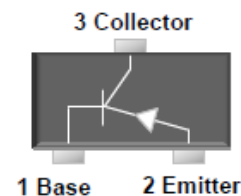


Small Signal Product
0.3 Watts, PNP Plastic-Encapsulate Transistor
FEATURES

- Ideally suited for automatic insertion
- Epitaxial planar die construction
- For switching, AF driver, and amplifier applications
- Complementary PNP type available (BC807)
- Pb free and RoHS compliant
- Packing code with suffix "G" means green compound (halogen-free)


MECHANICAL DATA

- Case: SOT- 23, Molded plastic
- Terminal: Solderable per MIL-STD-202, method 208
- Case material: Molded plastic, UL flammability classification rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Lead free plating
- Weight: 0.008grams (approximately)

SOT-23
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | VALUE | UNIT |
|--------------------------------|-----------|--------------|------------------|
| Power Dissipation | P_D | 0.3 | W |
| Collector Current - Continuous | I_C | -0.5 | A |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55 to + 150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | MIN | MAX | UNIT |
|---|---------------|---|------|---------------|
| Collector-Base Breakdown Voltage $I_C = -10\ \mu\text{A}$ $I_E = 0$ | V_{CBO} | | -50 | V |
| Collector-Emitter Breakdown Voltage $I_C = -10\ \text{mA}$ $I_B = 0$ | V_{CEO} | | -45 | V |
| Emitter-Base Breakdown Voltage $I_E = -1\ \mu\text{A}$ $I_C = 0$ | V_{EBO} | | -5 | V |
| Collector Cut-off Current $V_{CB} = -45\ \text{V}$ $I_E = 0$ $V_{CB} = -40\ \text{V}$ $I_B = 0$ | I_{CBO} | | -0.1 | μA |
| | | | -0.2 | μA |
| Emitter Cut-off Current $V_{EB} = -4\ \text{V}$ $I_C = 0$ | I_{EBO} | | -0.1 | μA |
| Collector-Emitter Saturation Voltage at $I_C = -500\text{mA}$ $I_B = -50\ \text{mA}$ | $V_{CE(sat)}$ | | -0.7 | V |
| Base-Emitter Saturation Voltage at $I_C = -500\ \text{mA}$ $I_B = -50\ \text{mA}$ | $V_{BE(sat)}$ | | -1.2 | V |
| Transition Frequency $V_{CE} = -5\ \text{V}$ $I_C = -10\ \text{mA}$ $f = 50\text{MHz}$ | f_T | | 80 | MHz |
| DC Current Gain 807-16 807-25 807-40 | h_{FE} | | 100 | |
| | | $V_{CE} = -1\ \text{V}$ $I_C = -100\ \text{mA}$ | 160 | |
| | | | 250 | |
| | | | 250 | |
| | | | 400 | |
| | | | 600 | |

Small Signal Product

RATINGS AND CHARACTERISTICS CURVES

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

Fig. 1 Power Derating Curve

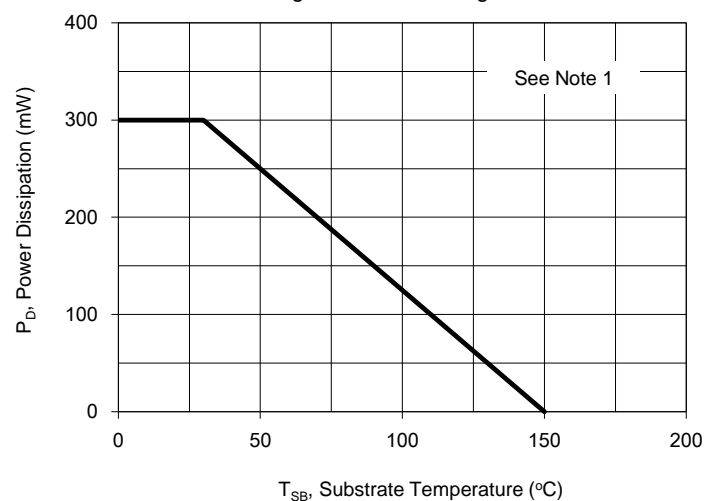


Fig. 2 Gain Bandwidth Product VS. Collector Current

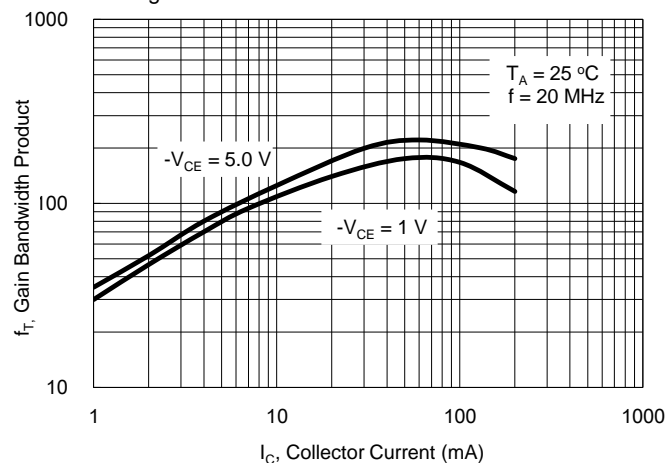


Fig.3 Collector Sat Voltage VS. Collector Current

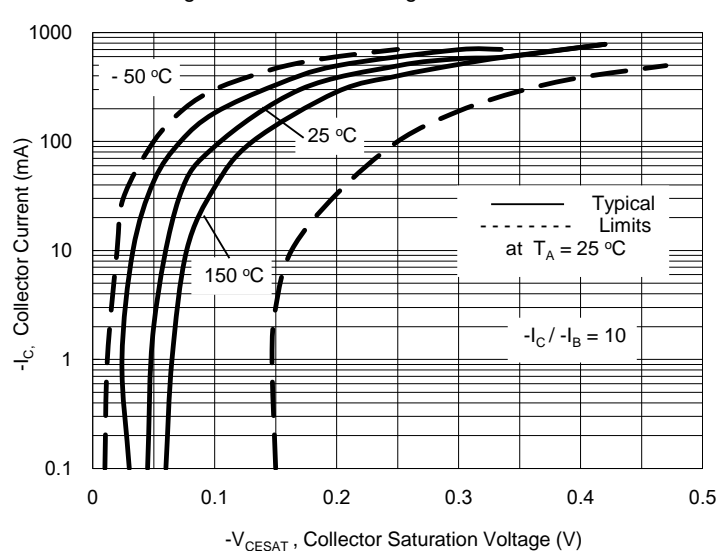


Fig. 4 DC Current Gain VS. Collector Current

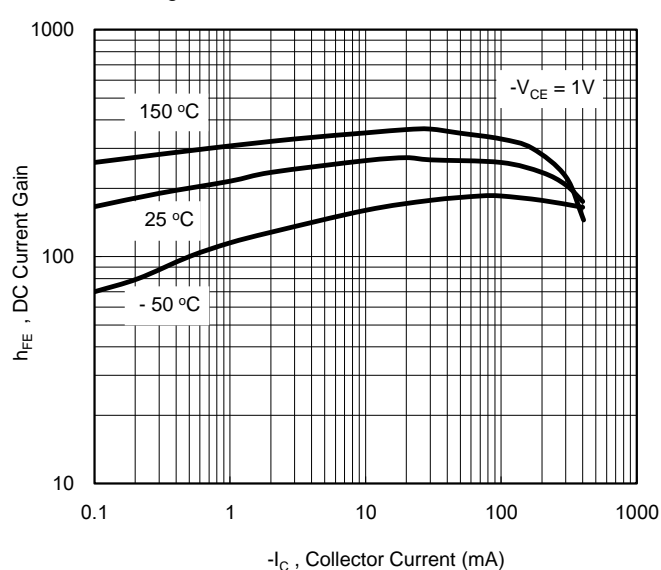


Fig.5 Typical Emitter-Collector Characteristics

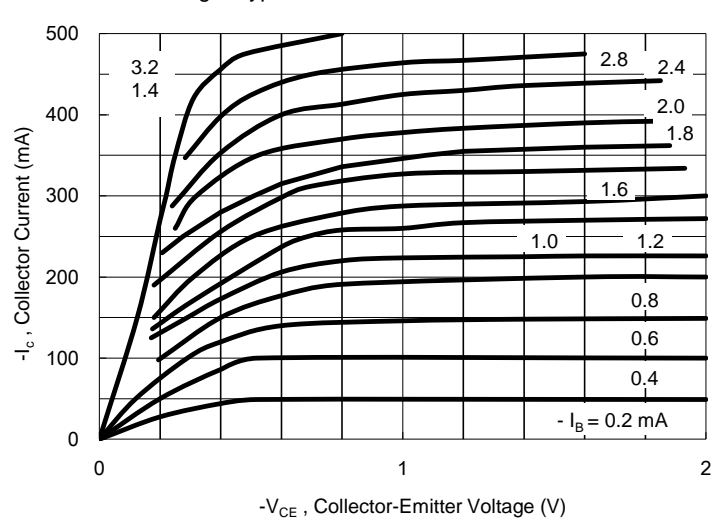
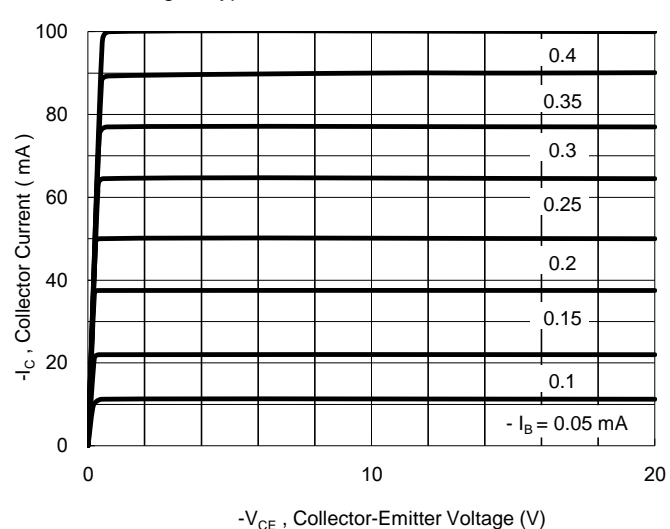


Fig. 6 Typical Emitter-Collector Characteristics



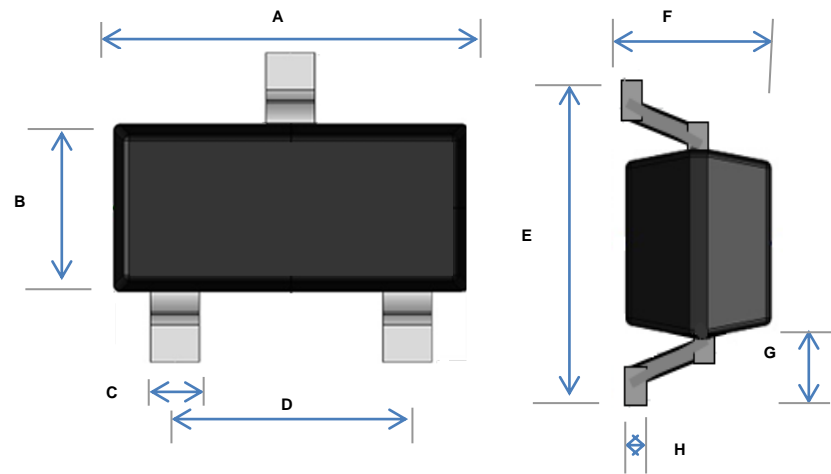
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| ORDERING INFORMATION | | | | | |
|-----------------------------|---------------------|---------------------------|----------------|----------------|----------------|
| PART NO. | PACKING CODE | GREEN COMPOUND | PACKAGE | PACKING | MARKING |
| BC807-16 | RF | G | SOT-23 | 3K / 7" Reel | 5A |
| BC807-25 | | | | | 5B |
| BC807-40 | | | | | 5C |

| EXAMPLE | | | | |
|-------------------------------|-----------------|-------------------------|--------------------------------|--------------------|
| PREFERRED PART NO. | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| BC807-16 RFG | BC807-16 | RF | G | Green compound |

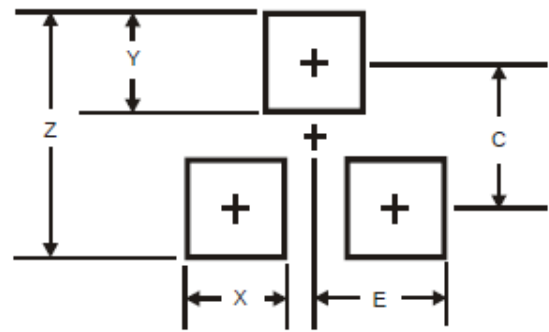
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DIMENSIONS



| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|------|------------|-------|
| | Min | Max | Min | Max |
| A | 2.70 | 3.10 | 0.106 | 0.122 |
| B | 1.10 | 1.50 | 0.043 | 0.059 |
| C | 0.30 | 0.51 | 0.012 | 0.020 |
| D | 1.78 | 2.04 | 0.070 | 0.080 |
| E | 2.10 | 2.64 | 0.083 | 0.104 |
| F | 0.89 | 1.30 | 0.035 | 0.051 |
| G | 0.55 REF | | 0.022 REF | |
| H | 0.1 REF | | 0.004 REF | |

SUGGEST PAD LAYOUT



| DIM. | Unit (mm) | Unit (inch) |
|------|-----------|-------------|
| | Typ. | Typ. |
| A | 0.95 | 0.037 |
| B | 2.0 | 0.079 |
| C | 0.9 | 0.035 |
| D | 0.8 | 0.031 |

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