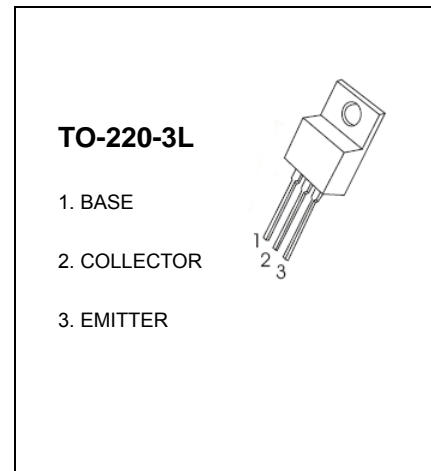


## TO-220-3L Plastic-Encapsulate Transistors

### 2SB1274 TRANSISTOR (PNP)

#### FEATURES

- Wide ASO (Adoption of MBIT Process).
- Low Saturation Voltage.
- High Reliability.
- High Breakdown Voltage.



#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol    | Parameter                     | Value   | Unit               |
|-----------|-------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector- Base Voltage       | -60     | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage     | -60     | V                  |
| $V_{EBO}$ | Emitter-Base Voltage          | -6      | V                  |
| $I_C$     | Collector Current -Continuous | -3      | A                  |
| $P_C$     | Collector Power Dissipation   | 2       | W                  |
| $T_J$     | Junction Temperature          | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature           | -55-150 | $^{\circ}\text{C}$ |

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

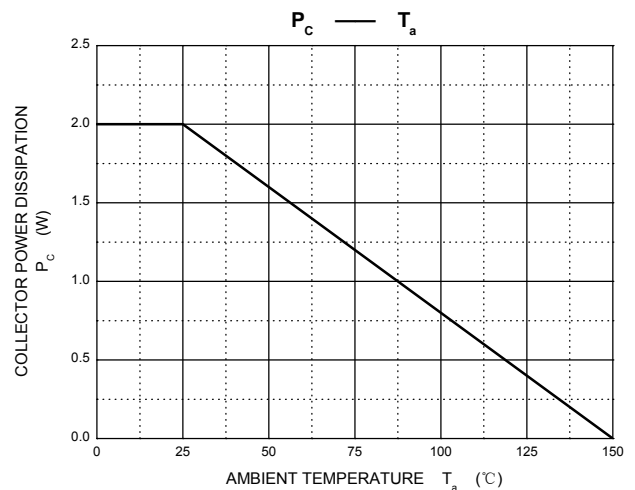
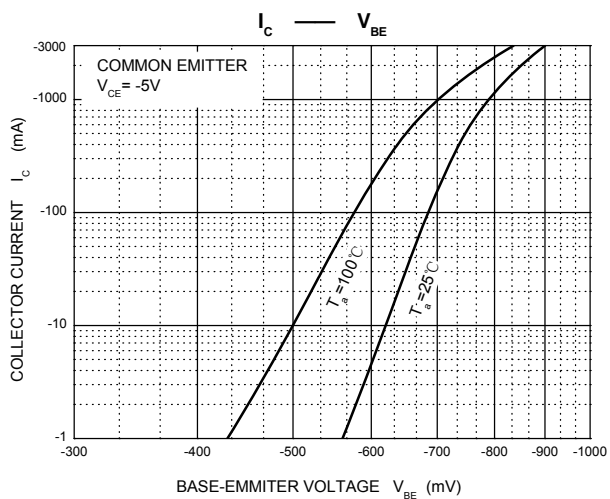
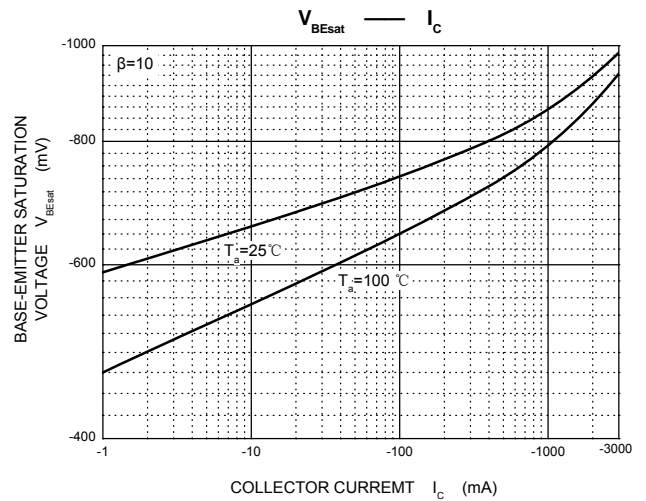
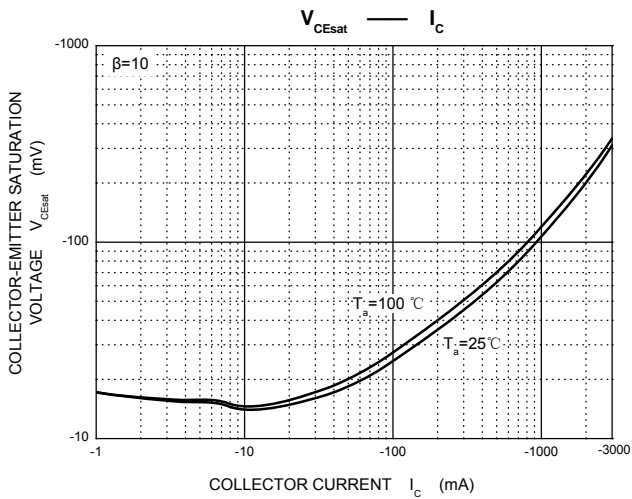
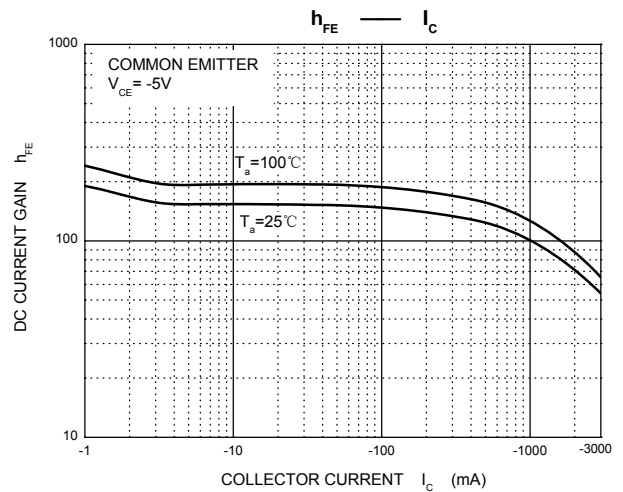
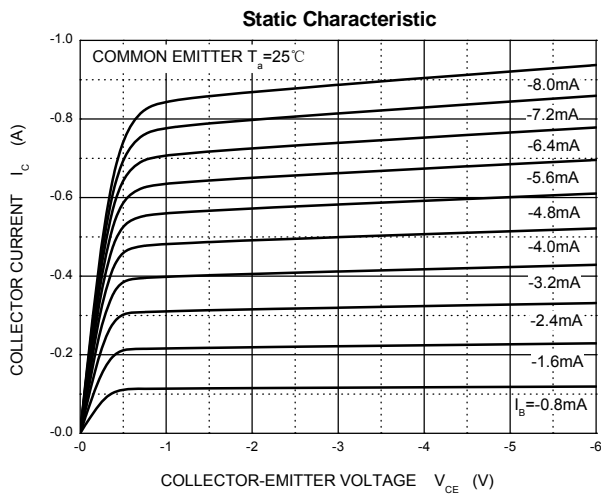
| Parameter                            | Symbol        | Test conditions                                  | Min | Typ | Max  | Unit          |
|--------------------------------------|---------------|--|-----|-----|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -1\text{mA}, I_E = 0$                     | -60 |     |      | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -5\text{mA}, I_B = 0$                     | -60 |     |      | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = -1\text{mA}, I_C = 0$                     | -6  |     |      | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -40\text{V}, I_E = 0$                  |     |     | -0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -4\text{V}, I_C = 0$                   |     |     | -0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = -5\text{V}, I_C = -500\text{mA}$       | 70  |     | 280  |               |
|                                      | $h_{FE(2)}$   | $V_{CE} = -5\text{V}, I_C = -3\text{A}$          | 20  |     |      |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -2\text{A}, I_B = -200\text{mA}$          |     |     | -1   | V             |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE} = -5\text{V}, I_C = -500\text{mA}$       |     |     | -1   | V             |
| Transition frequency                 | $f_T$         | $V_{CE} = -5\text{V}, I_C = -500\text{mA}$       |     | 100 |      | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$ |     | 60  |      | pF            |

#### CLASSIFICATION OF $h_{FE(1)}$

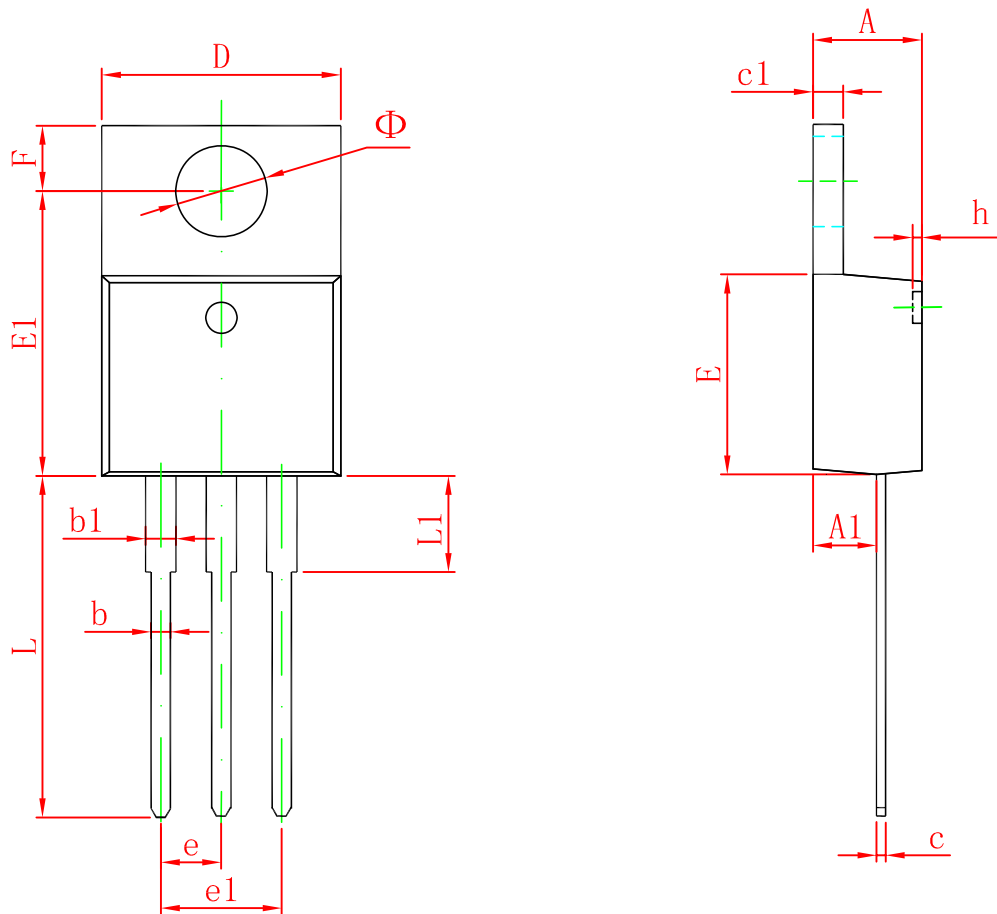
| Rank  | Q      | R       | S       |
|-------|--------|---------|---------|
| Range | 70-140 | 100-200 | 140-280 |

# Typical Characteristics

# 2SB1274



# TO-220-3L Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 4.470                     | 4.670  | 0.176                | 0.184 |
| A1     | 2.520                     | 2.820  | 0.099                | 0.111 |
| b      | 0.710                     | 0.910  | 0.028                | 0.036 |
| b1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| c      | 0.310                     | 0.530  | 0.012                | 0.021 |
| c1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| D      | 10.010                    | 10.310 | 0.394                | 0.406 |
| E      | 8.500                     | 8.900  | 0.335                | 0.350 |
| E1     | 12.060                    | 12.460 | 0.475                | 0.491 |
| e      | 2.540 TYP                 |        | 0.100 TYP            |       |
| e1     | 4.980                     | 5.180  | 0.196                | 0.204 |
| F      | 2.590                     | 2.890  | 0.102                | 0.114 |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| L      | 13.400                    | 13.800 | 0.528                | 0.543 |
| L1     | 3.560                     | 3.960  | 0.140                | 0.156 |
| $\Phi$ | 3.735                     | 3.935  | 0.147                | 0.155 |