



| E | 2016-5    |   |  |  |  |
|---|-----------|---|--|--|--|
| F | 2020-4-27 | 1 |  |  |  |

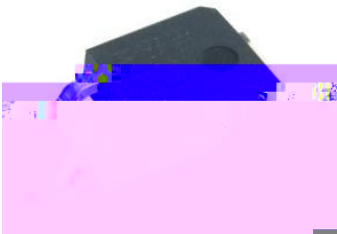
A 2021



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

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

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



PIN1    Base                      PIN 2,4    Collector                      PIN 3    Emitter

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

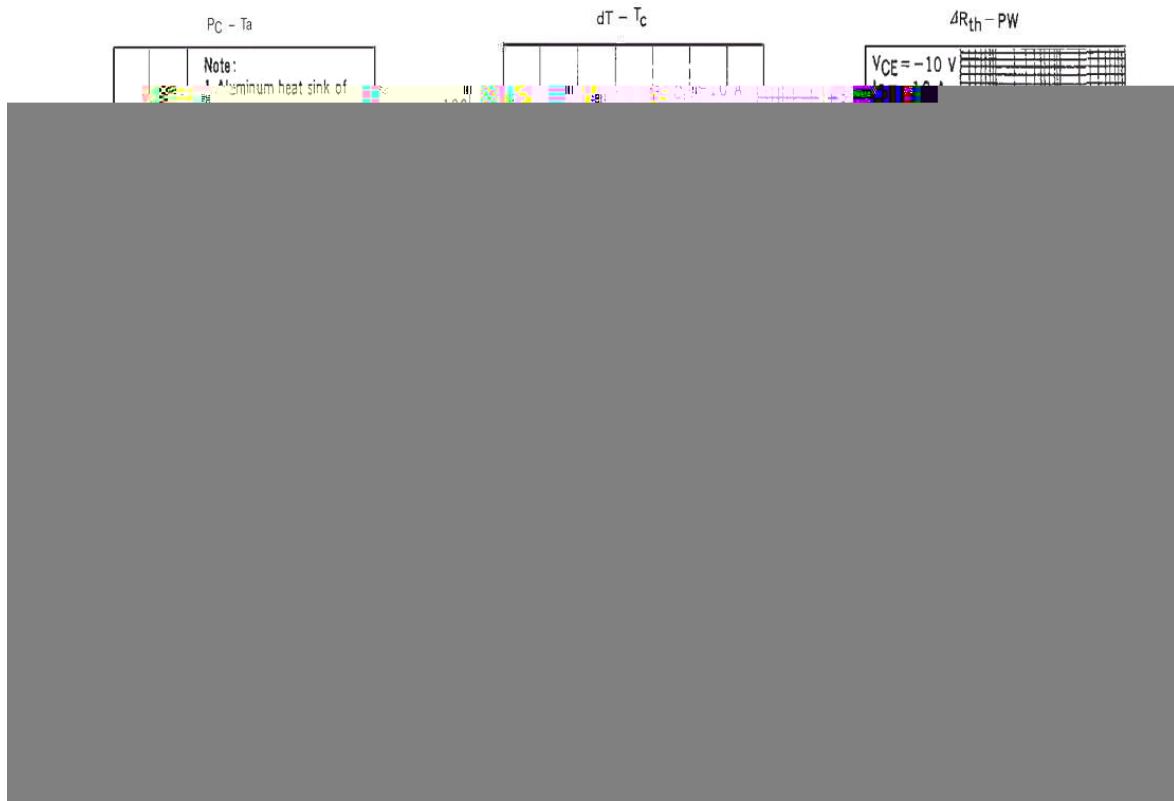


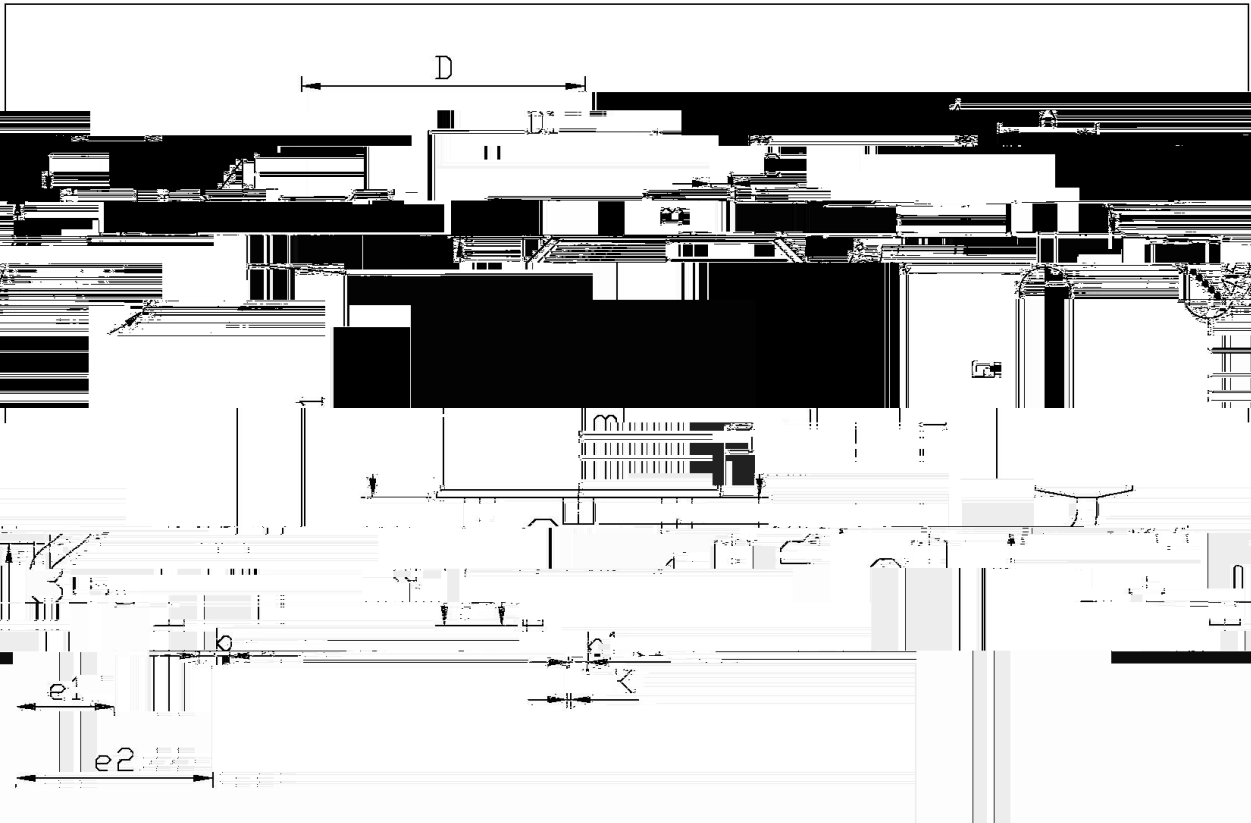
| Parameter                      | Symbol                        | Rating    | Unit               |
|--------------------------------|-------------------------------|-----------|--------------------|
| Collector to Base Voltage      | $V_{CBO}$                     | -40       | V                  |
| 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                  |
|                                | $P_C(T_C=25^{\circ}\text{C})$ | 10        | W                  |
| Junction Temperature           | $T_j$                         | 150       | $^{\circ}\text{C}$ |
| Storage Temperature Range      | $T_{stg}$                     | -55 ~ 150 | $^{\circ}\text{C}$ |

| Parameter                               | Symbol        | Test Conditions                                | Min  | Typ  | Max  | Unit          |
|-----------------------------------------|---------------|------------------------------------------------|------|------|------|---------------|
| Collector to Base Breakdown Voltage     | $V_{CBO}$     | $I_C=-100\mu\text{A}$ $I_E=0$                  | -40  |      |      | V             |
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C=-1\text{mA}$ $I_B=0$                      | -30  |      |      | V             |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E=-10\mu\text{A}$ $I_C=0$                   | -5.0 |      |      | V             |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=-30\text{V}$ $I_E=0$                   |      |      | -1.0 | $\mu\text{A}$ |
| Emitter Cut-Off Current                 | $I_{EBO}$     | $V_{EB}=-3.0\text{V}$ $I_C=0$                  |      |      | -1.0 | $\mu\text{A}$ |
| DC Current Gain                         | $h_{FE(1)}$   | $V_{CE}=-2.0\text{V}$ $I_C=-1.0\text{A}$       | 60   | 160  | 400  |               |
|                                         | $h_{FE(2)}$   | $V_{CE}=-2.0\text{V}$ $I_C=-20\text{mA}$       | 30   | 220  |      |               |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-2.0\text{A}$ $I_B=-0.2\text{A}$          |      | -0.3 | -0.5 | V             |
| Base to Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=-2.0\text{A}$ $I_B=-0.2\text{A}$          |      | -1.0 | -2.0 | V             |
| Transition Frequency                    | $f_T$         | $I_C=-1.0\text{A}$ $V_{CE}=-5.0\text{V}$       |      | 80   |      | MHz           |
| Collector output capacitance            | $C_{ob}$      | $V_{CB}=-10\text{V}$ $I_E=0$ $f=1.0\text{MHz}$ |      | 55   |      | pF            |



Rev.A Dec.-2021

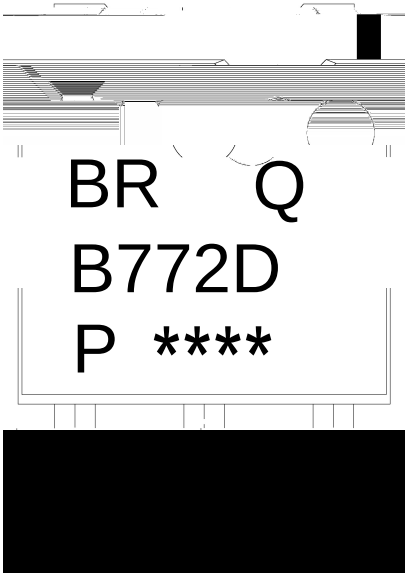




单位: mm

| Dimensions in Millimeters |  |      |      | Dimensions in Millimeters |  |      |      |
|---------------------------|--|------|------|---------------------------|--|------|------|
| Symbol                    |  | Min  | Max  | Symbol                    |  | Min  | Max  |
| D                         |  | 6.45 | 6.75 | D                         |  | 6.45 | 6.75 |
| D1                        |  | 5.10 | 5.50 | D1                        |  | 5.10 | 5.50 |
| K                         |  | 0.00 | 0.60 | K                         |  | 0.00 | 0.60 |
| e1                        |  | 4.73 | 5.00 | e1                        |  | 4.73 | 5.00 |
| e2                        |  | 4.40 | 4.70 | e2                        |  | 4.40 | 4.70 |
| b                         |  | 0.70 | 0.90 | b                         |  | 0.70 | 0.90 |
| f                         |  | 0.45 | 0.55 | f                         |  | 0.45 | 0.55 |
| g                         |  | 0.45 | 0.55 | g                         |  | 0.45 | 0.55 |
| h                         |  | 0.45 | 0.55 | h                         |  | 0.45 | 0.55 |
| i                         |  | 0.45 | 0.55 | i                         |  | 0.45 | 0.55 |
| j                         |  | 0.45 | 0.55 | j                         |  | 0.45 | 0.55 |
| k                         |  | 0.45 | 0.55 | k                         |  | 0.45 | 0.55 |
| l                         |  | 0.45 | 0.55 | l                         |  | 0.45 | 0.55 |
| m                         |  | 0.45 | 0.55 | m                         |  | 0.45 | 0.55 |
| n                         |  | 0.45 | 0.55 | n                         |  | 0.45 | 0.55 |
| o                         |  | 0.45 | 0.55 | o                         |  | 0.45 | 0.55 |
| p                         |  | 0.45 | 0.55 | p                         |  | 0.45 | 0.55 |
| q                         |  | 0.45 | 0.55 | q                         |  | 0.45 | 0.55 |
| r                         |  | 0.45 | 0.55 | r                         |  | 0.45 | 0.55 |
| s                         |  | 0.45 | 0.55 | s                         |  | 0.45 | 0.55 |
| t                         |  | 0.45 | 0.55 | t                         |  | 0.45 | 0.55 |
| u                         |  | 0.45 | 0.55 | u                         |  | 0.45 | 0.55 |
| v                         |  | 0.45 | 0.55 | v                         |  | 0.45 | 0.55 |
| w                         |  | 0.45 | 0.55 | w                         |  | 0.45 | 0.55 |
| x                         |  | 0.45 | 0.55 | x                         |  | 0.45 | 0.55 |
| y                         |  | 0.45 | 0.55 | y                         |  | 0.45 | 0.55 |
| z                         |  | 0.45 | 0.55 | z                         |  | 0.45 | 0.55 |

TN-252



|        |                                        |
|--------|----------------------------------------|
| BR     | ! " # \$ %                             |
| Q      | ! & ' ( ) * + , -                      |
| B772D  | ! . / \$ %                             |
| P:     | ! h 0 1 \$ %                           |
| ****   | ! 2 * 3 / \$ % 4 5 2 * 3 / 6 7 8       |
| Note:  |                                        |
| BR:    | Company Code                           |
| Q:     | Automobile halogen-free product Code   |
| B772D: | Product Type Code                      |
| P:     | h <sub>FE</sub> Classifications Symbol |
| ****:  | Lot No. Code, code change with Lot No  |

