

# 2SD2530

Silicon NPN triple diffusion planer type Darlington

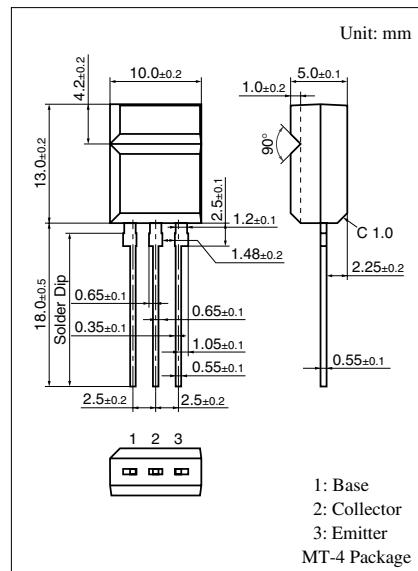
For power amplification

## ■ Features

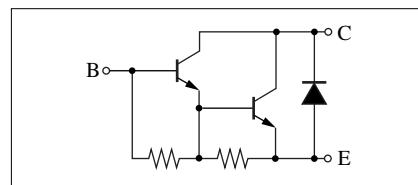
- High forward current transfer ratio  $h_{FE}$
- Allowing supply with the radial taping
- Low collector to emitter saturation voltage  $V_{CE(sat)}$ : < 2.5 V

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

| Parameter                    | Symbol    | Rating      | Unit             |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage    | $V_{CBO}$ | 100         | V                |
| Collector to emitter voltage | $V_{CEO}$ | 100         | V                |
| Emitter to base voltage      | $V_{EBO}$ | 5           | V                |
| Peak collector current       | $I_{CP}$  | 10          | A                |
| Collector current            | $I_C$     | 5           | A                |
| Collector power dissipation  | $P_C$     | 15<br>2     | W                |
| Junction temperature         | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature          | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |



## Internal Connection



## ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 2^\circ\text{C}$

| Parameter                               | Symbol        | Conditions  | Min   | Typ  | Max    | Unit          |
|---|---------------|---|-------|------|--------|---------------|
| Collector cutoff current                | $I_{CBO}$     | $V_{CB} = 100 \text{ V}, I_E = 0$   |       |      | 100    | $\mu\text{A}$ |
|   | $I_{CEO}$     | $V_{CE} = 80 \text{ V}, I_B = 0$  |       |      | 100    | $\mu\text{A}$ |
| Emitter cutoff current                  | $I_{EBO}$     | $V_{EB} = 5 \text{ V}, I_C = 0$   |       |      | 5      | mA            |
| Collector to emitter voltage            | $V_{CEO}$     | $I_C = 10 \text{ mA}, I_B = 0$  | 100   |      |        | V             |
| Forward current transfer ratio          | $h_{FE1}$     | $V_{CE} = 4 \text{ V}, I_C = 2 \text{ A}$   | 2 000 |      | 15 000 |               |
|   | $h_{FE2}$     | $V_{CE} = 4 \text{ V}, I_C = 4 \text{ A}$   | 500   |      |        |               |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 2 \text{ A}, I_B = 2 \text{ mA}$   |       |      | 1.5    | V             |
|   |               | $I_C = 4 \text{ A}, I_B = 16 \text{ mA}$  |       |      | 2.5    | V             |
| Base to emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 4 \text{ A}, I_B = 16 \text{ mA}$  |       |      | 2.5    | V             |
| Transition frequency                    | $f_T$         | $V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}, f = 1 \text{ MHz}$                                 |       | 20   |        | MHz           |
| Turn-on time                            | $t_{on}$      | $I_C = 4 \text{ A}, I_{B1} = 16 \text{ mA}, I_{B2} = -16 \text{ mA}$<br>$V_{CC} = 50 \text{ V}$ |       | 0.27 |        | $\mu\text{s}$ |
| Storage time                            | $t_{stg}$     |   |       | 2.9  |        | $\mu\text{s}$ |
| Fall time                               | $t_f$         |   |       | 1.0  |        | $\mu\text{s}$ |