

2SD2064

Silicon NPN triple diffusion planar type

For high power amplification

Complementary to 2SB1371

Features

- Satisfactory forward current transfer ratio h_{FE} vs. collector current I_C characteristics
- Wide area of safe operation (ASO)
- High transition frequency f_T
- Optimum for the output stage of a HiFi audio amplifier
- Full-pack package which can be installed to the heat sink with one screw

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

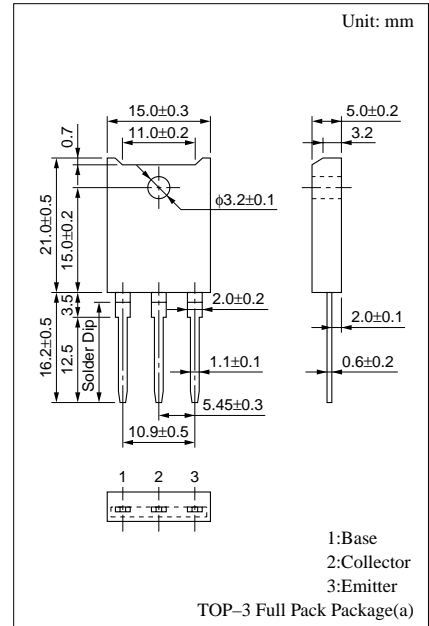
| Parameter | Symbol | Ratings | Unit |
|------------------------------|-----------|------------------------|------------------|
| Collector to base voltage | V_{CBO} | 120 | V |
| Collector to emitter voltage | V_{CEO} | 120 | V |
| Emitter to base voltage | V_{EBO} | 5 | V |
| Peak collector current | I_{CP} | 10 | A |
| Collector current | I_C | 6 | A |
| Collector power dissipation | P_C | $T_C=25^\circ\text{C}$ | 70 |
| | | $T_a=25^\circ\text{C}$ | 3 |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

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

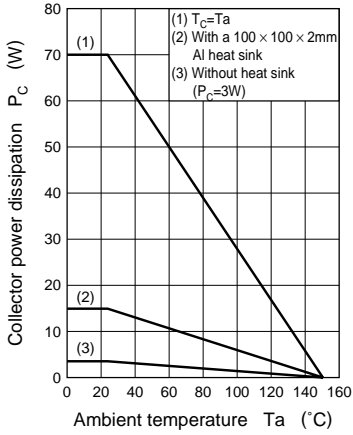
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|-----------------------------------------|---------------|----------------------------------------------------------|-----|-----|-----|---------------|
| Collector cutoff current | I_{CBO} | $V_{CB} = 120\text{V}, I_E = 0$ | | | 50 | μA |
| Emitter cutoff current | I_{EBO} | $V_{EB} = 3\text{V}, I_C = 0$ | | | 50 | μA |
| Forward current transfer ratio | h_{FE1} | $V_{CE} = 5\text{V}, I_C = 20\text{mA}$ | 20 | | | |
| | h_{FE2}^* | $V_{CE} = 5\text{V}, I_C = 1\text{A}$ | 60 | | 200 | |
| | h_{FE3} | $V_{CE} = 5\text{V}, I_C = 4\text{A}$ | 20 | | | |
| Base to emitter voltage | V_{BE} | $V_{CE} = 5\text{V}, I_C = 4\text{A}$ | | | 1.8 | V |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 4\text{A}, I_B = 0.4\text{A}$ | | | 2.0 | V |
| Transition frequency | f_T | $V_{CE} = 5\text{V}, I_C = 0.5\text{A}, f = 1\text{MHz}$ | | 20 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$ | | 80 | | pF |

* h_{FE2} Rank classification

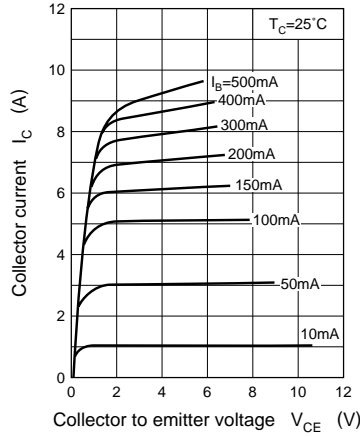
| Rank | Q | S | P |
|-----------|-----------|-----------|------------|
| h_{FE2} | 60 to 120 | 80 to 160 | 100 to 200 |



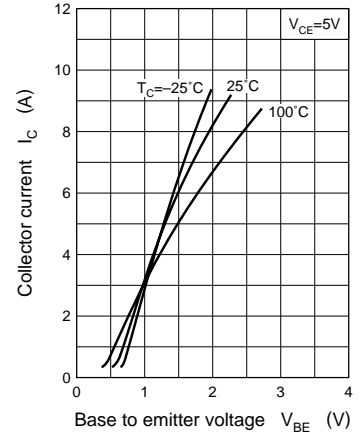
$P_C - T_a$



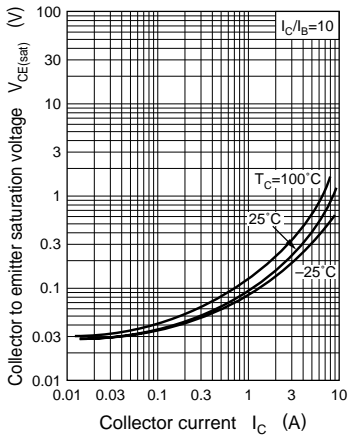
$I_C - V_{CE}$



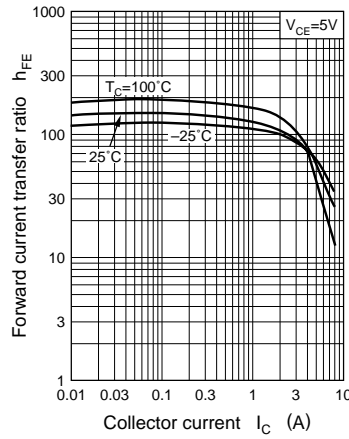
$I_C - V_{BE}$



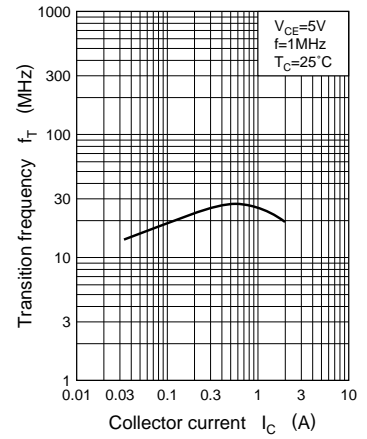
$V_{CE(sat)} - I_C$



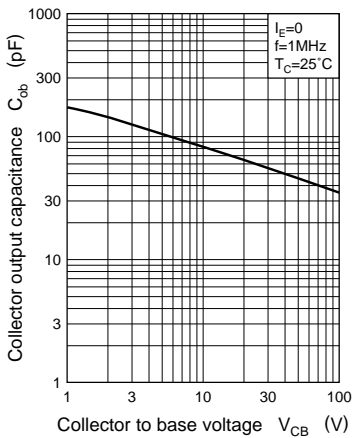
$h_{FE} - I_C$



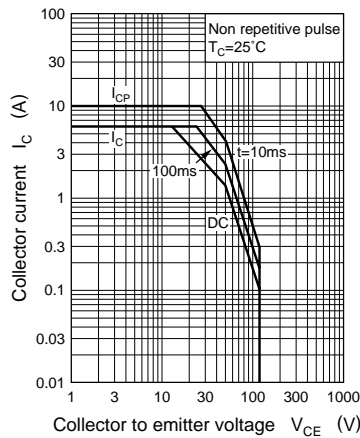
$f_T - I_C$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$$R_{th(t)} - t$$

