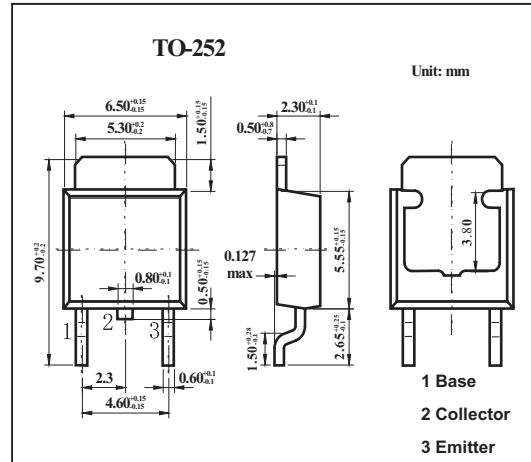


**2SD1252, 2SD1252A**

■ Features

- Power transistors.



■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$

| Parameter                   |                          | Symbol    | Rating      | Unit             |
|-----------------------------|--------------------------|-----------|-------------|------------------|
| Collector-base voltage      | 2SD1252                  | $V_{CB0}$ | 60          | V                |
|                             | 2SD1252A                 |           | 80          | V                |
| Collector-emitter voltage   | 2SD1252                  | $V_{CE0}$ | 60          | V                |
|                             | 2SD1252A                 |           | 80          | V                |
| Emitter-base voltage        |                          | $V_{EB0}$ | 6           | V                |
| Collector current           |                          | $I_C$     | 3           | A                |
| Peak collector current      |                          | $I_{CP}$  | 5           | A                |
| Collector power dissipation | $T_a = 25^\circ\text{C}$ | $P_C$     | 1.3         | W                |
|                             | $T_c = 25^\circ\text{C}$ |           | 35          | W                |
| Junction temperature        |                          | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature         |                          | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

## 2SD1252, 2SD1252A

■ Electrical Characteristics Ta = 25°C

| Parameter                            |          | Symbol               | Testconditions  | Min | Typ | Max | Unit |
|--------------------------------------|----------|----------------------|---|-----|-----|-----|------|
| Collector-emitter voltage            | 2SD1252  | V <sub>CEO</sub>     | I <sub>C</sub> = 30 mA, I <sub>B</sub> = 0                | 60  |     |     | V    |
|                                      | 2SD1252A |                      |   | 80  |     |     | V    |
| Base-emitter voltage                 |          | V <sub>BE</sub>      | V <sub>CE</sub> = 4 V, I <sub>C</sub> = 3 A               |     |     | 1.8 | V    |
| Collector-emitter cutoff current     | 2SD1252  | I <sub>CES</sub>     | V <sub>CE</sub> = 60 V, V <sub>BE</sub> = 0               |     |     | 200 | μA   |
|                                      | 2SD1252A |                      | V <sub>CE</sub> = 80 V, V <sub>BE</sub> = 0               |     |     | 200 | μA   |
| Collector-emitter cutoff current     | 2SD1252  | I <sub>CEO</sub>     | V <sub>CE</sub> = 30 V, I <sub>B</sub> = 0                |     |     | 300 | μA   |
|                                      | 2SD1252A |                      | V <sub>CE</sub> = 40 V, I <sub>B</sub> = 0                |     |     | 300 | μA   |
| Emitter-base cutoff current          |          | I <sub>EBO</sub>     | V <sub>EB</sub> = 6 V, I <sub>C</sub> = 0                 |     |     | 1   | mA   |
| Forward current transfer ratio       |          | h <sub>FE</sub>      | V <sub>CE</sub> = 4 V, I <sub>C</sub> = 1 A               | 40  |     | 250 |      |
| Forward current transfer ratio       |          |                      | V <sub>CE</sub> = 4 V, I <sub>C</sub> = 3 A               | 10  |     |     |      |
| Collector-emitter saturation voltage |          | V <sub>CE(sat)</sub> | I <sub>C</sub> = 3 A, I <sub>B</sub> = 0.375 A            |     |     | 1.2 | V    |
| Transition frequency                 | 2SD1252  | f <sub>T</sub>       | V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.5 A, f = 10 MHz |     | 30  |     | MHz  |
|                                      | 2SD1252A |                      |   |     | 25  |     | MHz  |
| Turn-on time                         |          | t <sub>on</sub>      | I <sub>C</sub> = 1 A                                      |     | 0.5 |     | μs   |
| Storage time                         |          | t <sub>stg</sub>     | I <sub>B1</sub> = -I <sub>B2</sub> = 0.1 A                |     | 2.5 |     | μs   |
| Fall time                            |          | t <sub>f</sub>       | V <sub>CC</sub> = 50 V                                    |     | 0.4 |     | μs   |

■ hFE Classification

| Rank | R     | Q      | P       |
|------|-------|--------|---------|
| hFE  | 40~90 | 70~150 | 120~250 |