

● FEATURES

Power dissipation

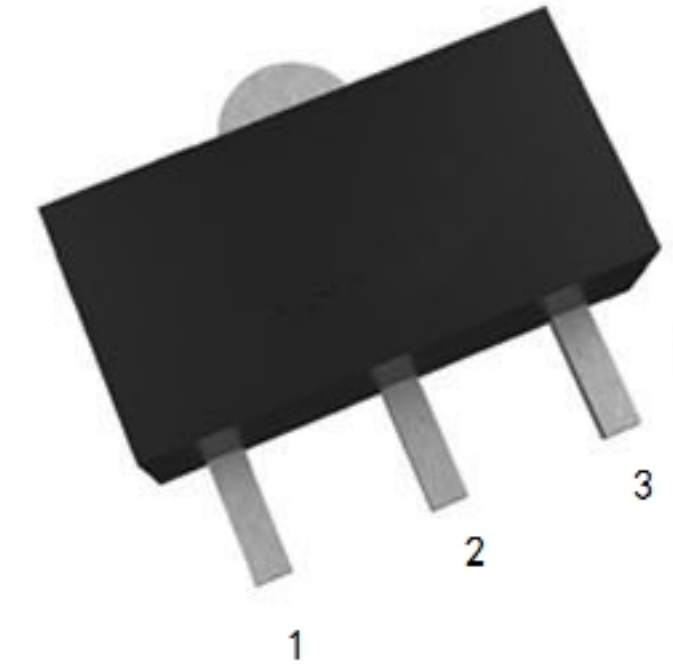
Plastic-Encapsulate Transistors(NPN)

● MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Units |
|-----------|-------------------------------|---------|--------------------|
| V_{CBO} | Collector-Base Voltage | 40 | V |
| V_{CEO} | Collector-Emitter Voltage | 30 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current -Continuous | 3 | A |
| P_C | Collector Power Dissipation | 2.5 | W |
| T_J | Junction Temperature | 150 | $^{\circ}\text{C}$ |
| T_{stg} | Storage Temperature | -55-150 | $^{\circ}\text{C}$ |

SOT-89

1. BASE
2. COLLECTOR
3. EMITTER



● ELECTRICAL CHARACTERISTICS($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-----|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 100\mu\text{A}, I_E=0$ | 40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 10\text{mA}, I_B=0$ | 30 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E = 100\mu\text{A}, I_C=0$ | 6 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}= 40\text{V}, I_E=0$ | | | 1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}= 30\text{V}, I_B=0$ | | | 10 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}= 6\text{V}, I_C=0$ | | | 1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=2\text{V}, I_C= 1\text{A}$ | 60 | | 400 | |
| | $h_{FE(2)}$ | $V_{CE}=2\text{V}, I_C= 100\text{mA}$ | 32 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C= 2\text{A}, I_B= 0.2\text{A}$ | | | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C= 2\text{A}, I_B= 0.2\text{A}$ | | | 1.5 | V |
| Transition frequency | f_T | $V_{CE}= 5\text{V}, I_C=0.1\text{A}$ $f=10\text{MHz}$ | 50 | | | MHz |

● h_{FE} Classification

| Marking | DG | | | |
|----------|---------|---------|---------|---------|
| | R | S | T | U |
| Rank | | | | |
| h_{FE} | 100~200 | 140~280 | 200~400 | 280~560 |

Typical characteristics

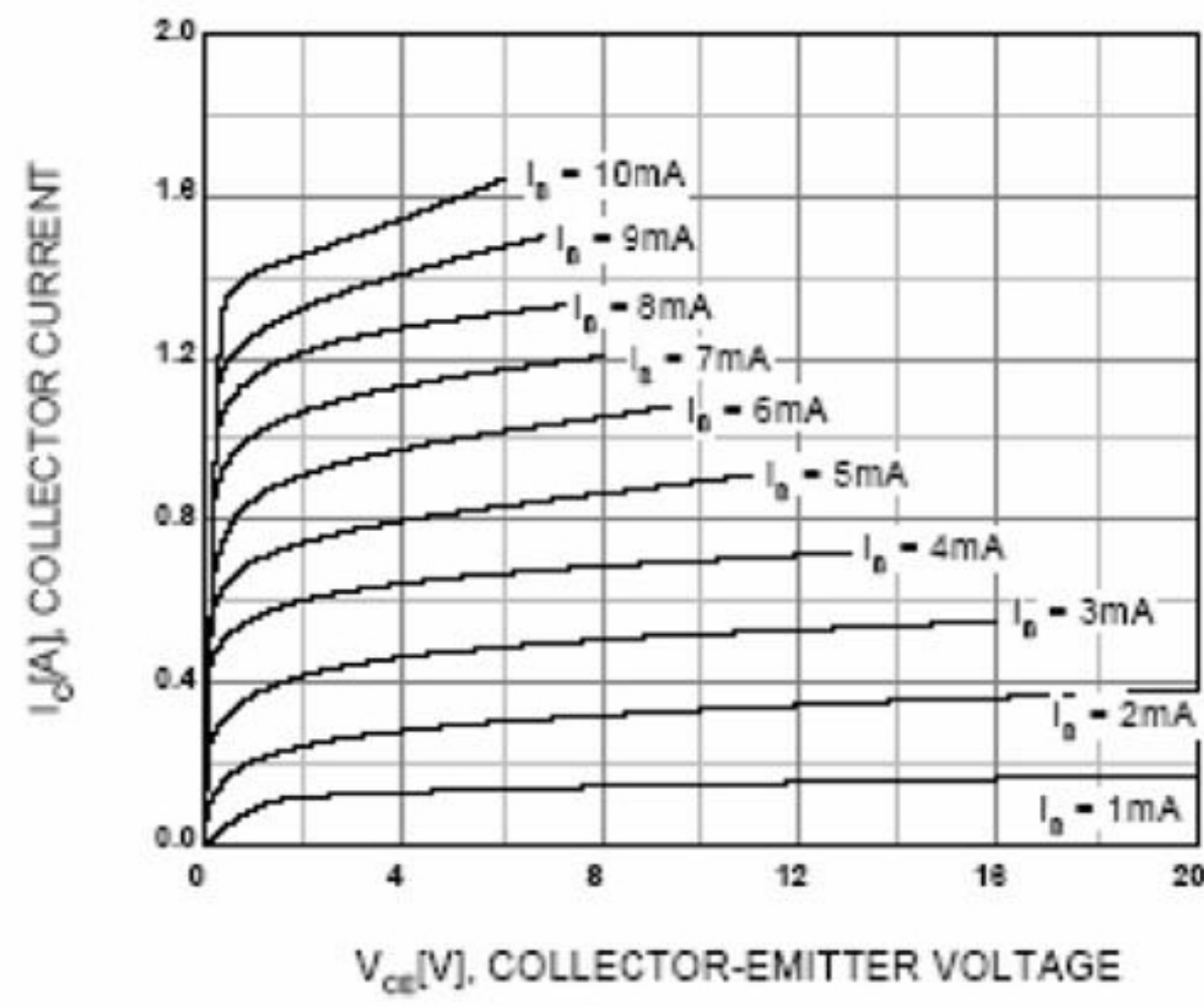


Figure 1. Static Characteristic

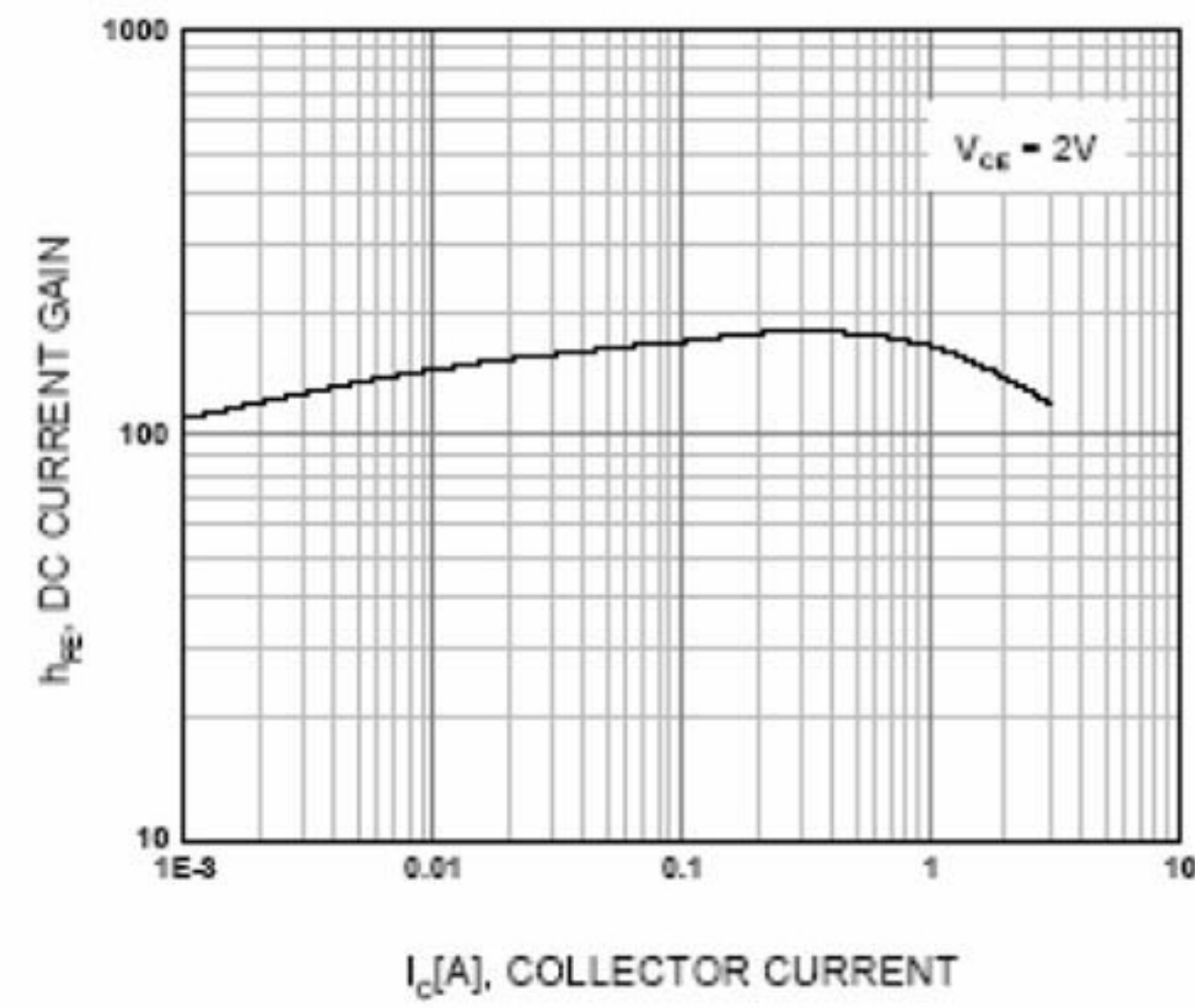


Figure 2. DC current Gain

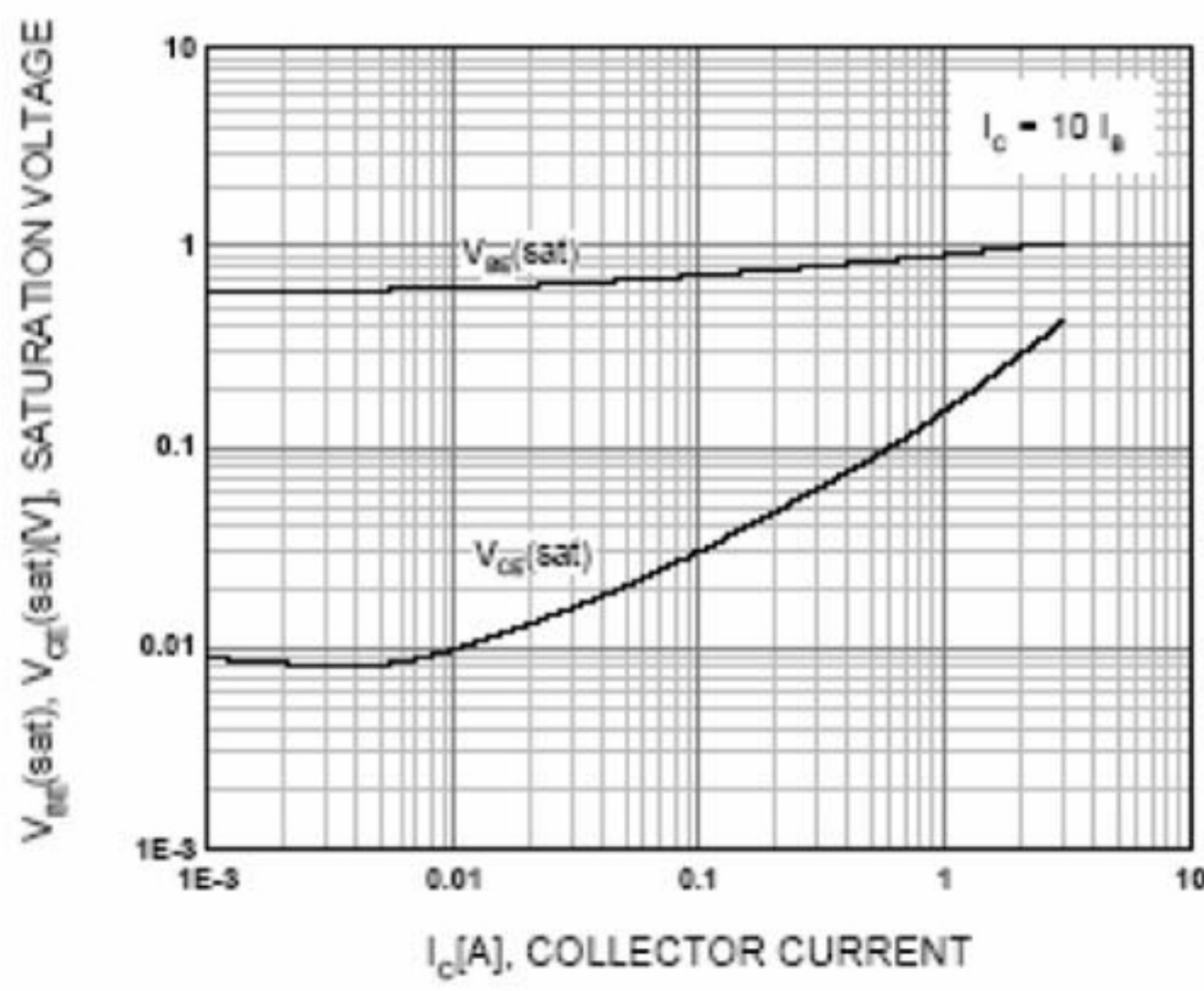


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

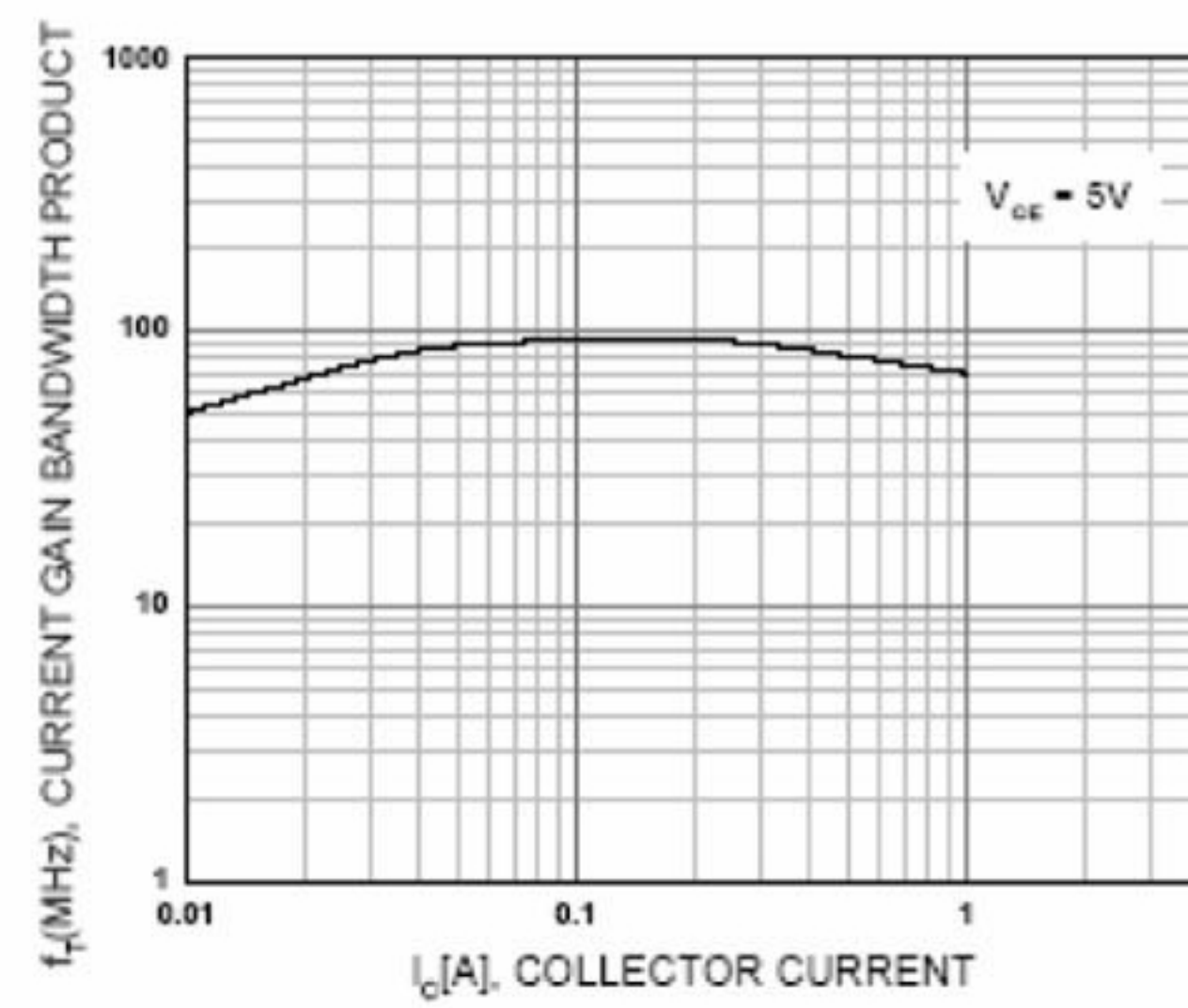


Figure 4. Current Gain Bandwidth Product

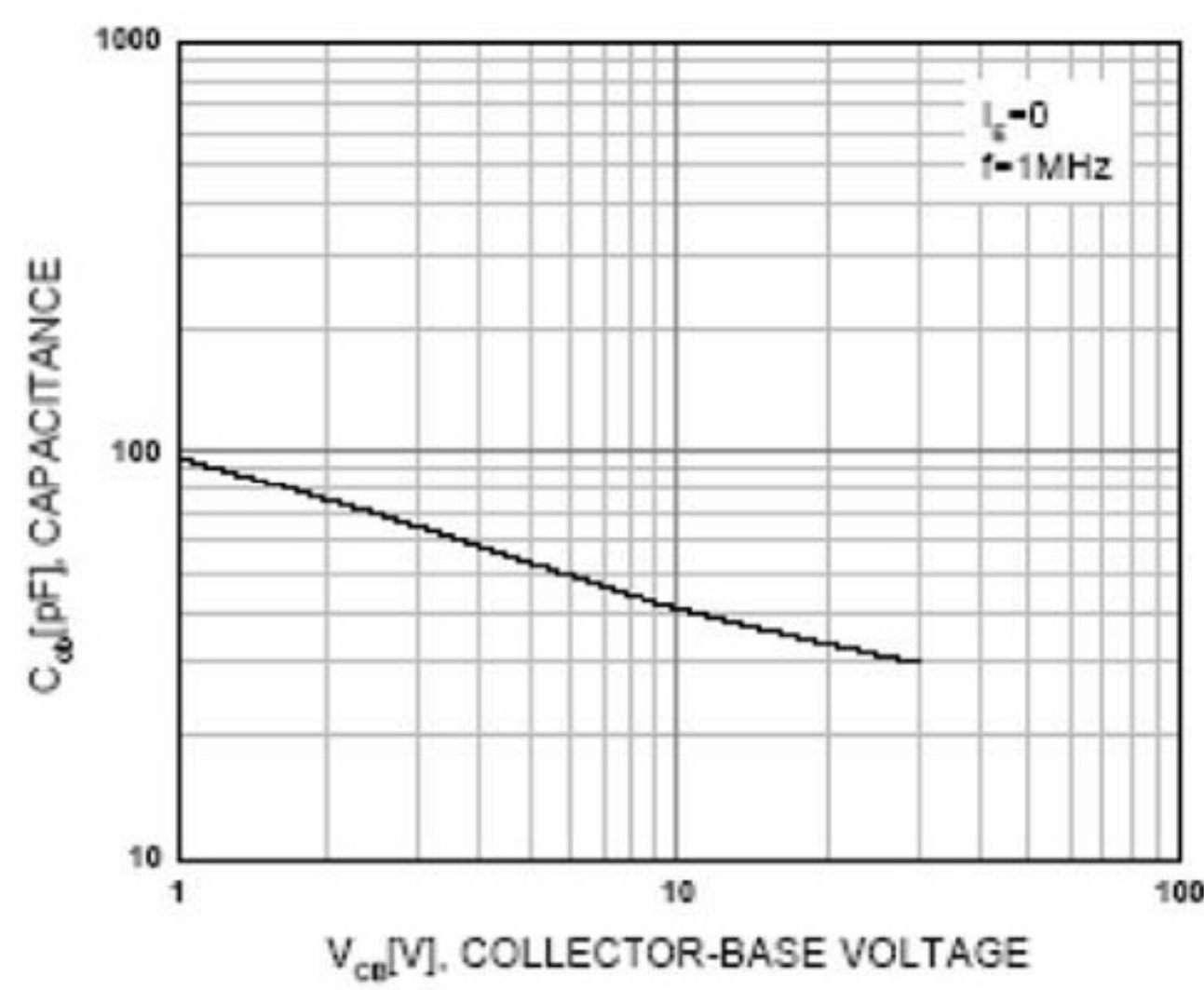


Figure 5. Collector Output Capacitance