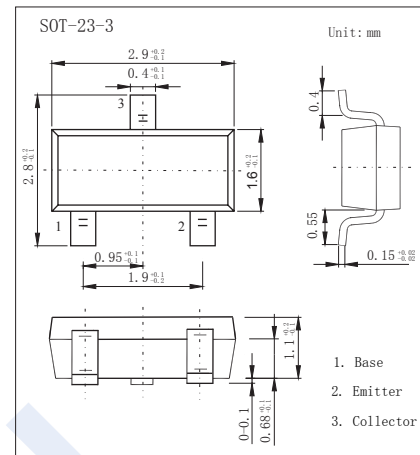


PNP Transistors

2SA1163-HF

■ Features

- High voltage: $V_{CE0} = -120\text{ V}$
- High h_{FE} : $h_{FE} = 200\sim 700$
- Low noise: $NF = 1\text{ dB (typ.)}$, 10 dB (max)
- Small package
- Complementary to 2SC2713-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|------------|------------------|
| Collector - Base Voltage | V_{CBO} | -120 | V |
| Collector - Emitter Voltage | V_{CEO} | -120 | |
| Emitter - Base Voltage | V_{EBO} | -5 | |
| Collector Current - Continuous | I_C | -100 | mA |
| Base Current | I_B | -20 | |
| Collector Power Dissipation | P_C | 150 | W |
| Junction Temperature | T_J | 125 | $^\circ\text{C}$ |
| Storage Temperature range | T_{stg} | -55 to 125 | |

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|--|------|-----|------|------|
| Collector- base breakdown voltage | V_{CBO} | $I_C = -100\ \mu\text{A}$, $I_E = 0$ | -120 | | | V |
| Collector- emitter breakdown voltage | V_{CEO} | $I_C = -1\ \text{mA}$, $I_B = 0$ | -120 | | | |
| Emitter - base breakdown voltage | V_{EBO} | $I_E = -100\ \mu\text{A}$, $I_C = 0$ | -5 | | | |
| Collector-base cut-off current | I_{CBO} | $V_{CB} = -120\ \text{V}$, $I_E = 0$ | | | -100 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -5\ \text{V}$, $I_C = 0$ | | | -100 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -10\ \text{mA}$, $I_B = -1\ \text{mA}$ | | | -0.3 | V |
| Base - emitter saturation voltage | $V_{BE(sat)}$ | $I_C = -10\ \text{mA}$, $I_B = -1\ \text{mA}$ | | | -1.2 | |
| DC current gain | h_{FE} | $V_{CE} = -6\ \text{V}$, $I_C = -2\ \text{mA}$ | 200 | | 700 | |
| Noise figure | NF | $V_{CE} = -6\ \text{V}$, $I_C = -0.1\ \text{mA}$, $f = 1\ \text{kHz}$, $R_g = 10\ \text{k}\Omega$, | | 1 | 10 | dB |
| Collector output capacitance | C_{ob} | $V_{CB} = -10\ \text{V}$, $I_E = 0$, $f = 1\ \text{MHz}$ | | 4 | | pF |
| Transition frequency | f_T | $V_{CE} = -6\ \text{V}$, $I_C = -1\ \text{mA}$ | | 100 | | MHz |

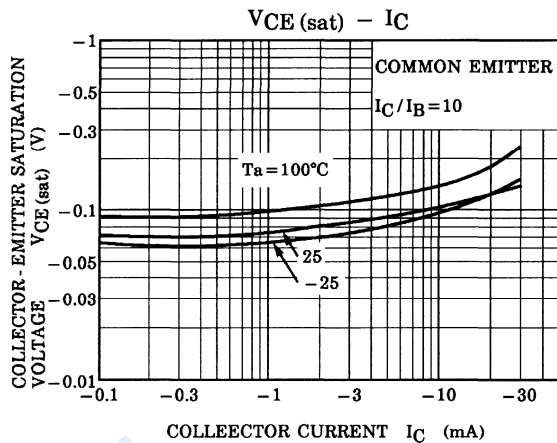
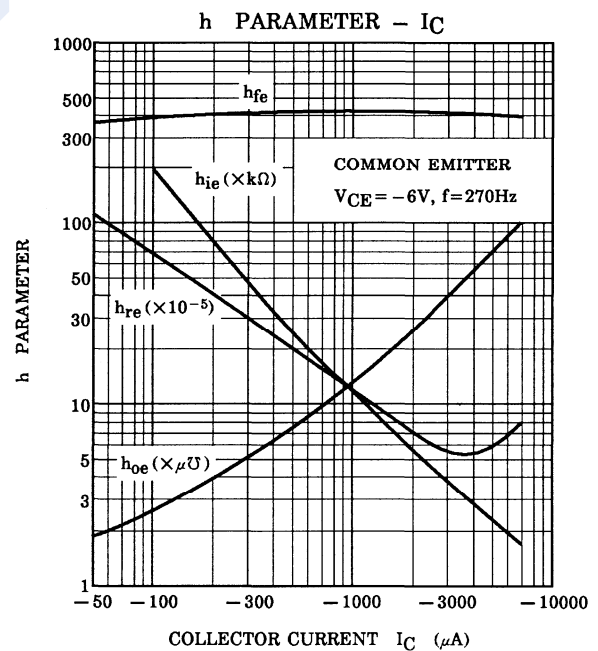
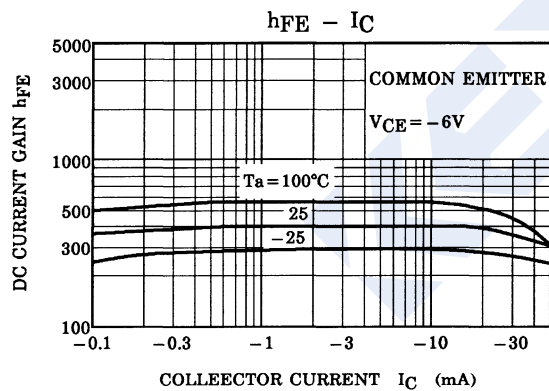
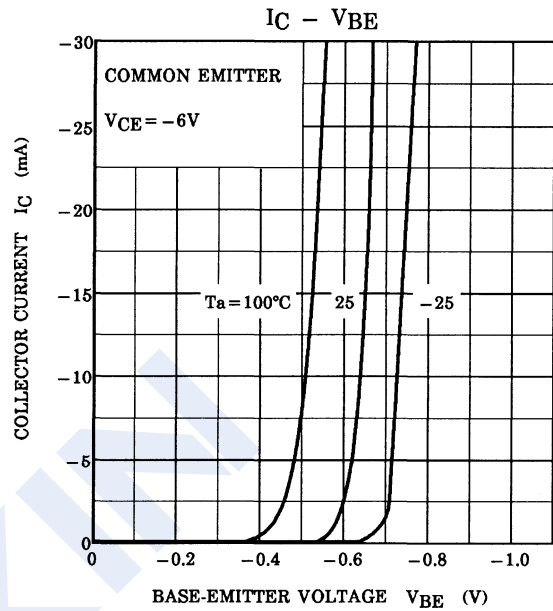
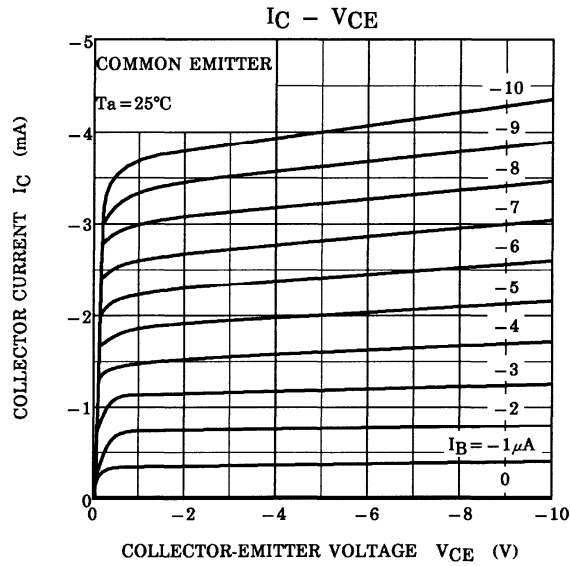
■ Classification of h_{FE}

| Type | 2SA1163-G-HF | 2SA1163-L-HF |
|---------|-----------------|-----------------|
| Range | 200-400 | 350-700 |
| Marking | CG _F | CL _F |

PNP Transistors

2SA1163-HF

■ Typical Characteristics



PNP Transistors

2SA1163-HF

■ Typical Characteristics

