

2SB1179, 2SB1179A

Silicon PNP Epitaxial Planar Darlington Type

Power Amplifier, Switching
Complementary Pair with 2SD1749, 2SD1749A

■ Features

- High DC current gain (h_{FE})
- High speed switching
- "I Type" package configuration with a cooling fin for direct soldering on PC board of a small-size electronic equipment

■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

| Item | Symbol | Value | Unit | |
|-----------------------------|-----------|------------------------|------------------|---|
| Collector-base voltage | 2SB1179 | -60 | V | |
| | 2SB1179A | -80 | | |
| Collector-emitter voltage | 2SB1179 | -60 | V | |
| | 2SB1179A | -80 | | |
| Emitter-base voltage | V_{EBO} | -5 | V | |
| Peak collector current | I_{CP} | -8 | A | |
| Collector current | I_C | -4 | A | |
| Collector power dissipation | P_C | $T_c=25^\circ\text{C}$ | 15 | W |
| | | $T_a=25^\circ\text{C}$ | 1.3 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ | |
| Storage temperature | T_{stg} | -55 ~ +150 | $^\circ\text{C}$ | |

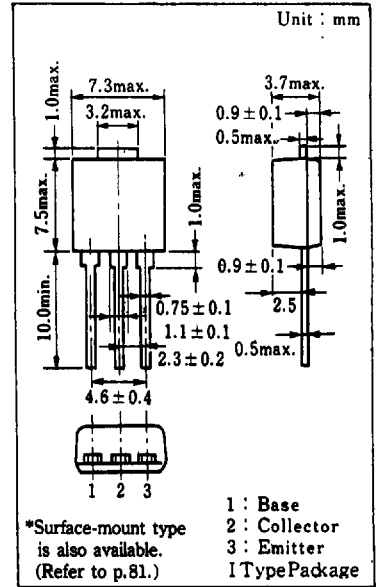
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

| Item | Symbol | Condition | min. | typ. | max. | Unit |
|--------------------------------------|---------------|---|------|------|-------|---------------|
| Collector cutoff current | 2SB1179 | $V_{CB} = -60\text{V}, I_E = 0$ | | | -200 | μA |
| | 2SB1179A | $V_{CB} = -80\text{V}, I_E = 0$ | | | -200 | |
| Collector cutoff current | 2SB1179 | $V_{CE} = -40\text{V}, I_B = 0$ | | | -500 | μA |
| | 2SB1179A | $V_{CE} = -40\text{V}, I_B = 0$ | | | -500 | |
| Emitter cutoff current | I_{EBO} | $V_{EB} = -5\text{V}, I_C = 0$ | | | -2 | mA |
| Collector-emitter voltage | 2SB1179 | $I_C = -30\text{mA}, I_B = 0$ | -60 | | | V |
| | 2SB1179A | | -80 | | | |
| DC current gain | h_{FE1} | $V_{CE} = -3\text{V}, I_C = -0.5\text{A}$ | 1000 | | | |
| | h_{FE2}^* | $V_{CE} = -3\text{V}, I_C = -3\text{A}$ | 1000 | | 10000 | |
| Base-emitter voltage | V_{BE} | $V_{CE} = -3\text{V}, I_C = -3\text{A}$ | | | -2.5 | V |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -3\text{A}, I_B = -12\text{mA}$ | | | -2 | V |
| | | $I_C = -5\text{A}, I_B = -20\text{mA}$ | | | -4 | |
| Transition frequency | f_T | $V_{CE} = -10\text{V}, I_C = -0.5\text{A}, f = 1\text{MHz}$ | | 20 | | MHz |
| Turn-on time | t_{on} | $I_C = -3\text{A}$ | | 0.3 | | μs |
| Storage time | t_{sig} | $I_{B1} = -12\text{mA}, I_{B2} = 12\text{mA}$ | | 2 | | μs |
| Collector current fall time | t_f | $V_{CC} = -50\text{V}$ | | 0.5 | | μs |

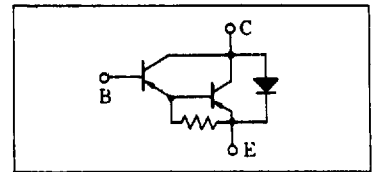
* h_{FE2} Classifications

| Class | R | Q | P |
|-----------|-----------|-----------|------------|
| h_{FE2} | 1000~2500 | 2000~5000 | 4000~10000 |

■ Package Dimensions



■ Inner Circuit



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