

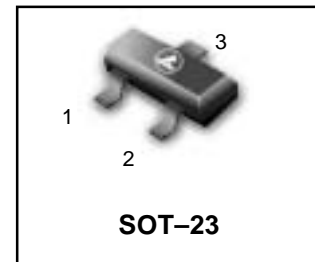
General Purpose Transistors

PNP Silicon

FEATURE

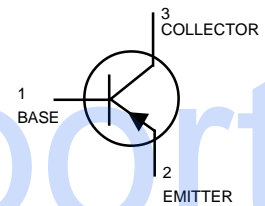
- Collector current capability $I_C = -500$ mA.
- Collector-emitter voltage $V_{CEO(max)} = -45$ V.
- General purpose switching and amplification.
- NPN complement: LBC817 Series.
- Pb-Free Package is available.

LBC807-16LT1
LBC807-25LT1
LBC807-40LT1



DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|---------------|-----------------|----------------|
| LBC807-16LT1 | 5A | 3000/Tape&Reel |
| LBC807-16LT1G | 5A (Pb-Free) | 3000/Tape&Reel |
| LBC807-25LT1 | 5B | 3000/Tape&Reel |
| LBC807-25LT1G | 5B (Pb-Free) | 3000/Tape&Reel |
| LBC807-40LT1 | 5C | 3000/Tape&Reel |
| LBC807-40LT1G | 5C (Pb-Free) | 3000/Tape&Reel |



MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--------------------------------|-----------|-------|------------------|
| Collector-Emitter Voltage | V_{CEO} | -45 | V |
| Collector-Base Voltage | V_{CBO} | -50 | V |
| Emitter-Base Voltage | V_{EBO} | -5.0 | V |
| Collector Current — Continuous | I_C | -500 | mA _{dc} |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|------------------|-------------|----------------------------|
| Total Device Dissipation FR-5 Board, (1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 225 1.8 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 556 | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 300 2.4 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 417 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature | $T_{J, T_{stg}}$ | -55 to +150 | $^\circ\text{C}$ |

1. FR-5 = 1.0 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

LBC807 Series
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

OFF CHARACTERISTICS

| | | | | | |
|---|---------------|------|---|------|---------------|
| Collector–Emitter Breakdown Voltage ($I_C = -10\text{ mA}$) | $V_{(BR)CEO}$ | -45 | — | — | V |
| Collector–Emitter Breakdown Voltage ($V_{EB} = 0, I_C = -10\ \mu\text{A}$) | $V_{(BR)CES}$ | -50 | — | — | V |
| Emitter–Base Breakdown Voltage ($I_E = -1.0\ \mu\text{A}$) | $V_{(BR)EBO}$ | -5.0 | — | — | V |
| Collector Cutoff Current ($V_{CB} = -20\text{ V}$) | I_{CBO} | — | — | -100 | nA |
| ($V_{CB} = -20\text{ V}, T_J = 150^\circ\text{C}$) | | — | — | -5.0 | μA |

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

ON CHARACTERISTICS

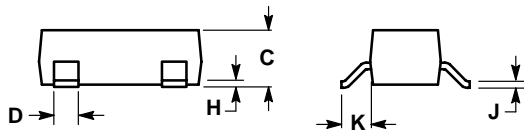
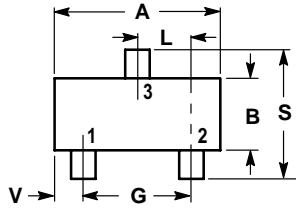
| | | | | | |
|---|---------------|-----|---|------|---|
| DC Current Gain ($I_C = -100\text{ mA}, V_{CE} = -1.0\text{ V}$) | h_{FE} | | | | — |
| LBC807-16 | | 100 | — | 250 | |
| LBC807-25 | | 160 | — | 400 | |
| LBC807-40 | | 250 | — | 600 | |
| ($I_C = -500\text{ mA}, V_{CE} = -1.0\text{ V}$) | | 40 | — | — | |
| Collector–Emitter Saturation Voltage ($I_C = -500\text{ mA}, I_B = -50\text{ mA}$) | $V_{CE(sat)}$ | — | — | -0.7 | V |
| Base–Emitter On Voltage ($I_C = -500\text{ mA}, I_B = -1.0\text{ V}$) | $V_{BE(on)}$ | — | — | -1.2 | V |

SMALL-SIGNAL CHARACTERISTICS

| | | | | | |
|--|-----------|-----|----|---|-----|
| Current–Gain — Bandwidth Product ($I_C = -10\text{ mA}, V_{CE} = -5.0\text{ V}_{dc}, f = 100\text{ MHz}$) | f_T | 100 | — | — | MHz |
| Output Capacitance ($V_{CB} = -10\text{ V}, f = 1.0\text{ MHz}$) | C_{obo} | — | 10 | — | pF |

LBC807 Series

SOT-23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|--------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.1102 | 0.1197 | 2.80 | 3.04 |
| B | 0.0472 | 0.0551 | 1.20 | 1.40 |
| C | 0.0350 | 0.0440 | 0.89 | 1.11 |
| D | 0.0150 | 0.0200 | 0.37 | 0.50 |
| G | 0.0701 | 0.0807 | 1.78 | 2.04 |
| H | 0.0005 | 0.0040 | 0.013 | 0.100 |
| J | 0.0034 | 0.0070 | 0.085 | 0.177 |
| K | 0.0140 | 0.0285 | 0.35 | 0.69 |
| L | 0.0350 | 0.0401 | 0.89 | 1.02 |
| S | 0.0830 | 0.1039 | 2.10 | 2.64 |
| V | 0.0177 | 0.0236 | 0.45 | 0.60 |

