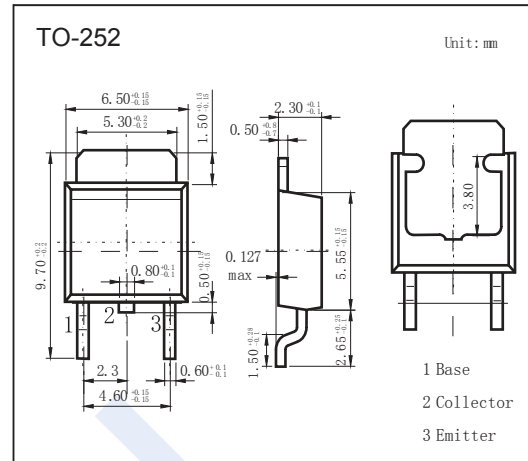


## NPN Transistors

## 2SD1256

## ■ Features

- Satisfactory linearity of forward current transfer ratio  $h_{FE}$
- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- Large collector current  $I_C$
- Complementary to 2SB933

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

| Parameter                      | Symbol    | Rating                   | Unit             |   |
|--------------------------------|-----------|--------------------------|------------------|---|
| Collector - Base Voltage       | $V_{CBO}$ | 130                      | V                |   |
| Collector - Emitter Voltage    | $V_{CEO}$ | 80                       |                  |   |
| Emitter - Base Voltage         | $V_{EBO}$ | 7                        |                  |   |
| Collector Current - Continuous | $I_C$     | 5                        | A                |   |
| Collector Current - Pulse      | $I_{CP}$  | 10                       |                  |   |
| Collector Power Dissipation    | $P_C$     | $T_c = 25^\circ\text{C}$ | 40               | W |
|                                |           | $T_a = 25^\circ\text{C}$ | 1.3              |   |
| Junction Temperature           | $T_J$     | 150                      | $^\circ\text{C}$ |   |
| Storage Temperature Range      | $T_{stg}$ | -55 to 150               |                  |   |

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

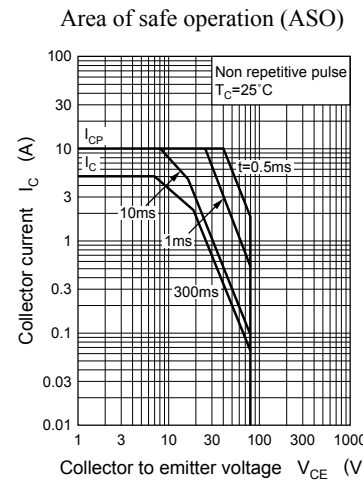
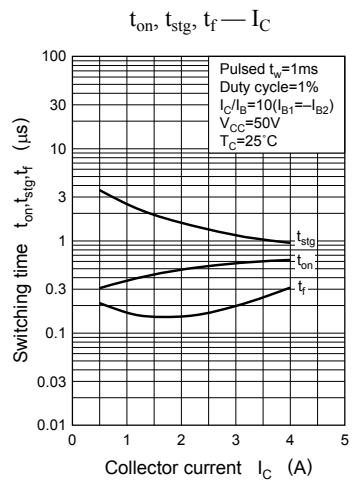
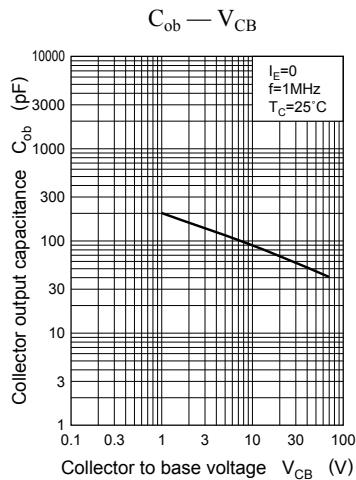
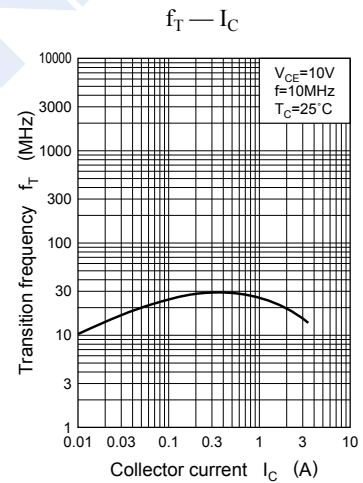
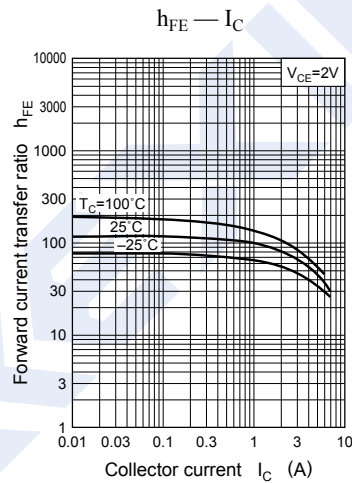
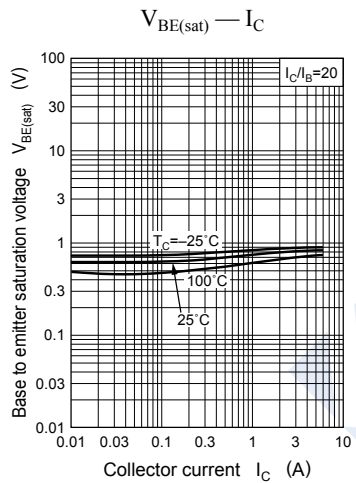
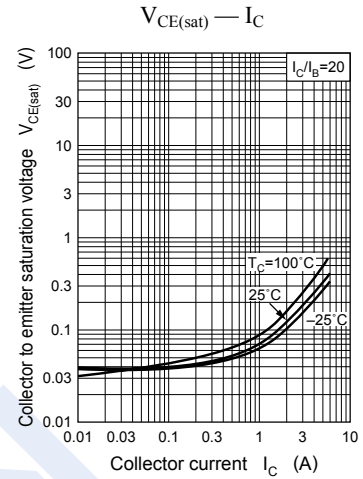
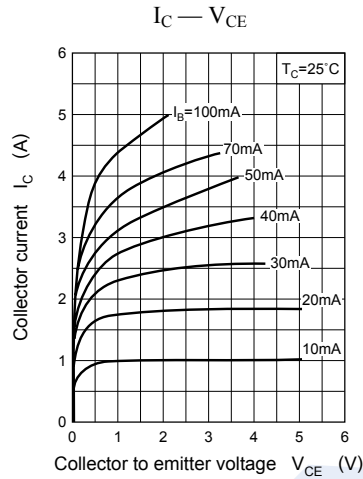
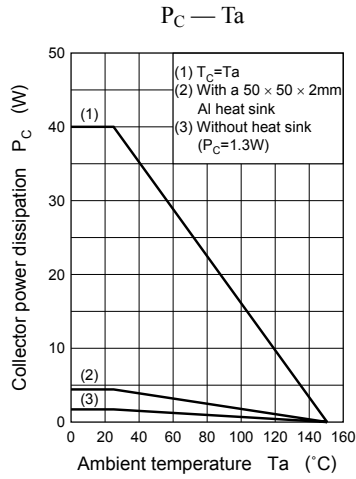
| Parameter                            | Symbol        | Test Conditions   | Min | Typ  | Max | Unit          |
|--------------------------------------|---------------|---|-----|------|-----|---------------|
| Collector- base breakdown voltage    | $V_{CBO}$     | $I_C = 100 \mu\text{A}$ , $I_E = 0$   | 130 |      |     | V             |
| Collector- emitter breakdown voltage | $V_{CEO}$     | $I_C = 10 \text{ mA}$ , $I_B = 0$   | 80  |      |     |               |
| Emitter - base breakdown voltage     | $V_{EBO}$     | $I_E = 100 \mu\text{A}$ , $I_C = 0$   | 7   |      |     |               |
| Collector-base cut-off current       | $I_{CBO}$     | $V_{CB} = 100 \text{ V}$ , $I_E = 0$  |     |      | 10  | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 5 \text{ V}$ , $I_C = 0$  |     |      | 50  |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 4 \text{ A}$ , $I_B = 200 \text{ mA}$  |     |      | 0.5 | V             |
| Base - emitter saturation voltage    | $V_{BE(sat)}$ | $I_C = 4 \text{ A}$ , $I_B = 200 \text{ mA}$  |     |      | 1.5 |               |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = 2 \text{ V}$ , $I_C = 100 \text{ mA}$   | 45  |      |     |               |
|                                      | $h_{FE(2)}$   | $V_{CE} = 2 \text{ V}$ , $I_C = 2 \text{ A}$  | 60  |      | 260 |               |
| Turn-on time                         | $t_{on}$      | $I_C = 2 \text{ A}$ , $I_{B1} = 200 \text{ mA}$ , $I_{B2} = -200 \text{ mA}$ ,<br>$V_{CC} = 50 \text{ V}$ |     | 0.5  |     | $\mu\text{s}$ |
| Storage time                         | $t_{stg}$     |   |     | 1.5  |     |               |
| Fall time                            | $t_f$         |   |     | 0.15 |     |               |
| Transition frequency                 | $f_T$         | $V_{CE} = 10 \text{ V}$ , $I_C = 500 \text{ mA}$ , $f = 10 \text{ MHz}$                                   |     | 30   |     | MHz           |

■ Classification of  $h_{FE(2)}$ 

| Type  | 2SD1256-R | 2SD1256-Q | 2SD1256-P |
|-------|-----------|-----------|-----------|
| Range | 60-120    | 90-180    | 130-260   |

## NPN Transistors 2SD1256

■ Typical Characteristics



## NPN Transistors

### 2SD1256

#### ■ Typical Characteristics

