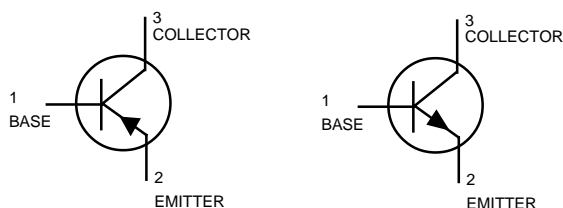


General Purpose Transistors

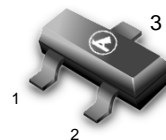


PNP
BCX17LT1
BCX18LT1
NPN
BCX19LT1
BCX20LT1

Voltage and current are negative for PNP transistors

MAXIMUM RATINGS

| Rating | Symbol | Value | | Unit |
|--------------------------------|-----------|----------------------|----------------------|------|
| | | BCX17LT1 BCX19LT1 | BCX18LT1 BCX20LT1 | |
| Collector-Emitter Voltage | V_{CEO} | 45 | 25 | Vdc |
| Collector-Base Voltage | V_{CBO} | 50 | 30 | Vdc |
| Emitter-Base Voltage | V_{EBO} | 5.0 | 5.0 | Vdc |
| Collector Current — Continuous | I_C | 500 | 500 | mAdc |



CASE 318-08, STYLE 6
 SOT-23 (TO-236AB)

DEVICE MARKING

BCX17LT1 = T1; BCX18LT1 = T2; BCX19LT1 = U1; BCX20LT1 = U2

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 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 556 | $^\circ\text{C/W}$ |
| Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 300 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 417 | $^\circ\text{C/W}$ |
| 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.

PNP BCX17LT1 BCX18LT1
NPN BCX19LT1 BCX20LT1

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---------------|-----|-----|-----|-----------------|
| OFF CHARACTERISTICS | | | | | |
| Collector–Emitter Breakdown Voltage ($I_C = 10\text{ mAdc}, I_B = 0$) | $V_{(BR)CEO}$ | 45 | — | — | Vdc |
| | BCX17, 19 | 25 | — | — | |
| | BCX18, 20 | | | | |
| Collector–Emitter Breakdown Voltage ($I_C = 10\ \mu\text{Adc}, I_E = 0$) | $V_{(BR)CES}$ | 50 | — | — | Vdc |
| | BCX17, 19 | 30 | — | — | |
| | BCX18, 20 | | | | |
| Collector Cutoff Current ($V_{CB} = 20\text{ Vdc}, I_E = 0$) | I_{CBO} | — | — | 100 | nAdc |
| ($V_{CB} = 20\text{ Vdc}, I_E = 0, T_A = 150^\circ\text{C}$) | | — | — | 5.0 | μAdc |
| Emitter Cutoff Current ($V_{EB} = 5.0\text{ Vdc}, I_C = 0$) | I_{EBO} | — | — | 10 | μAdc |

ON CHARACTERISTICS

| | | | | | |
|---|---------------|-----|---|------|-----|
| DC Current Gain ($I_C = 100\text{ mAdc}, V_{CE} = 1.0\text{ Vdc}$) | h_{FE} | 100 | — | 600 | — |
| ($I_C = 300\text{ mAdc}, V_{CE} = 1.0\text{ Vdc}$) | | 70 | — | — | |
| ($I_C = 500\text{ mAdc}, V_{CE} = 1.0\text{ Vdc}$) | | 40 | — | — | |
| Collector–Emitter Saturation Voltage ($I_C = 500\text{ mAdc}, I_B = 50\text{ mAdc}$) | $V_{CE(sat)}$ | — | — | 0.62 | Vdc |
| Base–Emitter On Voltage ($I_C = 500\text{ mAdc}, V_{CE} = 1.0\text{ Vdc}$) | $V_{BE(on)}$ | — | — | 1.2 | Vdc |