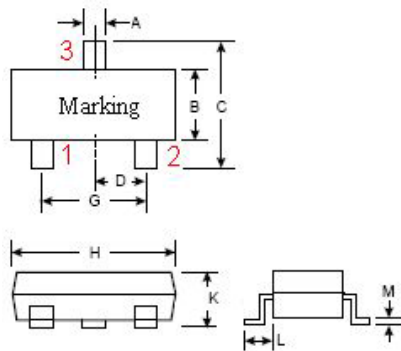
www.shike.tw

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

| PARAMETER | SYMBLE | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|----------------------------------|---------------------------------|------|------|------|------|--|
| Collector-base breakdown voltage | V _{CB0} | 20 | | | v | I _C =1.0μA |
| Collector cut-off current | I _{CBO} | | | 0.1 | μA | V _{CB} =10V |
| Emitter cut-off current | I _{EBO} | | | 0.1 | μA | V _{EB} =1V |
| Transit frequency | f _r | 5 | 7 | | GHz | V _{CE} =10V, I _C =20mA |
| Output feedback capacitor | C _{re} | | 0.65 | | pF | V _{CB} =10V, I _E =0mA, f=1MHz |
| Power gain | S _{21e} ² | | 11 | | dB | V _{CE} =10V, I _C =20mA, f=1GHz |
| Noise factor | NF | | 1.5 | | dB | V _{CE} =10V, I _C =7mA, f=1GHz |

PACKAGE: SC-59

1: (Base) 2: (Emitter) 3: (Collector)



| SC-59 | | |
|--------|----------|----------|
| SYMBLE | MIN (mm) | MAX (mm) |
| A | 0.35 | 0.5 |
| B | 1.4 | 1.7 |
| C | 2.7 | 3.1 |
| D | 0.95 | |
| G | 1.7 | 2.1 |
| H | 2.7 | 3.1 |
| K | 1 | 1.3 |
| L | 0.5 | 0.85 |
| M | 0.1 | 0.35 |

SHIKE MAKE CONSCIOUS PRODUCT

CONSCIOUS PRODUCTS BEGIN WITH CONSCIOUS PEOPLE

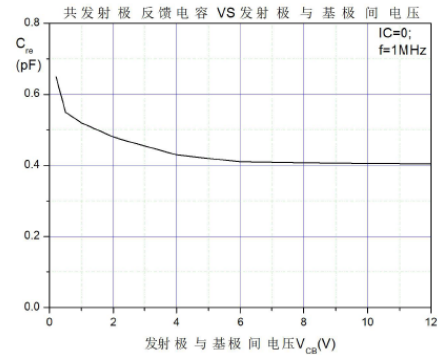
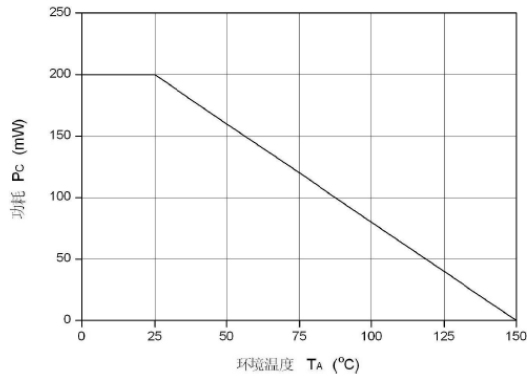
REV.07



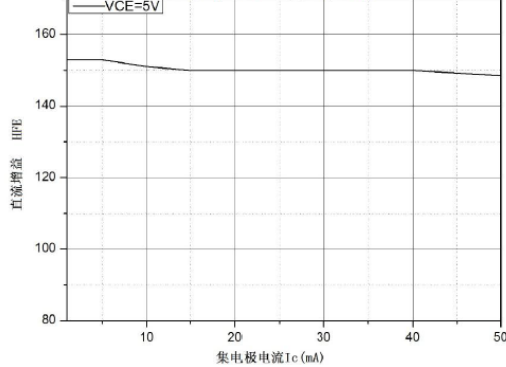
www.shike.tw

Typical characteristic curves (TA = 25°C)

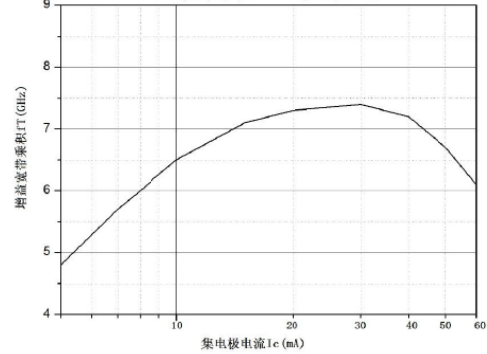
功耗 vs. 环境温度



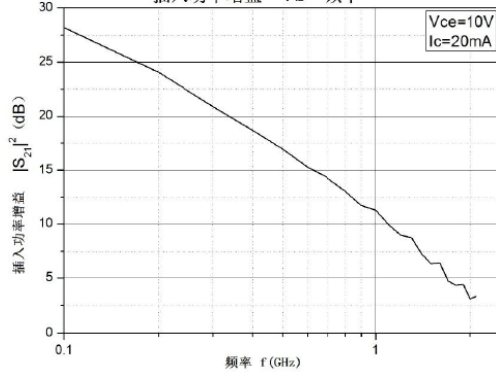
直流增益 VS 集电极电流



增益宽带乘积 VS 集电极电流



插入功率增益 VS 频率



插入功率增益 VS 集电极电流

