# 2SD0958 (2SD958)

## Silicon NPN epitaxial planar type

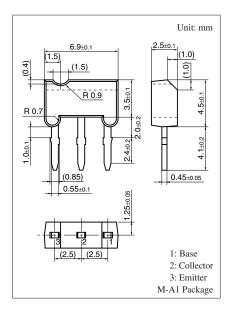
For low-frequency and low-noise amplification Complementary to 2SB0788 (2SB788)

### ■ Features

- ullet High collector-emitter voltage (Base open)  $V_{CEO}$
- Low noise voltage NV
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

### ■ Absolute Maximum Ratings $T_a = 25$ °C

| Parameter                             | Symbol           | Rating      | Unit |
|---------------------------------------|------------------|-------------|------|
| Collector-base voltage (Emitter open) | V <sub>CBO</sub> | 120         | V    |
| Collector-emitter voltage (Base open) | V <sub>CEO</sub> | 120         | V    |
| Emitter-base voltage (Collector open) | $V_{EBO}$        | 7           | V    |
| Collector current                     | $I_C$            | 20          | mA   |
| Peak collector current                | $I_{CP}$         | 50          | mA   |
| Collector power dissipation           | P <sub>C</sub>   | 400         | mW   |
| Junction temperature                  | $T_{j}$          | 150         | °C   |
| Storage temperature                   | T <sub>stg</sub> | -55 to +150 | °C   |



## $\blacksquare$ Electrical Characteristics $T_a = 25 ^{\circ}C \pm 3 ^{\circ}C$

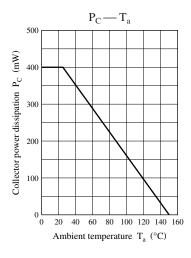
| Parameter                                     | Symbol               | Conditions   | Min | Тур | Max | Unit |
|---|----------------------|--|-----|-----|-----|------|
| Collector-base voltage (Emitter open)         | V <sub>CBO</sub>     | $I_C = 10 \ \mu A, I_E = 0$  | 120 |     |     | V    |
| Collector-emitter voltage (Base open)         | V <sub>CEO</sub>     | $I_C = 1 \text{ mA}, I_B = 0$  | 120 |     |     | V    |
| Emitter-base voltage (Collector open)         | V <sub>EBO</sub>     | $I_E = 10 \ \mu A, \ I_C = 0$  | 7   |     |     | V    |
| Collector-base cut-off current (Emitter open) | $I_{CBO}$            | $V_{CB} = 50 \text{ V}, I_{E} = 0$                                   |     |     | 100 | nA   |
| Collector-emitter cutoff current (Base open)  | $I_{CEO}$            | $V_{CE} = 50 \text{ V}, I_{B} = 0$                                   |     |     | 1   | μΑ   |
| Forward current transfer ratio *              | h <sub>FE</sub>      | $V_{CE} = 5 \text{ V}, I_C = 2 \text{ mA}$                           | 180 |     | 700 | _    |
| Collector-emitter saturation voltage          | V <sub>CE(sat)</sub> | $I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$                            |     |     | 0.6 | V    |
| Transition frequency                          | $f_T$                | $V_{CB} = 5 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$     |     | 200 |     | MHz  |
| Noise voltage                                 | NV                   | $V_{CE} = 40 \text{ V}, I_{C} = 1 \text{ mA}, G_{V} = 80 \text{ dB}$ |     |     | 150 | mV   |
|   |                      | $R_g = 100 \text{ k}\Omega$ , Function = FLAT                        |     |     |     |      |

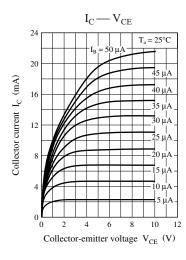
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

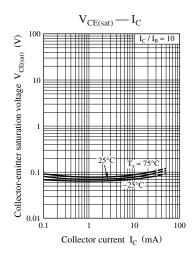
### 2. \*: Rank classification

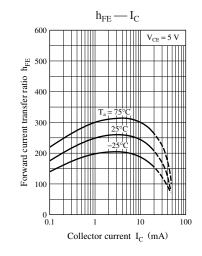
| Rank            | R          | S          | Т          |
|-----------------|------------|------------|------------|
| h <sub>FE</sub> | 180 to 360 | 260 to 520 | 360 to 700 |

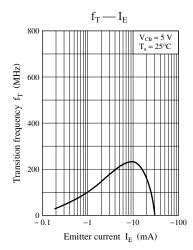
Note) The part number in the parenthesis shows conventional part number.

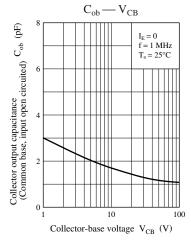


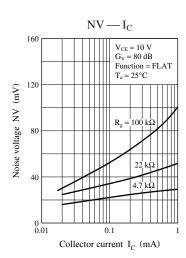












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