

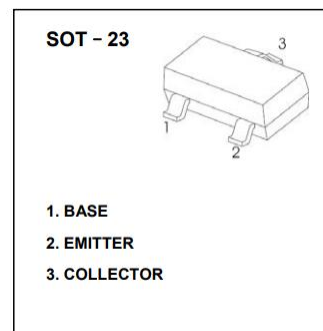


AD-BC807 Plastic-Encapsulated Transistor

AD-BC807 Transistor (PNP)

FEATURES

- Ideally suited for automatic insertion
- Epitaxial planar die construction
- Complementary NPN type available(BC817)
- AEC-Q101 qualified



MAXIMUM RATINGS ($T_j = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|-----------------|------------|---------------------------|
| Collector-base voltage | V_{CBO} | -50 | V |
| Collector-emitter voltage | V_{CEO} | -45 | V |
| Emitter-base voltage | V_{EBO} | -5 | V |
| Collector continuous current | I_C | -500 | mA |
| Collector power dissipation | P_C | 300 | mW |
| Thermal resistance from junction to ambient | $R_{\theta JA}$ | 417 | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range | T_j, T_{stg} | -55 ~ +150 | $^\circ\text{C}$ |

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

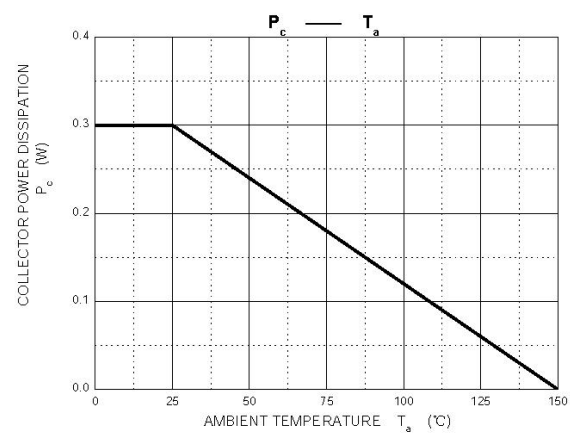
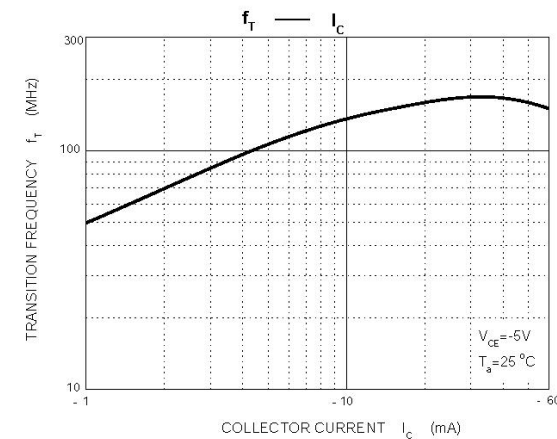
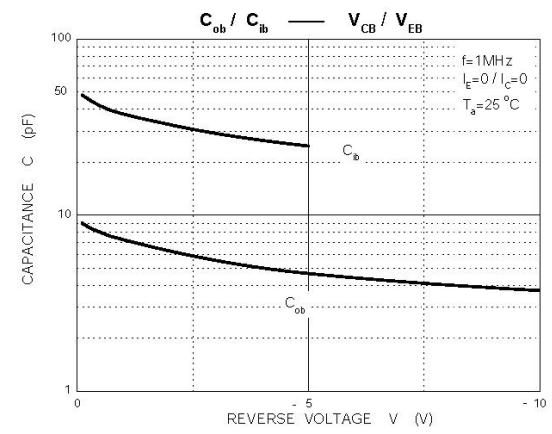
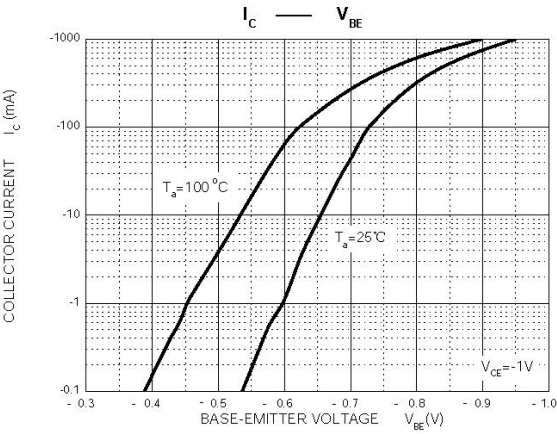
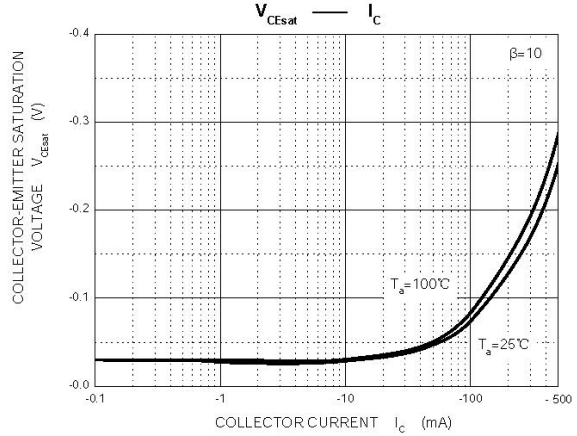
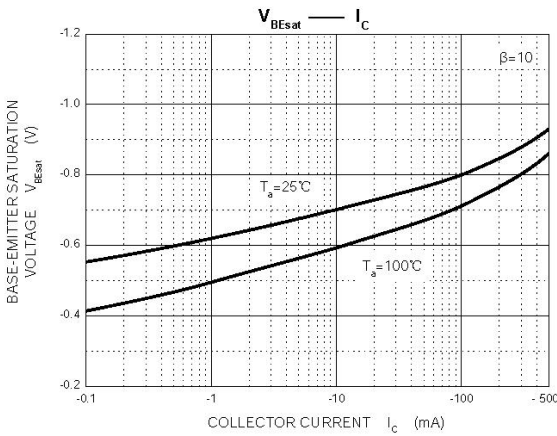
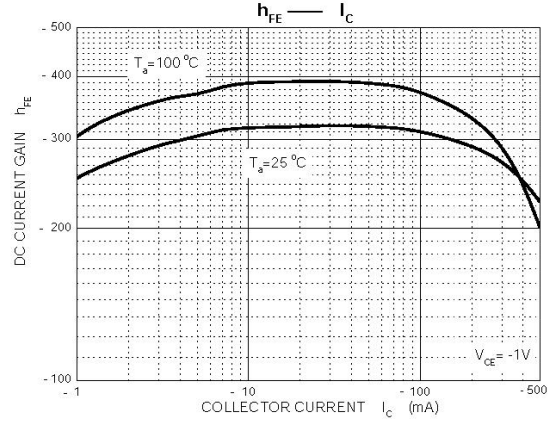
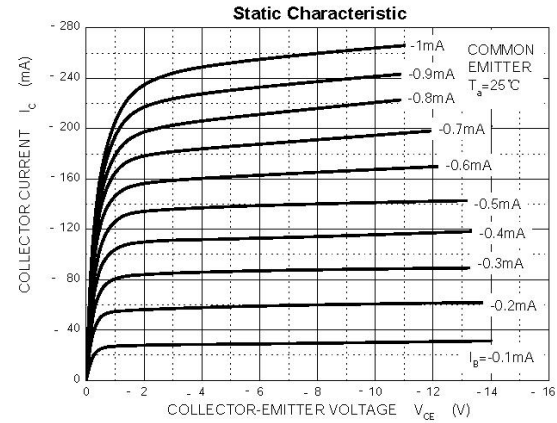
| Parameter | Symbol | Test condition | Min | Max | Unit |
|--------------------------------------|---------------|--|-----|------|---------------|
| Collector-base breakdown voltage | V_{CBO} | $I_C = -10\mu\text{A}, I_E = 0\text{A}$ | -50 | - | V |
| Collector-emitter breakdown voltage | V_{CEO} | $I_C = -10\text{mA}, I_B = 0\text{A}$ | -45 | - | V |
| Emitter-base breakdown voltage | V_{EBO} | $I_E = -1\mu\text{A}, I_C = 0\text{A}$ | -5 | - | V |
| Collector cutoff current | I_{CBO} | $V_{CB} = -45\text{V}, I_E = 0\text{A}$ | - | -0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -4\text{V}, I_C = 0\text{A}$ | - | -0.1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE} = -1\text{V}, I_C = -100\text{mA}$ | 100 | 600 | - |
| | $h_{FE(2)}$ | $V_{CE} = -1\text{V}, I_C = -500\text{mA}$ | 40 | - | - |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -500\text{mA}, I_B = -50\text{mA}$ | - | -0.7 | 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 | $V_{CE} = -5V, I_C = -10mA, f = 100MHz$ | 100 | - | MHz |
|----------------------|-------|---|-----|---|-----|

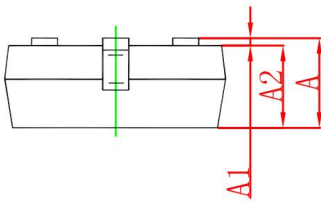
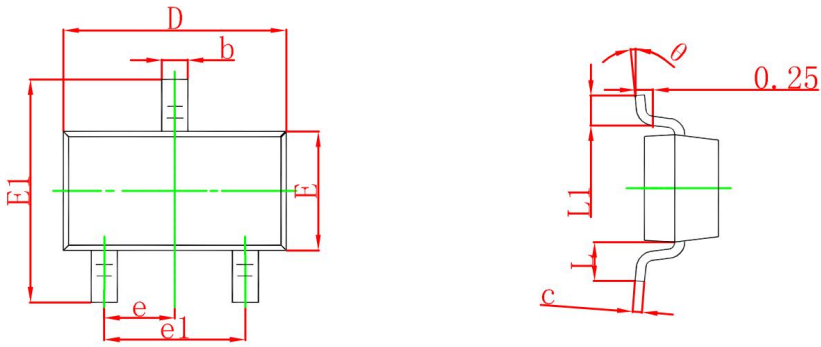
CLASSIFICATION OF $h_{FE(1)}$

| | | | |
|---------|-------------|-------------|-------------|
| Rank | AD-BC807-16 | AD-BC807-25 | AD-BC807-40 |
| Range | 100-250 | 160-400 | 250-600 |
| Marking | $\bar{5}A$ | $\bar{5}B$ | $\bar{5}C$ |

TYPICAL CHARACTERISTICS

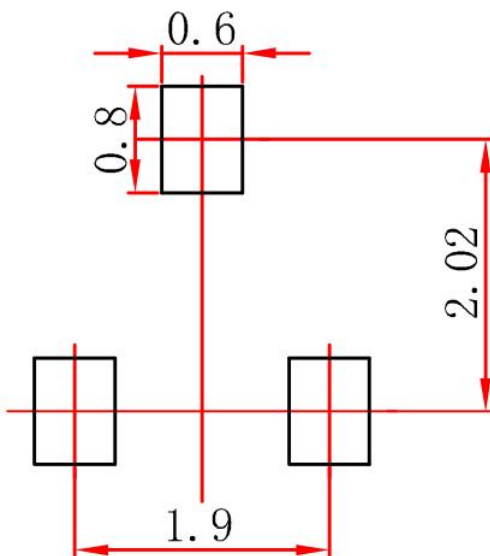


SOT-23 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| theta | 0° | 8° | 0° | 8° |

SOT-23 SUGGESTED PAD LAYOUT

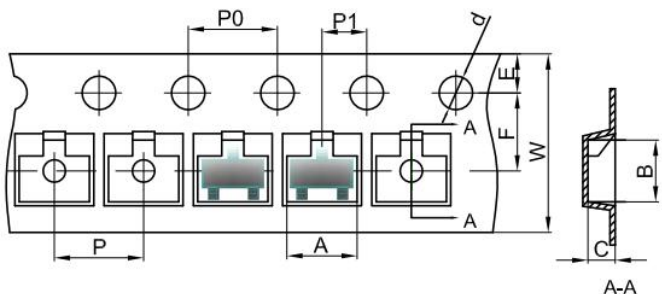


Note:

1. Controlling dimension in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purpose only.

SOT-23 TAPE AND REEL

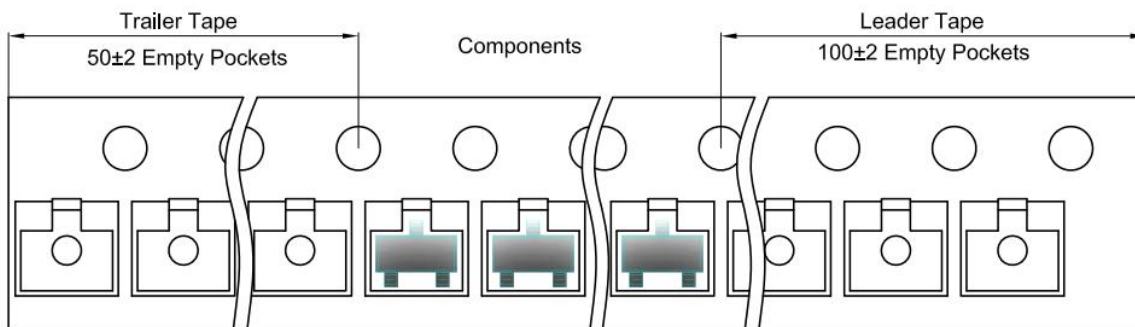
SOT-23 Embossed Carrier Tape



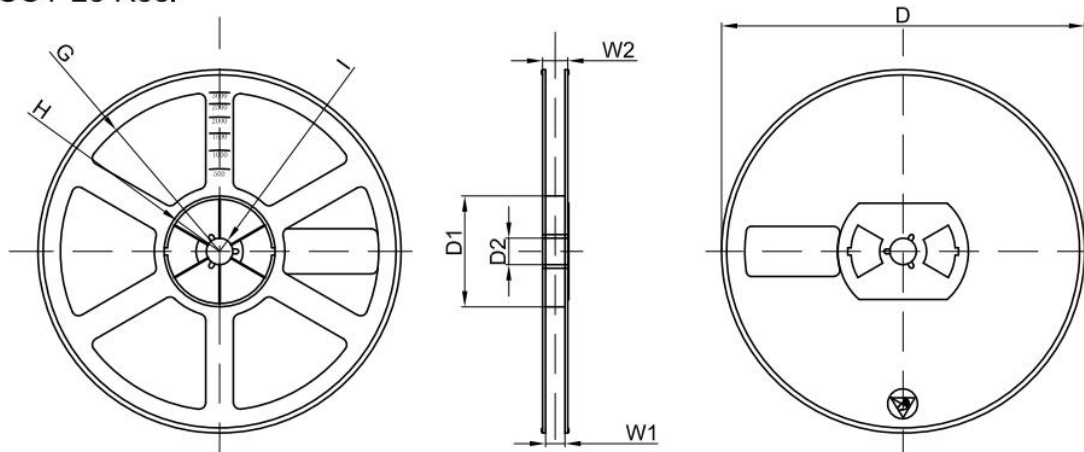
Packaging Description:
 SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

SOT-23 Tape Leader and Trailer



SOT-23 Reel



| Dimensions are in millimeter | | | | | | | | |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7" Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch | 45,000 pcs | 203×203×195 | 180,000 pcs | 438×438×220 | |

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