## / Revised record

| | | | | | |
|---|---|---|---|---|---|
| E | 2016-5 | | | | |
| F | 2020-4-27 | 1 | | | |
| A | 2022-3-29 | all | BR Q 4R<br>Q<br>AEC-Q101<br><br>, Q<br>245±5<br>5±0.5sec<br>255±5 5±<br>0.5sec | | |
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# BR2SD882DQ

Rev.A Mar.-2022

DATA SHEET

## / Descriptions

TO-252 NPN Silicon NPN transistor in a TO-252 Plastic Package.

## / Features

$V_{CE(sat)}$ ,$h_{FE}$ AEC-Q101

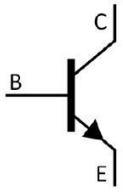
Low saturation voltage,excellent $h_{FE}$ linearity and high $h_{FE}$, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

## / Applications

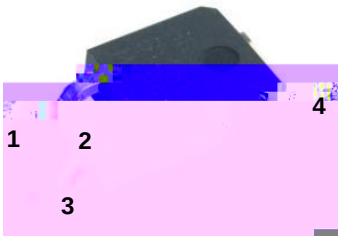
3 , ,

Output stage of 3 watts audio amplifier, voltage regulator, DC-DC converter and relay driver, Meet the stringent requirements of automotive applications.

## / Equivalent Circuit




## / Pinning




PIN1 Base PIN 2,4 Collector PIN 3 Emitter

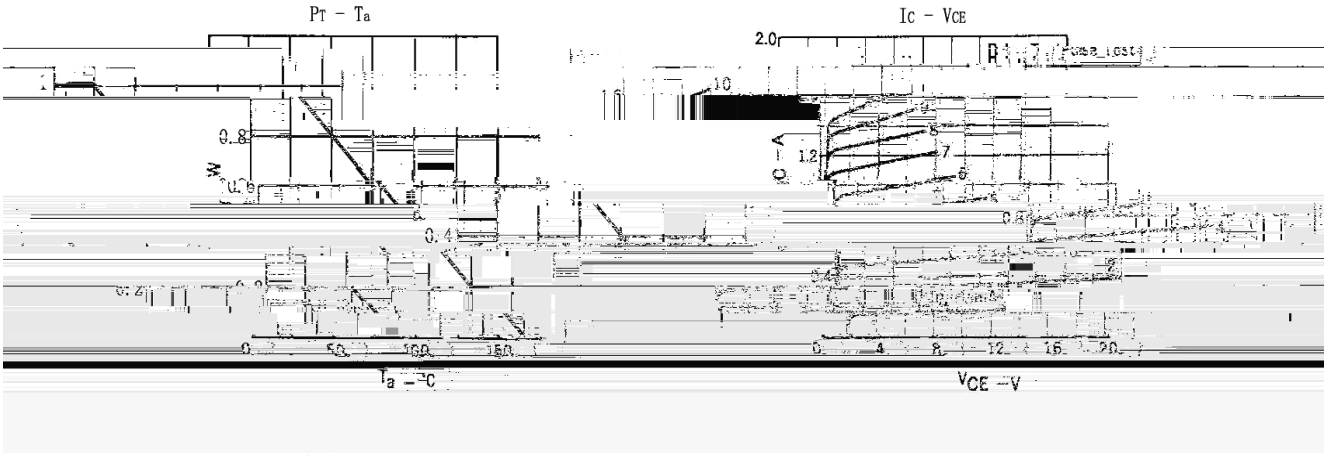
## / $h_{FE}$ Classifications & Marking

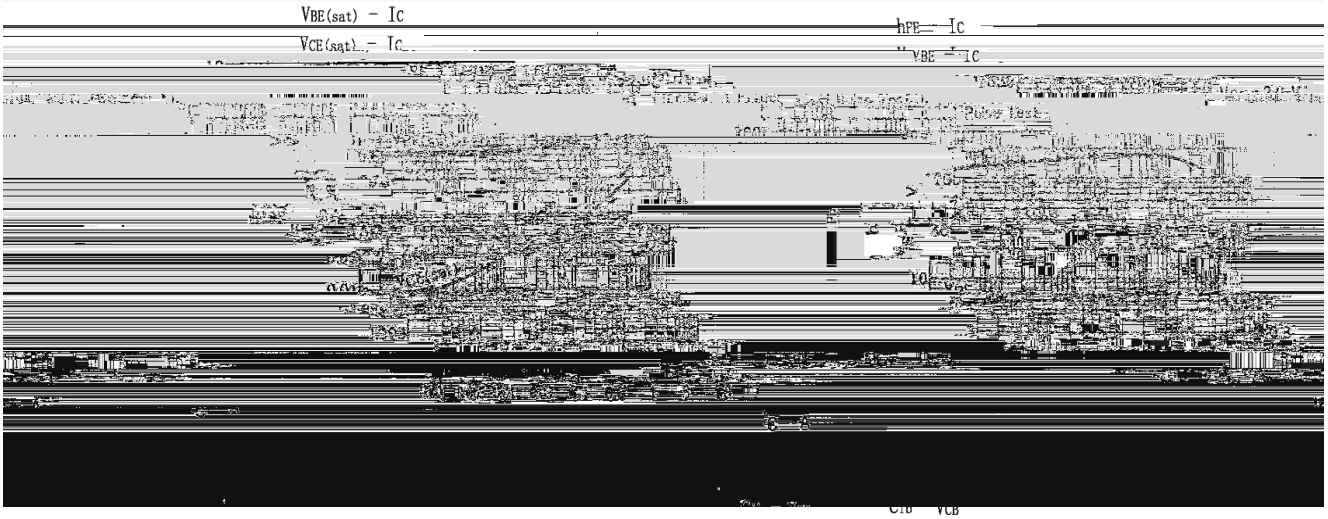
| $h_{FE}$ Classifications Symbol | R | Q | P | E |
|---|---|---|---|---|
| $h_{FE}$ Range | 60～120 | 100～200 | 160～320 | 200～400 |

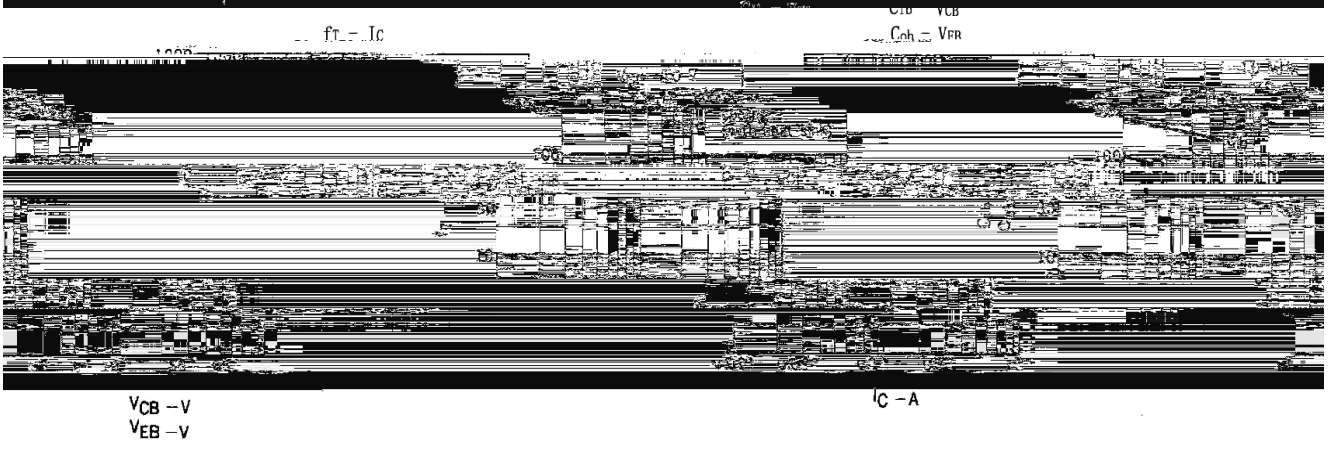
| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector to Base Voltage | $V_{CBO}$ | 40 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | 30 | V |
| Emitter to Base Voltage | $V_{EBO}$ | 5.0 | V |
| Collector Current - Continuous | $I_C$ | 3.0 | A |
| Collector Power Dissipation | $P_C$ | 1.0 | W |
| | $P_{C(Tc=25℃)}$ | 10 | W |
| Junction Temperature | $T_j$ | 150 | ℃ |
| Storage Temperature Range | $T_{stg}$ | -55～150 | ℃ |

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=30V $I_E$=0 | | | 1.0 | μA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=3.0V $I_C$=0 | | | 1.0 | μA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}$=2.0V $I_C$=1.0A | 60 | 160 | 400 | |
| | $h_{FE(2)}$ | $V_{CE}$=2.0V $I_C$=20mA | 30 | 150 | | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=2.0A $I_B$=0.2A | | 0.3 | 0.5 | V |

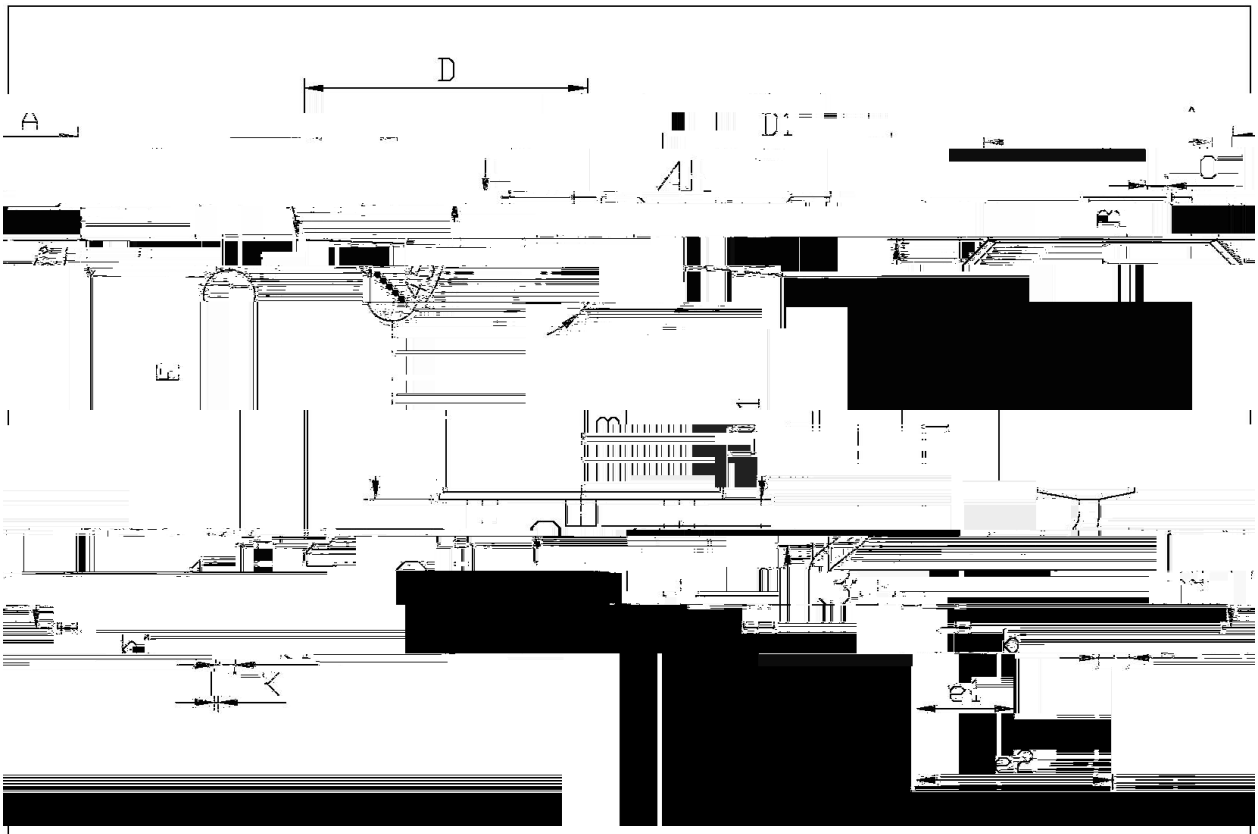
## / Electrical Characteristic Curve



## / Package Dimensions

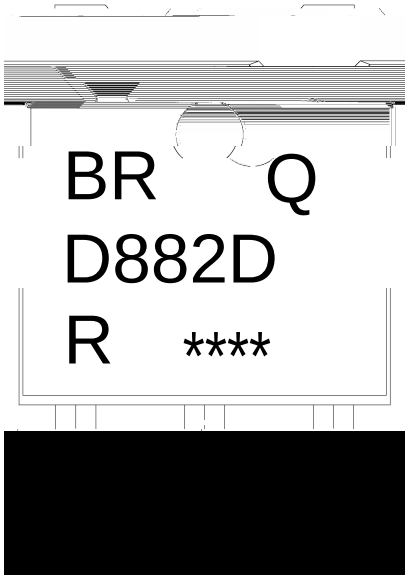



单位：mm

| Symbol | Min | Max | Symbol | Min | Max |
|---|---|---|---|---|---|
| e2 | 4.48 | 4.73 | b | 0.70 | 0.90 |
| C | 0.45 | 0.55 | L2 | 1.70 | 2.30 |
| D | 6.45 | 6.75 | L3 | 0.60 | 0.90 |
| D1 | 5.10 | 5.50 | K | 0.00 | 0.10 |

TO-252

## / Marking Instructions




BR

Q

D882D

R: h

****

Note:

| | |
|---|---|
| BR: | Company Code |
| Q: | Automobile halogen-free product Code |
| D882D: | Product Type |
| R: | $h_{FE}$ Classifications Symbol |
| ****: | Lot No. Code, code change with Lot No |

## ( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)

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Note:

| | | |
|---|---|---|
| 1 | 150 200 60 120sec; | 1.Preheating:150~200 , Time:60~120sec. |
| 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

260±5 10±1 sec. Temp.:260±5℃ Time:10±1 sec

## / Packaging SPEC.

### / REEL

| Package Type | Units | | | | | Dimension | | (unit mm$^3$) |
|---|---|---|---|---|---|---|---|---|
| | Units/Reel / | Reels/Inner Box / | Units/Inner Box / | Inner Boxes/Outer Box / | Units/Outer Box / | Reel | Inner Box | Outer Box |
| TO-252 | 2,500 | 2 | 5,000 | 6 | 30,000 | 13″ ×16 | 360×360×50 | 380×335×366 |

### / TUBE

| Package Type | Units | | | | | Dimension | | (unit mm$^3$) |
|---|---|---|---|---|---|---|---|---|
| | Units/Tube / | Tubes/Inner Box / | Units/Inner Box / | Inner Boxes/Outer Box / | Units/Outer Box / | Tube | Inner Box | Outer Box |