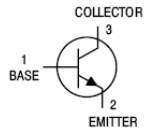
# 2SC4226

NPN Silicon Epitaxial Planar Transistor

## FEATURES

- Low noise.
- High gain.
- Power dissipation.($P_C$=150mW)







**SOT-323**

## APPLICATIONS

- High frequency low noise amplifier.

## ORDERING INFORMATION

| Type No. | Marking | Package Code |
|---|---|---|
| 2SC4226 | R23/R24/R25 | SOT-323 |

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 20 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 12 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 3 | V |
| $I_C$ | Collector Current -Continuous | 100 | mA |
| $P_C$ | Collector Dissipation | 150 | mW |
| $T_j$, $T_{stg}$ | Junction and Storage Temperature | -65 to +150 | ℃ |

## PACKAGE INFORMATION

| Device | Package | Shipping |
|---|---|---|
| 2SC4226 | SOT-323 | 3000/Tape&Reel |

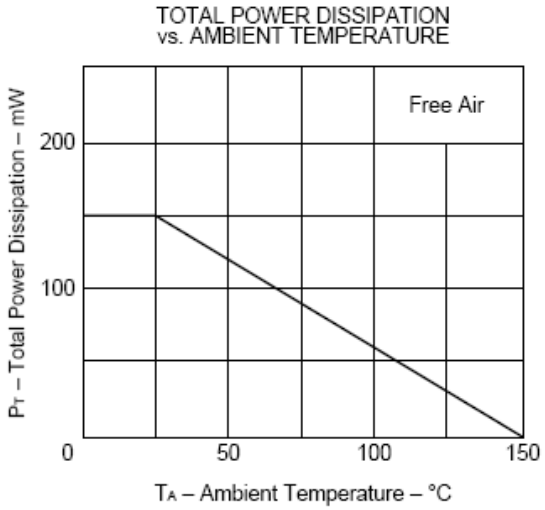
## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

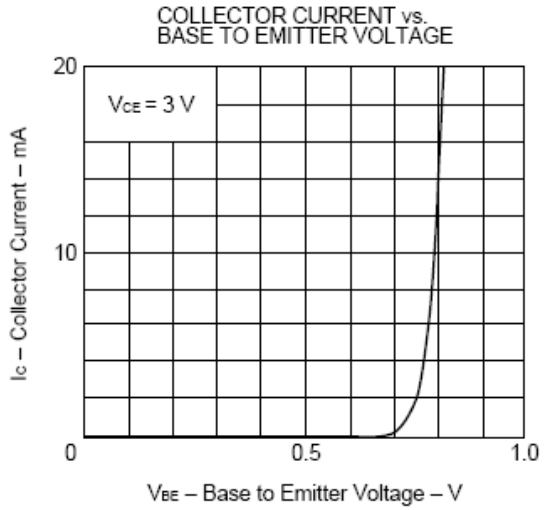
| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$=100μA,$I_E$=0 | 20 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$=1mA,$I_B$=0 | 12 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$=100μA,$I_C$=0 | 3 | | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=10V,$I_E$=0 | | | 1.0 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=1V,$I_C$=0 | | | 1.0 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$=3V,$I_C$=7mA | 40 | 110 | 250 | |
| Feed back capacitance | $C_{re}$ | $V_{CE}$=3V,$I_E$=0mA,f=1MHz | | 0.7 | 1.5 | pF |
| Transition frequency | $f_T$ | $V_{CE}$=3V, $I_E$=7mA | 3.0 | 4.5 | | GHz |
| Noise Figure | NF | $V_{CE}$=3V,$I_C$=7mA,f=1GHz | | 1.2 | 2.5 | dB |

## CLASSIFICANTION OF $h_{FE}$

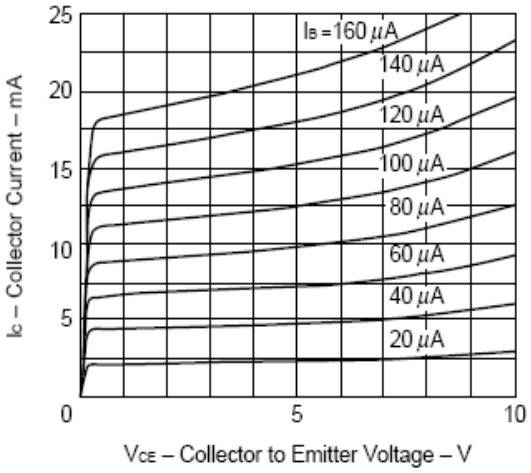
| **Marking** | R23 | R24 | R25 |
|---|---|---|---|
| **$h_{FE}$** | 40-80 | 70-140 | 125-250 |

## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

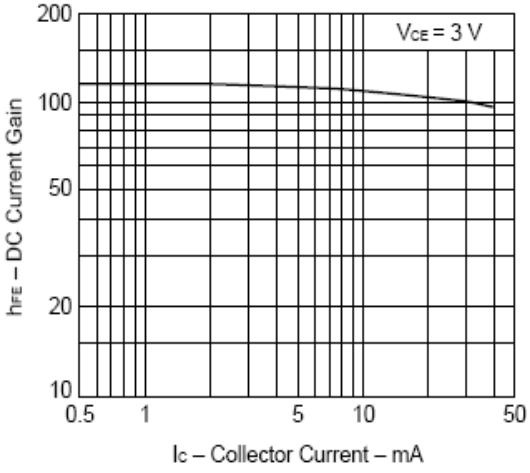


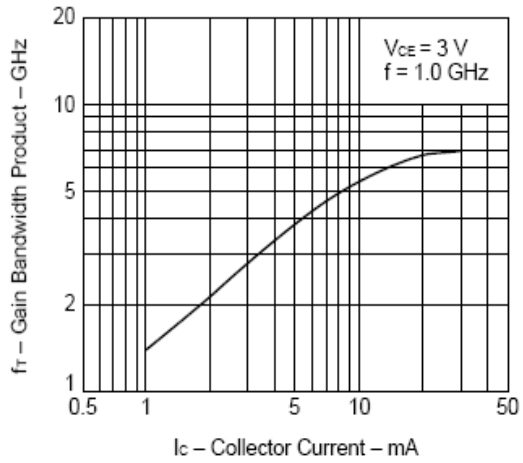
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



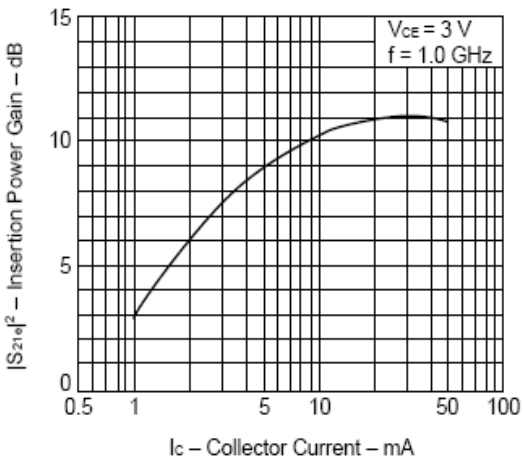

DC CURRENT GAIN vs.
COLLECTOR CURRENT



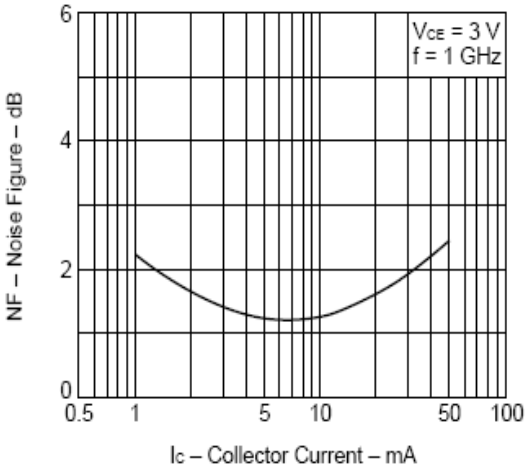

GAIN BANDWIDTH PRODUCT
vs. COLLECTOR CURRENT



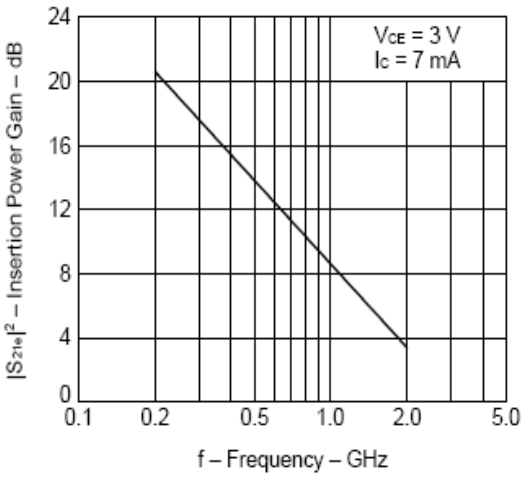

INSERTION POWER GAIN vs.
COLLECTOR CURRENT




NOISE FIGURE vs.
COLLECTOR CURRENT

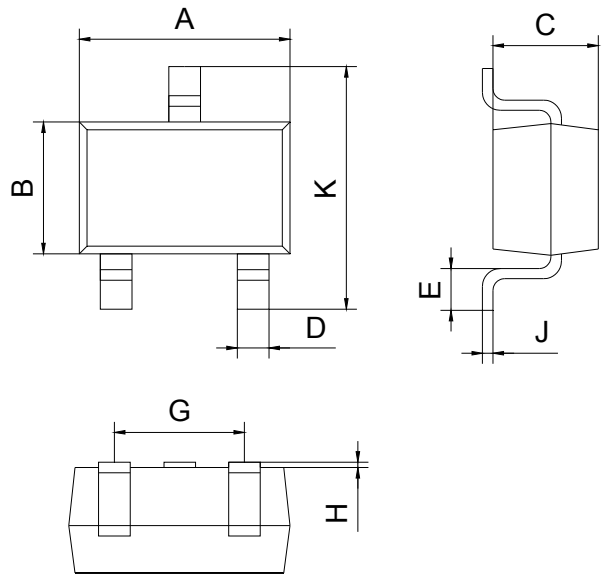



INSERTION POWER GAIN vs. FREQUENCY



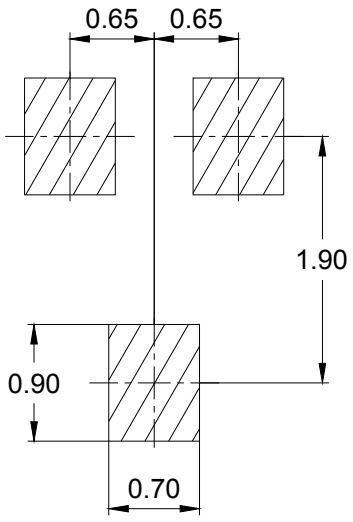
## PACKAGE OUTLINE

Plastic surface mounted package




| SOT-323 | | |
|---|---|---|
| Dim | Min | Max |
| A | 2.00 | 2.20 |
| B | 1.15 | 1.35 |
| C | 0.90 | 1.10 |
| D | 0.15 | 0.35 |
| E | 0.25 | 0.40 |
| G | 1.20 | 1.40 |
| H | 0.02 | 0.10 |
| J | 0.05 | 0.15 |
| K | 2.20 | 2.40 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit : mm