

Silicon PNP Transistor

BD378

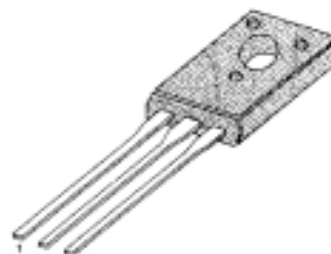
DATASHEET

Medium Power And Switching Applications

Technical Data (Short Form):

Case: TO-126

| | | |
|-----|---|--------|
| Ucb | - | 75V |
| Uce | - | 60V |
| Ic | - | 2A |
| N | - | 25W |
| F | - | - |
| hFE | - | 40-375 |



1. Emitter 2. Collector 3. Base

OEM: Samsung

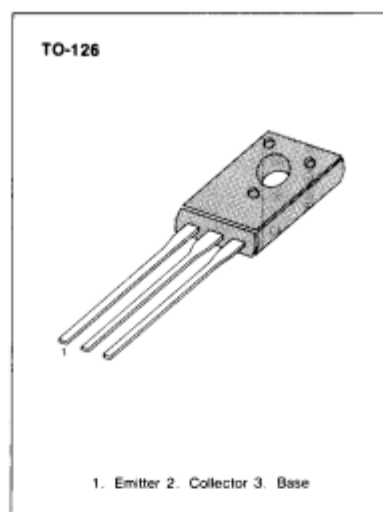
Source: Samsung CD 1995

MEDIUM POWER LINEAR AND SWITCHING APPLICATIONS

• Complement to BD375, BD377 and BD379 respectively

ABSOLUTE MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

| Characteristic | Symbol | Rating | Unit |
|--|-----------|-----------|------------------|
| Collector Base Voltage : BD376 | V_{CBO} | -50 | V |
| : BD378 | | -75 | V |
| : BD380 | | -100 | V |
| Collector Emitter Voltage: BD376 | V_{CEO} | -45 | V |
| : BD378 | | -60 | V |
| : BD380 | | -80 | V |
| Emitter Base Voltage | V_{EBO} | -5 | V |
| Collector Current (DC) | I_C | -2 | A |
| Collector Current (Pulse) | I_c | -3 | A |
| Base Current | I_B | -1 | A |
| Collector Dissipation ($T_c = 25^\circ\text{C}$) | P_C | 25 | W |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 ~ 150 | $^\circ\text{C}$ |



ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$)

| Characteristic | Symbol | Test Condition | Min | Typ | Max | Unit | |
|--|----------------|--|---------------------------------|-----|------|---------------|---------------|
| *Collector Emitter Sustaining Voltage: BD376 | $V_{CEO(SUS)}$ | $I_C = -100\text{mA}, I_B = 0$ | -45 | | | V | |
| : BD378 | | | -60 | | | V | |
| : BD380 | | | -80 | | | V | |
| Collector Base Voltage : BD376 | V_{CBO} | $I_C = -100\mu\text{A}, I_E = 0$ | -50 | | | V | |
| : BD378 | | | -75 | | | V | |
| : BD380 | | | -100 | | | V | |
| Collector Cutoff Current : BD376 | I_{CBO} | $V_{CB} = -45\text{V}, I_E = 0$ | | | -2 | μA | |
| : BD378 | | | $V_{CB} = -60\text{V}, I_E = 0$ | | | -2 | μA |
| : BD380 | | | $V_{CB} = -80\text{V}, I_E = 0$ | | | -2 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = -5\text{V}, I_C = 0$ | | | -100 | μA | |
| *DC Current Gain | h_{FE1} | $V_{CE} = -2\text{V}, I_C = -0.15\text{A}$ | 40 | | 375 | | |
| | h_{FE2} | $V_{CE} = -2\text{V}, I_C = -1\text{A}$ | 20 | | | | |
| *Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -1\text{A}, I_B = -0.1\text{A}$ | | | -1 | V | |
| *Base Emitter On Voltage | $V_{BE(on)}$ | $V_{CE} = -2\text{V}, I_C = -1\text{A}$ | | | -1.5 | V | |
| Turn On Time | t_{on} | $V_{CC} = -30\text{V}, I_C = -0.5\text{A}$ $I_{B1} = -0.05\text{A}$ | | 50 | | nS | |
| Turn Off Time | t_{off} | $V_{CC} = -30\text{V}, I_C = -0.5\text{A}$ $I_{B1} = -I_{B2} = -0.05\text{A}$ | | 500 | | nS | |

*Pulse Test: $PW = 300\mu\text{s}$, duty cycle = 2% pulsed

h_{FE} (1) CLASSIFICATION

| Classification | 6 | 10 | 16 | 25 |
|----------------|--------|--------|---------|---------|
| h_{FE1} | 40-100 | 63-160 | 100-250 | 150-375 |

