

2SD1256

Silicon NPN epitaxial planar type

For power switching

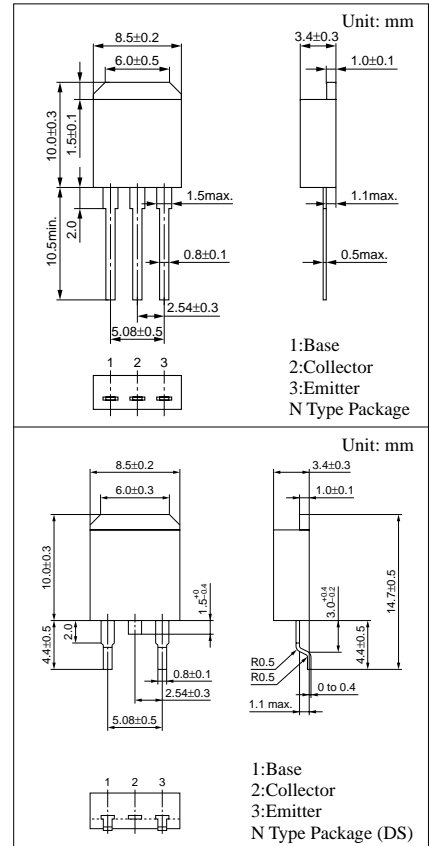
Complementary to 2SB933

Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Satisfactory linearity of forward current transfer ratio h_{FE}
- Large collector current I_C
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

| Parameter | Symbol | Rated | Unit |
|------------------------------|-----------|------------------------|------------------|
| Collector to base voltage | V_{CBO} | 130 | V |
| Collector to emitter voltage | V_{CEO} | 80 | V |
| Emitter to base voltage | V_{EBO} | 7 | V |
| Peak collector current | I_{CP} | 10 | A |
| Collector current | I_C | 5 | A |
| Collector power dissipation | P_C | $T_C=25^\circ\text{C}$ | 40 |
| | | $T_a=25^\circ\text{C}$ | 1.3 |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



Electrical Characteristics ($T_C=25^\circ\text{C}$)

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---------------|---|-----|-----|------|---------------|
| Collector cutoff current | I_{CBO} | $V_{CB} = 100V, I_E = 0$ | | | 10 | μA |
| Emitter cutoff current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | | | 50 | μA |
| Collector to emitter voltage | V_{CEO} | $I_C = 10\text{mA}, I_B = 0$ | 80 | | | V |
| Forward current transfer ratio | h_{FE1} | $V_{CE} = 2V, I_C = 0.1A$ | 45 | | | |
| | h_{FE2}^* | $V_{CE} = 2V, I_C = 2A$ | 60 | | 260 | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 4A, I_B = 0.2A$ | | | 0.5 | V |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 4A, I_B = 0.2A$ | | | 1.5 | V |
| Transition frequency | f_T | $V_{CE} = 10V, I_C = 0.5A, f = 10\text{MHz}$ | | 30 | | MHz |
| Turn-on time | t_{on} | $I_C = 2A, I_{B1} = 0.2A, I_{B2} = -0.2A, V_{CC} = 50V$ | | 0.5 | | μs |
| Storage time | t_{stg} | | | 1.5 | | μs |
| Fall time | t_f | | | | 0.15 | μs |

* h_{FE2} Rank classification

| Rank | R | Q | P |
|-----------|-----------|-----------|------------|
| h_{FE2} | 60 to 120 | 90 to 180 | 130 to 260 |

