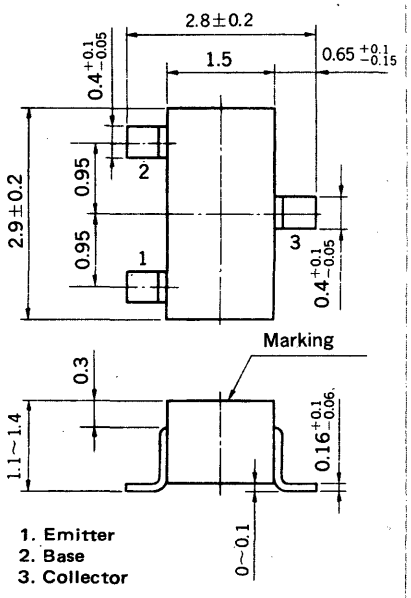
NEC
ELECTRON DEVICE

# SILICON TRANSISTOR
# 2SA1226

## HIGH FREQUENCY AMPLIFIER
## PNP SILICON EPITAXIAL TRANSISTOR
## MINI MOLD

**PACKAGE DIMENSIONS**
in millimeters




### FEATURES

- High Gain Bandwidth product $f_T$ = 400 MHz TYP.
- Low Output Capacitance $C_{ob}$ = 1.1 pF TYP.
- Low Noise, NF = 3.5 dB TYP. (f = 1.0 MHz)

### ABSOLUTE MAXIMUM RATINGS

| | | | |
|---|---|---|---|
| Maximum Voltages and Current ($T_a$ = 25 °C) | | | |
| Collector to Base Voltage ($R_{BE} = \infty$) | $V_{CBO}$ | −40 | V |
| Collector to Emitter Voltage (Open Base) | $V_{CEO}$ | −40 | V |
| Emitter to Base Voltage | $V_{EBO}$ | −5.0 | V |
| Collector Current (DC) | $I_C$ | −30 | mA |
| Maximum Power Dissipation | | | |
| Total Power Dissipation at 25 °C Ambient Temperature | $P_T$ | 200 | mW |
| Maximum Temperatures | | | |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | −55 to +150 | °C |

### ELECTRICAL CHARACTERISTICS ($T_a$ = 25 °C)

| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| Collector Cutoff Current | $I_{CBO}$ | | | −0.1 | μA | $V_{CB}$ = −40 V, $I_E$ = 0 |
| Emitter Cutoff Current | $I_{EBO}$ | | | −0.1 | μA | $V_{EB}$ = −4.0 V, $I_C$ = 0 |
| DC Current Gain | $h_{FE}$ | 40 | 90 | 180 | | $V_{CE}$ = −10 V, $I_C$ = −1.0 mA |
| Collector Saturation Voltage | $V_{CE(sat)}$ | | −0.09 | −0.3 | V | $I_C$ = −10 mA, $I_B$ = −1.0 mA |
| Base to Emitter Voltage | $V_{BE}$ | −0.67 | −0.72 | | V | $V_{CE}$ = −10 V, $I_C$ = −10 mA |
| Gain Bandwidth Product | $f_T$ | 250 | 400 | | MHz | $V_{CE}$ = −10 V, $I_E$ = 1.0 mA |
| Output Capacitance | $C_{ob}$ | | 1.1 | 2.0 | pF | $V_{CB}$ = −10 V, $I_E$ = 0, f = 1.0 MHz |
| Noise Figure | NF | | 3.5 | | dB | $V_{CE}$ = −10 V, $I_C$ = −1.0 mA, $R_G$ = 500 Ω, f = 1.0 MHz |

$h_{FE}$ Classification

| Marking | E2 | E3 | E4 |
|---|---|---|---|
| $h_{FE2}$ | 40 to 80 | 60 to 120 | 90 to 180 |



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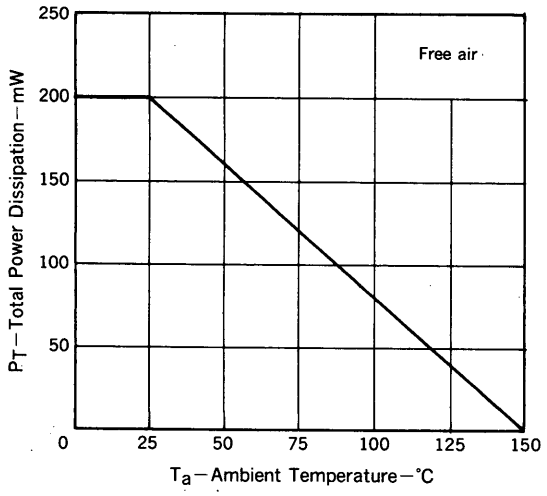
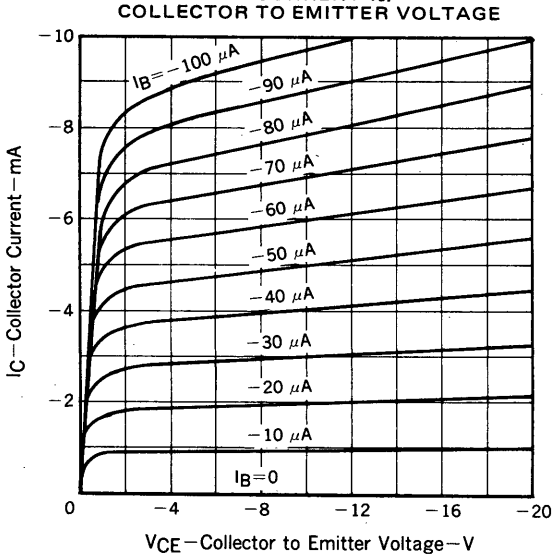
## TYPICAL CHARACTERISTICS ($T_a$ = 25 °C)

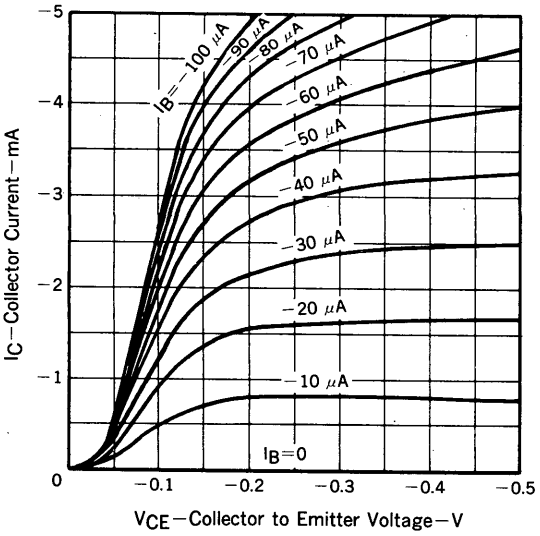
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



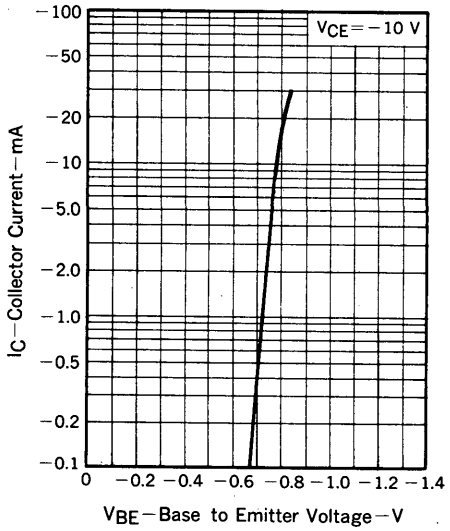

COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



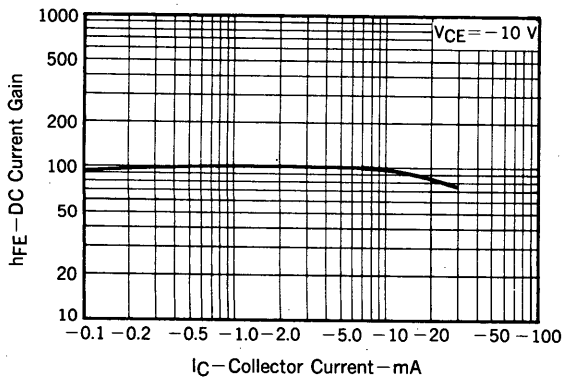

COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



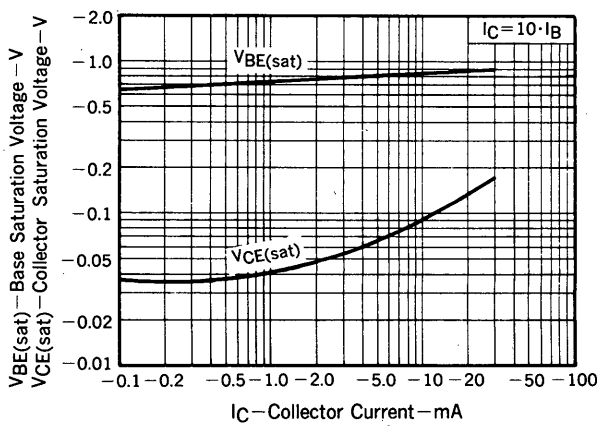

COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



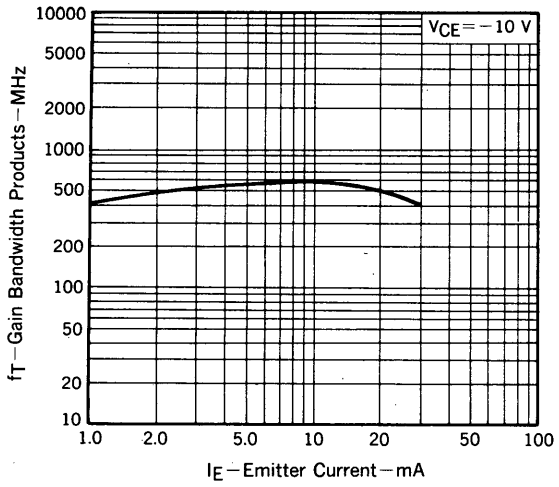

DC CURRENT GAIN vs. COLLECTOR CURRENT



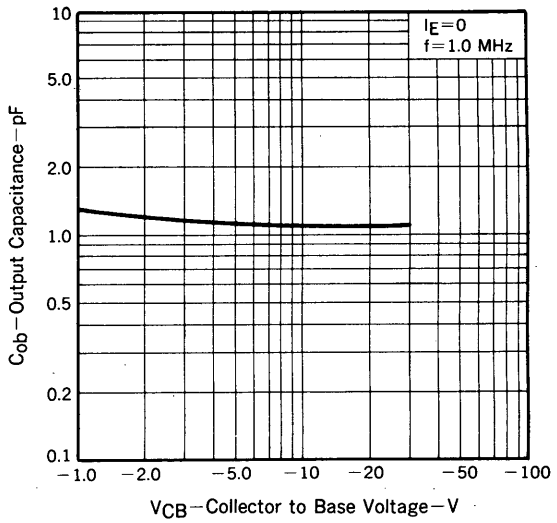

BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



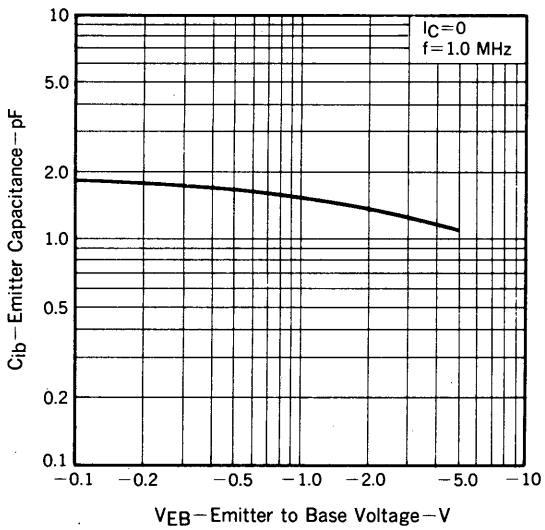
GAIN BANDWIDTH PRODUCTS vs.
EMITTER CURRENT




OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE




INPUT CAPACITANCE vs.
EMITTER TO BASE VOLTAGE



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