

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

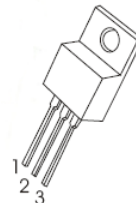
### 2SB1375 TRANSISTOR (PNP)

#### FEATURES

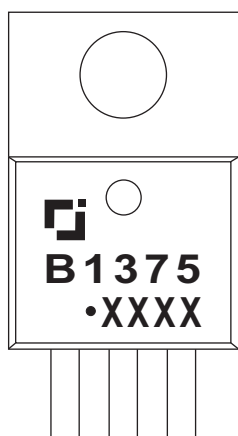
- High Power Dissipation:  $P_C=25W(T_C=25^{\circ}C)$
- Low voltage:  $V_{CE(sat)}=-1.5V(Max)(I_C=-2A, I_B=-0.2A)$
- Collector Metal(Fin)is Coverd with Mold Regin
- Complementary to 2SD2012

#### TO-220-3L

1. BASE
2. COLLECTOR
3. EMITTER

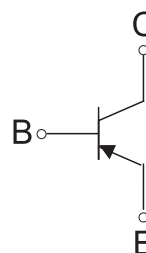


#### MARKING



B1375=Device code  
Solid dot=Green moldinn compound device,  
if none,the normal device  
XXXX=Code

#### Equivalent Circuit



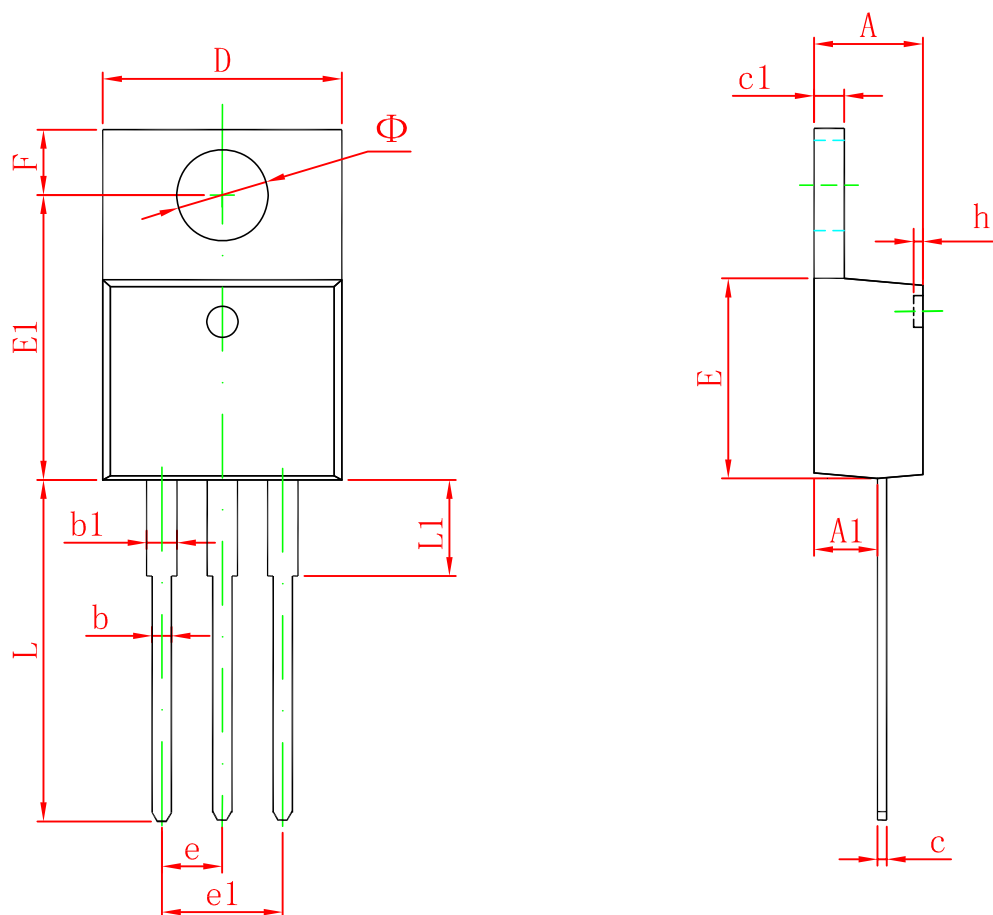
#### MAXIMUM RATINGS ( $T_a=25^{\circ}C$ unless otherwise noted )

| Symbol         | Parameter                                        | Value   | Unit        |
|----------------|--------------------------------------------------|---------|-------------|
| $V_{CBO}$      | Collector-Base Voltage                           | -60     | V           |
| $V_{CEO}$      | Collector-Emitter Voltage                        | -60     | V           |
| $V_{EBO}$      | Emitter-Base Voltage                             | -7      | V           |
| $I_C$          | Collector Current -Continuous                    | -3      | A           |
| $P_C$          | Collector Dissipation                            | 2       | W           |
| $T_J, T_{stg}$ | Operation Junction and Storage Temperature Range | -55-150 | $^{\circ}C$ |

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

| Parameter                            | Symbol        | Test conditions              | Min | Typ | Max  | Unit    |
|--------------------------------------|---------------|------------------------------|-----|-----|------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=-100\mu A, I_E=0$       | -60 |     |      | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=-50mA, I_B=0$           | -60 |     |      | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=-100\mu A, I_C=0$       | -7  |     |      | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=-60V, I_E=0$         |     |     | -10  | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=-7V, I_C=0$          |     |     | -10  | $\mu A$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=-5V, I_C=-0.5A$      | 100 |     | 320  |         |
|                                      | $h_{FE(2)}$   | $V_{CE}=-5V, I_C=-2A$        | 15  |     |      |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-2A, I_B=-0.2A$         |     |     | -1.5 | V       |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE}=-5V, I_C=-0.5A$      |     |     | -1   | V       |
| Transition frequency                 | $f_T$         | $V_{CE}=-5V, I_C=-0.5A$      |     | 9   |      | MHz     |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=-10V, I_E=0, f=1MHz$ |     | 50  |      | pF      |

## 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 |
| Φ      | 3.735                     | 3.935  | 0.147                | 0.155 |