

**/ Descriptions**

TO-220

NPN

Silicon NPN transistor in a TO-220 Plastic Package.

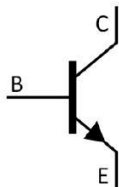
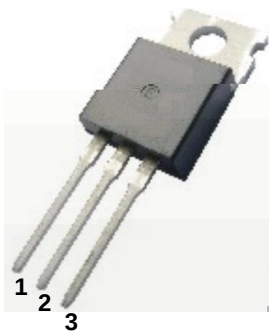
**/ Features**

, 2SB834

High DC current gain, low saturation voltage, high power dissipation, complementary to 2SB834.

**/ Applications**

Audio frequency power amplifier applications.

**/ Equivalent Circuit****/ Pinning**

PIN1 Base      PIN 2 Collector      PIN 3 Emitter

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

| $h_{FE}$ Classifications<br>Symbol | O      | Y       | GR      |
|------------------------------------|--------|---------|---------|
| $h_{FE}$ Range                     | 60 120 | 100 200 | 150 300 |

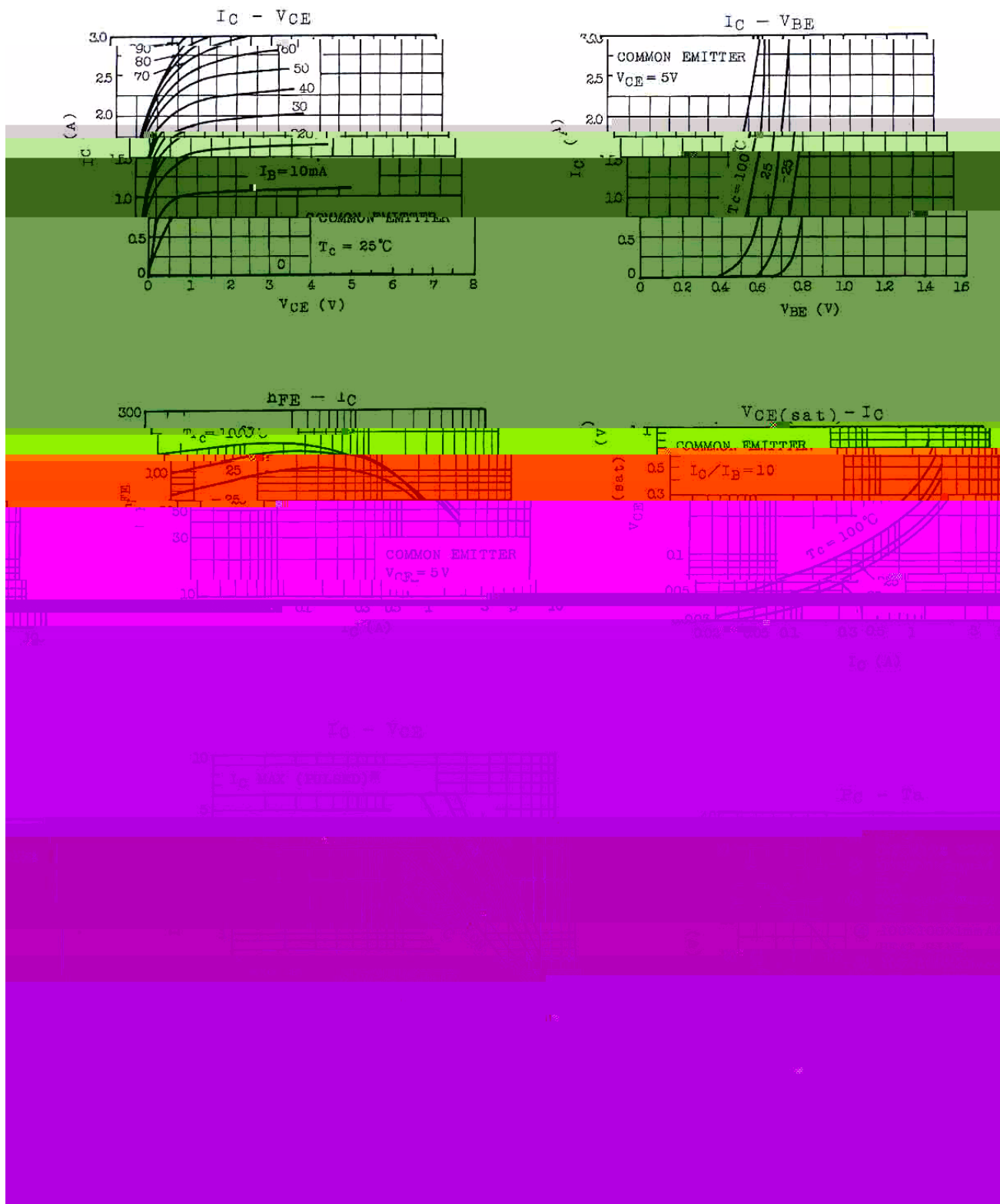
/ Absolute Maximum Ratings( $T_a=25^\circ\text{C}$ )

| Parameter                      | Symbol                      | Rating    | Unit |
|--------------------------------|-----------------------------|-----------|------|
| Collector to Base Voltage      | $V_{CBO}$                   | 60        | V    |
| Collector to Emitter Voltage   | $V_{CEO}$                   | 60        | V    |
| Emitter to Base Voltage        | $V_{EBO}$                   | 7.0       | V    |
| Collector Current - Continuous | $I_C$                       | 3.0       | A    |
| Base Current - Continuous      | $I_B$                       | 0.5       | A    |
| Collector Power Dissipation    | $P_C$                       | 1.5       | W    |
|                                | $P_C(T_C=25^\circ\text{C})$ | 30        | W    |
| Junction Temperature           | $T_j$                       | 150       |      |
| Storage Temperature Range      | $T_{stg}$                   | -55 ~ 150 |      |

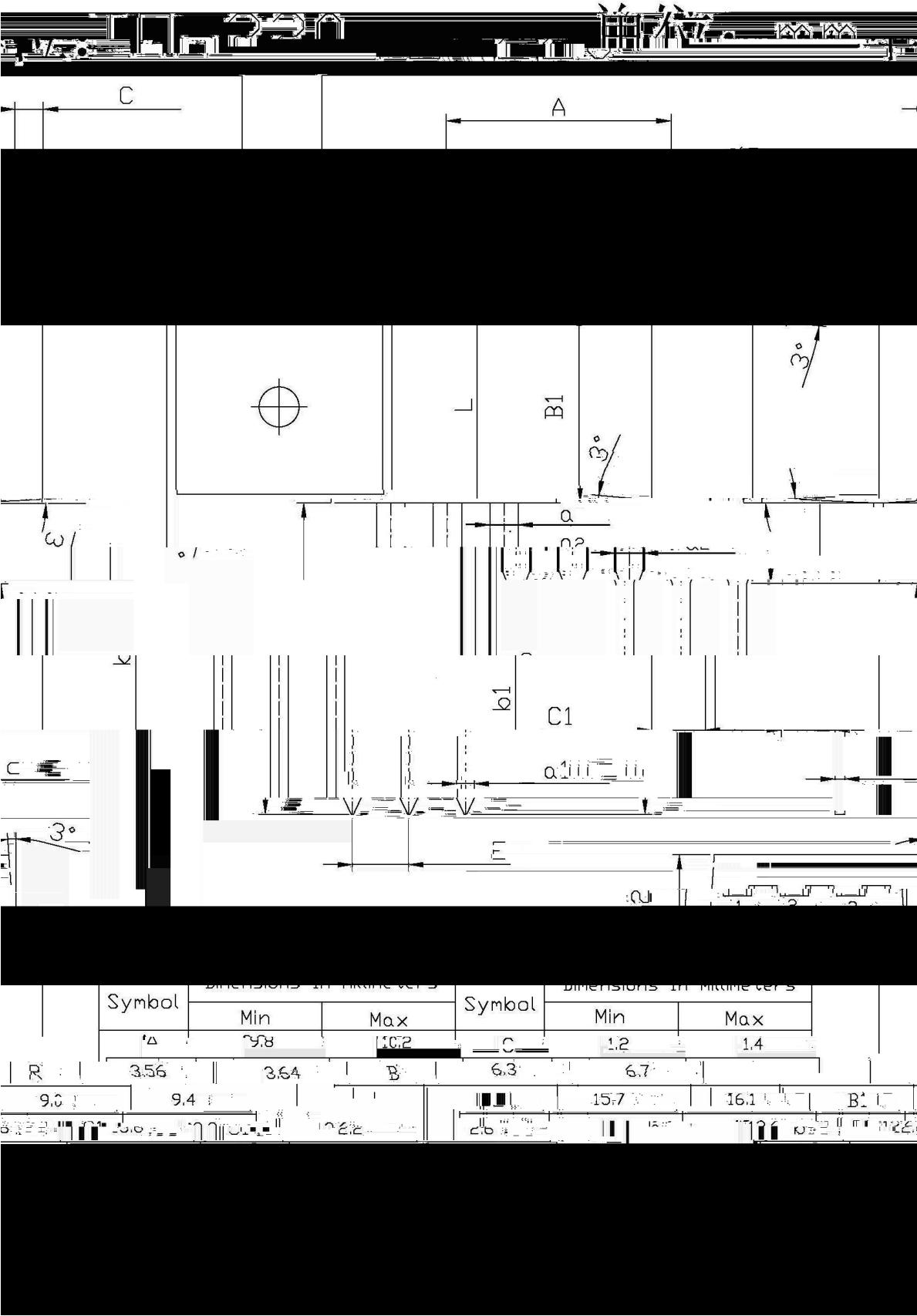
/ Electrical Characteristics( $T_a=25^\circ\text{C}$ )

| Parameter                               | Symbol        | Test Conditions                                  | Min | Typ  | Max | Unit          |
|-----------------------------------------|---------------|--------------------------------------------------|-----|------|-----|---------------|
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C=50\text{mA}$ $I_B=0$                        | 60  |      |     | V             |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=60\text{V}$ $I_E=0$                      |     |      | 100 | $\mu\text{A}$ |
| Emitter Cut-Off Current                 | $I_{EBO}$     | $V_{EB}=7.0\text{V}$ $I_C=0$                     |     |      | 100 | $\mu\text{A}$ |
| DC Current Gain                         | $h_{FE}$      | $V_{CE}=5.0\text{V}$ $I_C=0.5\text{A}$           | 60  |      | 300 |               |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=3.0\text{A}$ $I_B=0.3\text{A}$              |     | 0.25 | 1.0 | V             |
| Base to Emitter Voltage                 | $V_{BE}$      | $V_{CE}=5.0\text{V}$ $I_C=0.5\text{A}$           |     | 0.7  | 1.0 | V             |
| Transition Frequency                    | $f_T$         | $V_{CE}=5.0\text{V}$ $I_C=0.5\text{A}$           |     | 3.0  |     | MHz           |
| Turn-On Time                            | $C_{ob}$      | $V_{CB}=10\text{V}$ $I_E=0$<br>$f=1.0\text{MHz}$ |     | 70   |     | pF            |
| Turn-On Time                            | $t_{on}$      | $I_{B1}=-I_{B2}=0.2\text{A}$                     |     | 0.8  |     | $\mu\text{s}$ |
| Storage Time                            | $t_{stg}$     |                                                  |     | 1.5  |     | $\mu\text{s}$ |
| Fall Time                               | $t_f$         |                                                  |     | 0.8  |     | $\mu\text{s}$ |

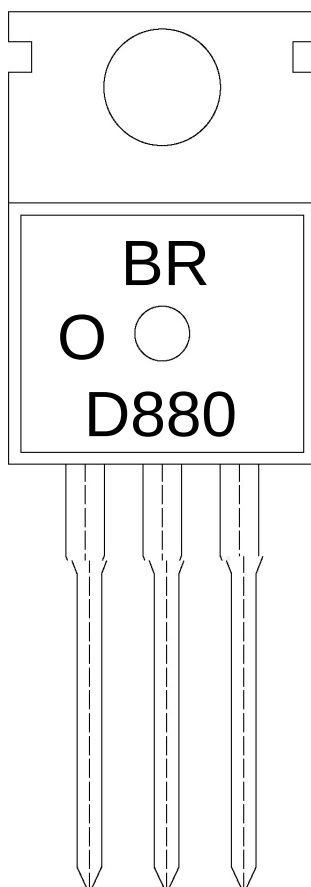
**/ Electrical Characteristic Curve**



/ Package Dimensions



/ Marking Instructions



BR

D880

O:  $h_{FE}$

\*\*\*\*

Note:

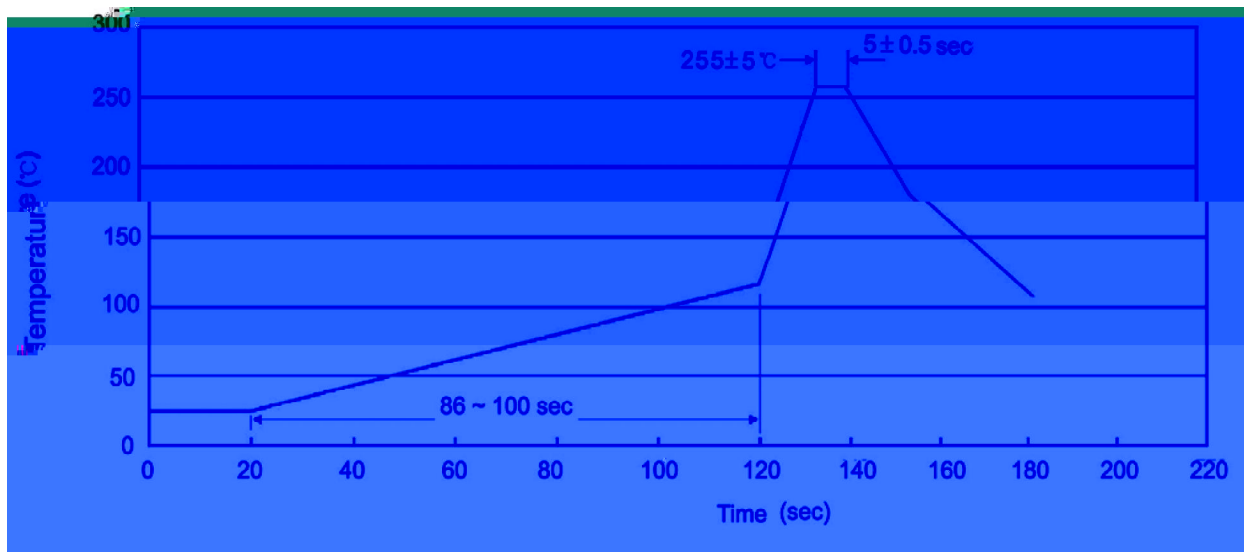
BR: Company Code

D880: Product Type.

O:  $h_{FE}$  Classifications Symbol

\*\*\*\*: Lot No. Code, code change with Lot No.

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



Note:

- |   |       |     |           |        |                                         |
|---|-------|-----|-----------|--------|-----------------------------------------|
| 1 | 25    | 150 | 60        | 90sec; | 1.Preheating:25~150 , Time:60~90sec.    |
| 2 | 255±5 |     | 5±0.5sec; |        | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 |       | 2   | 10        | /sec.  | 3. Cooling Speed: 2~10 /sec.            |

/ Resistance to Soldering Heat Test Conditions

270±5      10±1 sec.      Temp.:270±5      Time:10±1 sec

/ Packaging SPEC.

/ BULK

| Package Type | Units |  |  |  |  | Dimension (unit mm <sup>3</sup> ) |  |  |
|--------------|-------|--|--|--|--|-----------------------------------|--|--|
|              |       |  |  |  |  |                                   |  |  |
|              |       |  |  |  |  |                                   |  |  |

/ TUBE

| Package Type | Units |  |  |  |  | Dimension (unit mm <sup>3</sup> ) |  |  |
|--------------|-------|--|--|--|--|-----------------------------------|--|--|
|              |       |  |  |  |  |                                   |  |  |
|              |       |  |  |  |  |                                   |  |  |

/ Notices