

## / Descriptions

TO-220F          PNP          Silicon PNP transistor in a TO-220F Plastic Package.

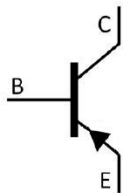
## / Features

High breakdown voltage, excellent current characteristics.

## / Applications

TV vertical output, audio output driver and general purpose amplifier applications.

## / Equivalent Circuit



## / Pinning



PIN1   Base          PIN 2   Collector          PIN 3   Emitter

## / $h_{FE}$ Classifications & Marking

See Marking Instructions.

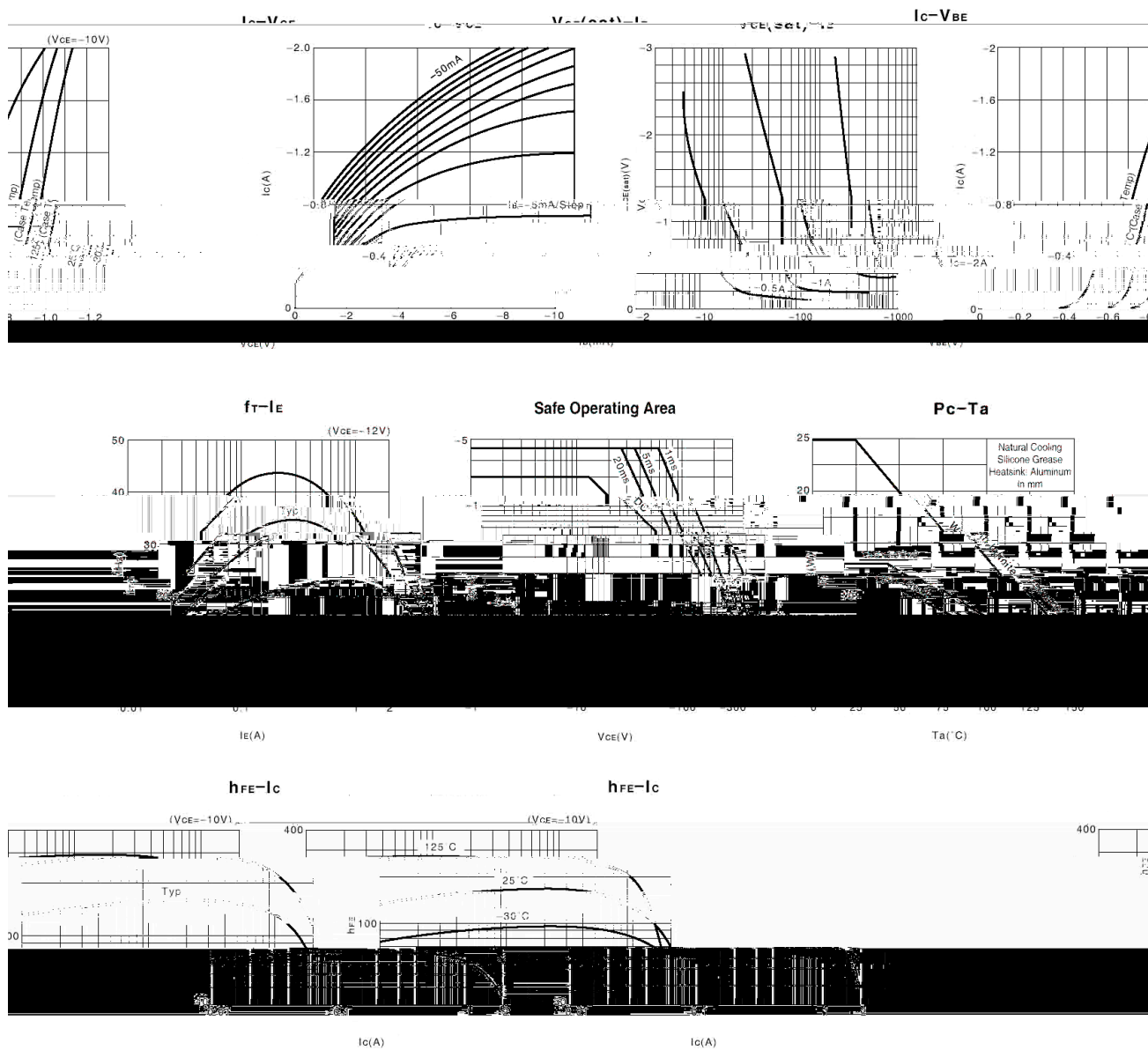
/ Absolute Maximum Ratings( $T_a=25^\circ\text{C}$ )

| Parameter                      | Symbol                      | Rating  | Unit |
|--------------------------------|-----------------------------|---------|------|
| Collector to Base Voltage      | $V_{CBO}$                   | -200    | V    |
| Collector to Emitter Voltage   | $V_{CEO}$                   | -200    | V    |
| Emitter to Base Voltage        | $V_{EBO}$                   | -6.0    | V    |
| Collector Current - Continuous | $I_C$                       | -2.0    | A    |
| Base Current                   | $I_B$                       | -1.0    | A    |
| Collector Power Dissipation    | $P_C(T_c=25^\circ\text{C})$ | 25      | W    |
| Junction Temperature           | $T_j$                       | 150     |      |
| Storage Temperature Range      | $T_{stg}$                   | -55~150 |      |

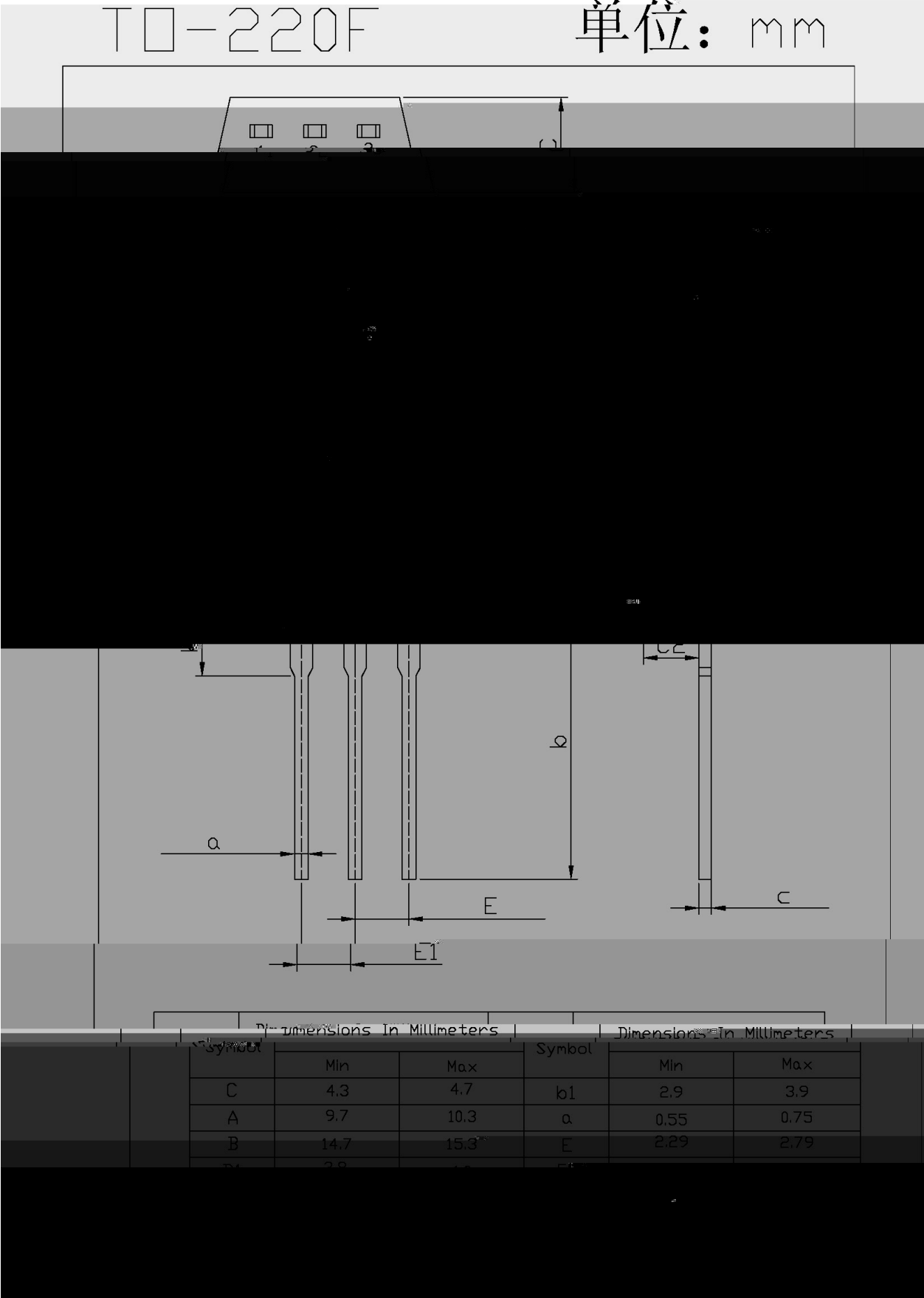
/ Electrical Characteristics( $T_a=25^\circ\text{C}$ )

| Parameter                               | Symbol        | Test Conditions                          | Min  | Typ  | Max  | Unit          |
|-----------------------------------------|---------------|------------------------------------------|------|------|------|---------------|
| Collector to Base Breakdown Voltage     | $V_{CBO}$     | $I_C=-25\text{mA}$ $I_E=0$               | -200 |      |      | V             |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=-200\text{V}$ $I_E=0$            |      |      | -10  | $\mu\text{A}$ |
| Emitter Cut-Off Current                 | $I_{EBO}$     | $V_{EB}=-6.0\text{V}$ $I_C=0$            |      |      | -10  | $\mu\text{A}$ |
| DC Current Gain                         | $h_{FE}$      | $V_{CE}=-10\text{V}$ $I_C=-700\text{mA}$ | 60   |      | 200  |               |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-700\text{mA}$ $I_B=-70\text{mA}$   |      |      | -1.0 | V             |
| Base to Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=-500\text{mA}$ $I_B=-50\text{mA}$   |      | -0.9 | -1.2 | V             |
| Transition Frequency                    | $f_T$         | $V_{CE}=-12\text{V}$ $I_E=200\text{mA}$  |      | 20   |      | MHz           |
| Collector output capacitance            | $C_{ob}$      | $V_{CB}=-10\text{V}$ $f=1.0\text{MHz}$   |      | 60   |      | pF            |

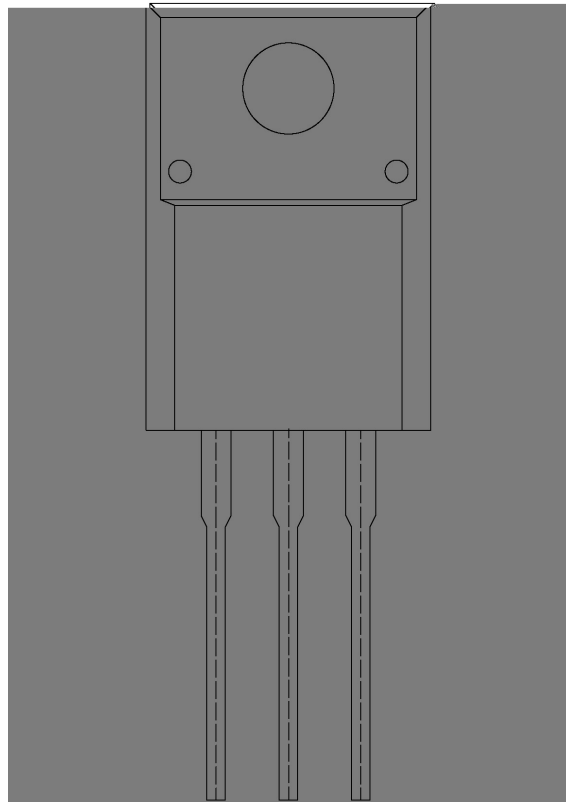
## / Electrical Characteristic Curve



/ Package Dimensions

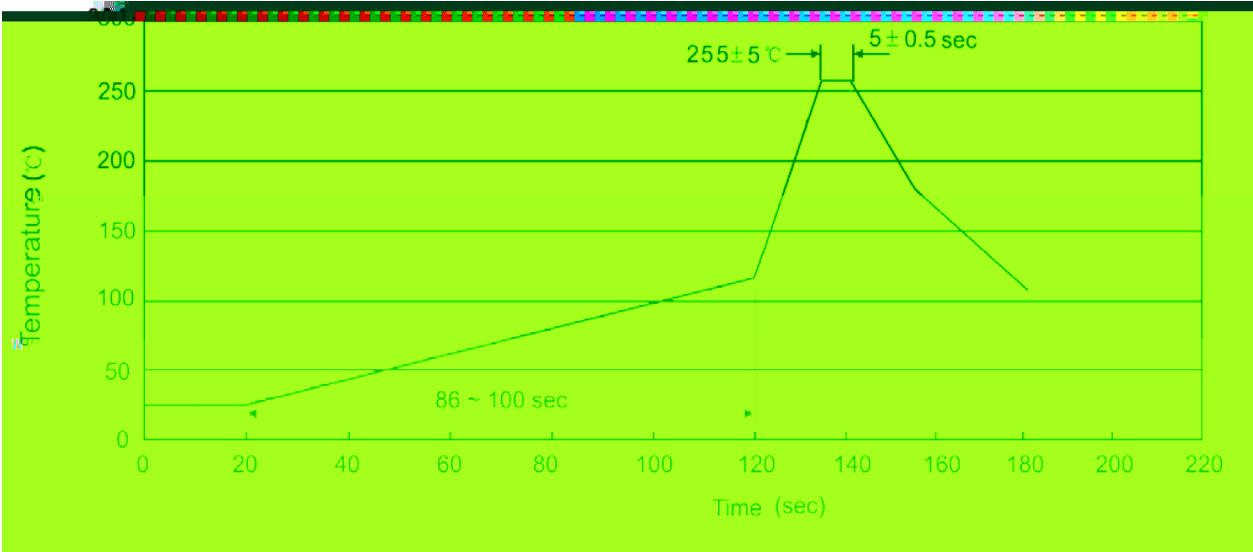


/ Marking Instructions



BR  
A1668

(     ) / Temperature Profile for Dip Soldering(Pb-Free)



Note:

1                    25   150                    60   90sec;

1.Preheating:25~150