

## / Descriptions

TO-220

NPN

Silicon NPN transistor in a TO-220 Plastic Package.

## / Features

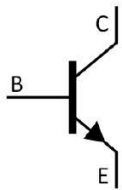
, 2SB834

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

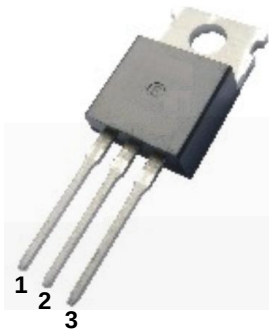
## / Applications

Audio frequency power amplifier applications.

## / Equivalent Circuit



## / Pinning



| PIN1 | Base | PIN 2 | Collector | PIN 3 | Emitter |
|------|------|-------|-----------|-------|---------|
|------|------|-------|-----------|-------|---------|

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

|                                           |        |         |         |
|-------------------------------------------|--------|---------|---------|
| h <sub>FE</sub> Classifications<br>Symbol | O      | Y       | GR      |
| h <sub>FE</sub> Range                     | 60~120 | 100~200 | 150~300 |

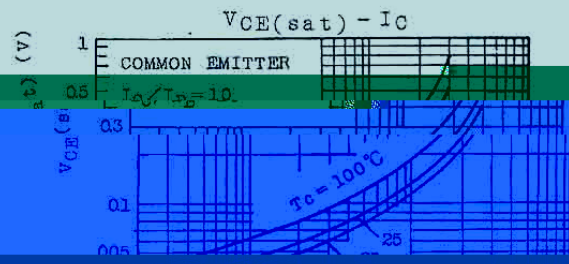
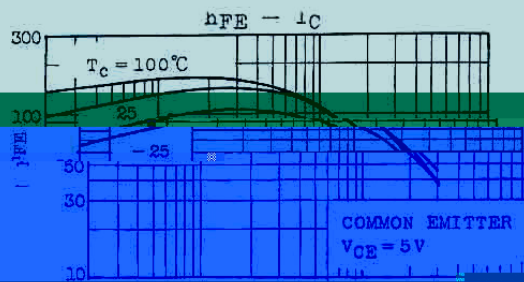
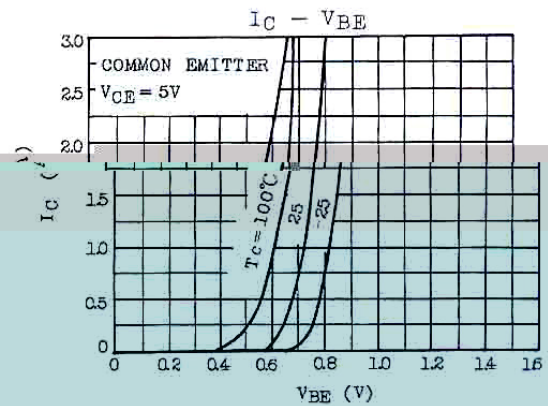
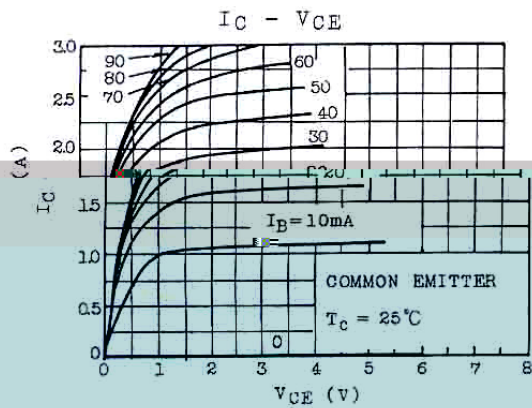
**/ Absolute Maximum Ratings(Ta=25 )**

| 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    |
|                                | $P_C(T_C=25 )$ | 30      | W    |
| Junction Temperature           | $T_j$          | 150     |      |
| Storage Temperature Range      | $T_{stg}$      | -55~150 |      |

**/ Electrical Characteristics(Ta=25 )**

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

**/ Electrical Characteristic Curve**

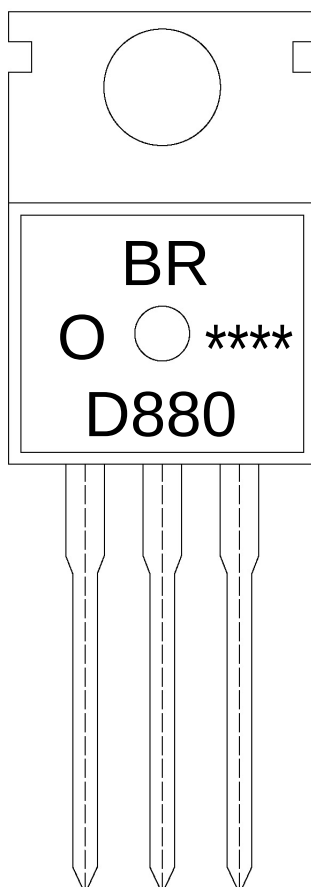


/ Package Dimensions

单位: mm      TO-220      E



/ Marking Instructions



BR

D880

O:  $h_{FE}$

\*\*\*\*

Note:

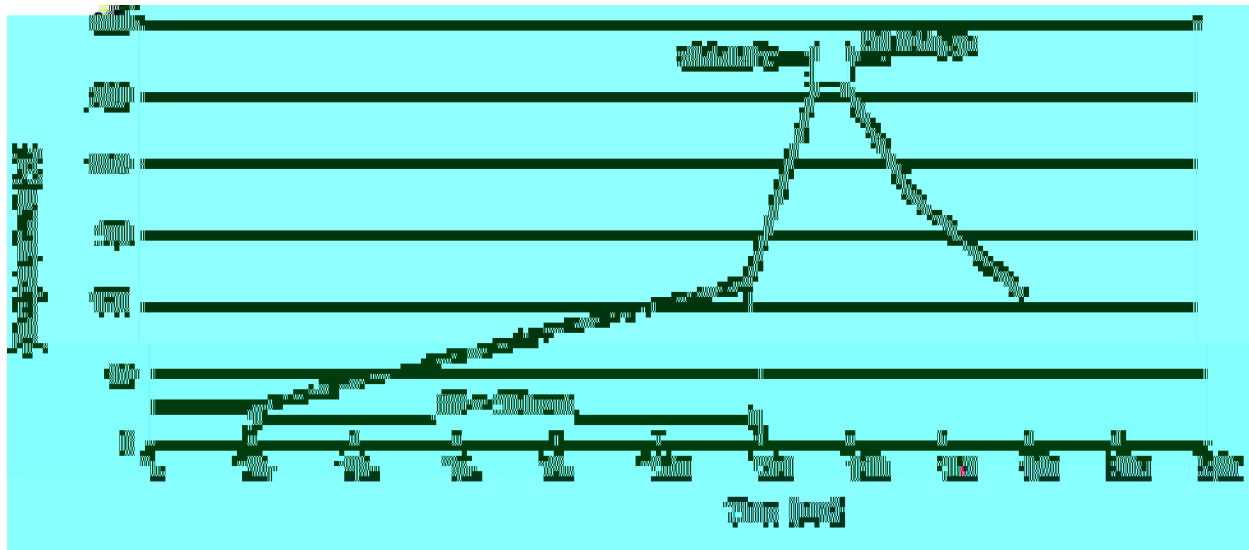
BR: Company Code

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> ) |                 |                                       |
|--------------|-----------|----------------|-----------------|------------------------------------|-----------------|---------------------------------------|
|              | Units/Bag | Bags/Inner Box | Units/Inner Box | Inner Boxes/Outer Box              | Units/Outer Box |                                       |
| TO-220/F     | 200       | 10             | 2,000           | 5                                  | 10,000          | 135×190    237×172×102    560×245×195 |

/ TUBE

| Package Type | Units      |                 |                 | Dimension (unit: mm <sup>3</sup> ) |                 |                                           |
|--------------|------------|-----------------|-----------------|------------------------------------|-----------------|-------------------------------------------|
|              | Units/Tube | Tubes/Inner Box | Units/Inner Box | Inner Boxes/Outer Box              | Units/Outer Box |                                           |
| TO-220/F     | 50         | 20              | 1,000           | 5                                  | 5,000           | 532×31.4×5.5    555×164×50    575×290×180 |

/ Notices