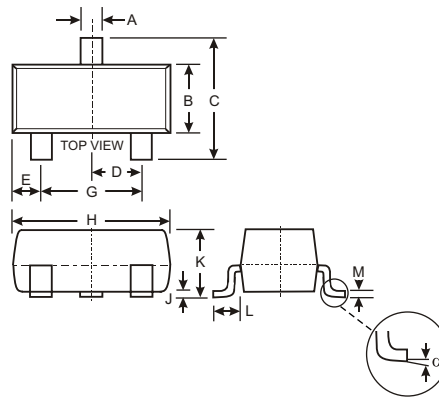


Features

- High Collector Current. ($I_C = 500\text{mA}$)
- Complementary To S9012.
- Excellent H_{FE} Linearity.
- Power dissipation. ($P_C = 300\text{mW}$)

Mechanical Data

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams
- Approx. Weight: 0.008 grams



| SOT-23 | | |
|----------------------|-------|-------|
| Dim | Min | Max |
| A | 0.37 | 0.51 |
| B | 1.20 | 1.40 |
| C | 2.30 | 2.50 |
| D | 0.89 | 1.03 |
| E | 0.45 | 0.60 |
| G | 1.78 | 2.05 |
| H | 2.80 | 3.00 |
| J | 0.013 | 0.10 |
| K | 0.903 | 1.10 |
| L | 0.45 | 0.61 |
| M | 0.085 | 0.180 |
| α | 0° | 8° |
| All Dimensions in mm | | |

Maximum Ratings and Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | Value | Units |
|----------------------------------|----------------|---------|------------------|
| Collector-Base Voltage | V_{CBO} | 40 | V |
| Collector-Emitter Voltage | V_{CEO} | 25 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current -Continuous | I_C | 500 | mA |
| Collector Dissipation | P_C | 300 | mW |
| Junction and Storage Temperature | T_j, T_{stg} | -55~150 | $^\circ\text{C}$ |



Electrical Characteristics $T_A = 25^\circ\text{C}$ 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 | $V_{(BR)CEO}$ | $I_C=0.1\text{mA}, I_B=0$ | 25 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=40\text{V}, I_E=0$ | | | 0.1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=20\text{V}, I_B=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5\text{V}, I_C=0$ | | | 0.1 | μA |
| DC current gain | h_{FE} | $V_{CE}=1\text{V}, I_C=50\text{mA}$ | 120 | | 400 | |
| | | $V_{CE}=1\text{V}, I_C=500\text{mA}$ | 40 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 0.6 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 1.2 | V |
| Transition frequency | f_T | $V_{CE}=6\text{V}, I_C=20\text{mA}$ $f=30\text{MHz}$ | 150 | | | MHz |

| Rank | L | H | J |
|-------|---------|---------|---------|
| Range | 120-200 | 200-350 | 300-400 |

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

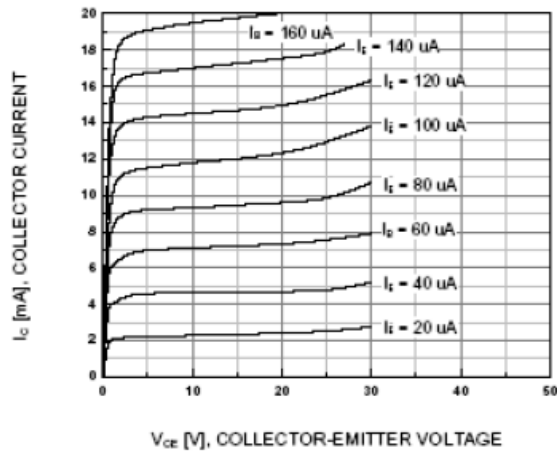


Figure 1. Static Characteristic

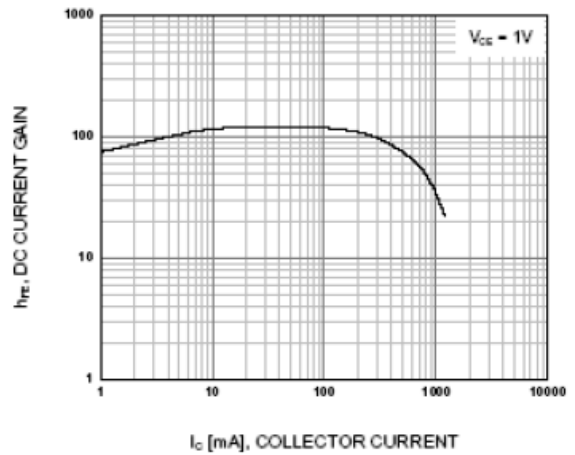


Figure 2. DC current Gain

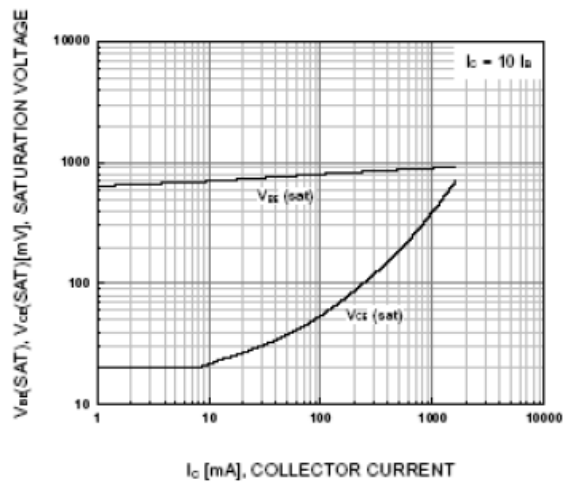


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

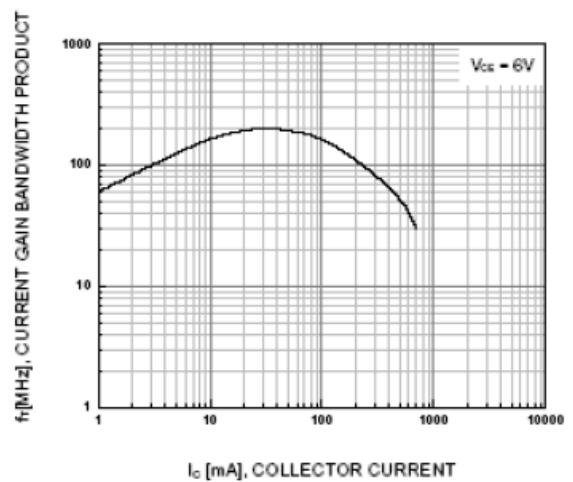


Figure 4. Current Gain Bandwidth Product