

2SD1446

Silicon NPN triple diffusion planar type Darlington

For power amplification

■ Features

- High forward current transfer ratio h_{FE}
- High collector to base voltage V_{CBO}
- Full-pack package which can be installed to the heat sink with one screw

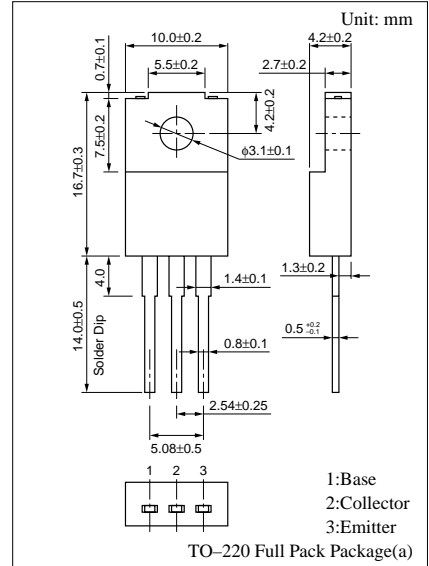
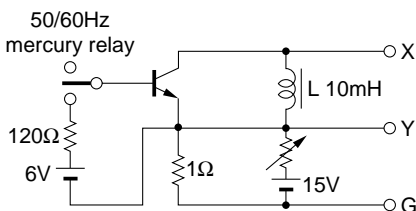
■ Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

| Parameter | Symbol | Ratings | Unit | |
|------------------------------|-----------|------------------------|------------------|---|
| Collector to base voltage | V_{CBO} | 500 | V | |
| Collector to emitter voltage | V_{CEO} | 400 | 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 | $T_C=25^\circ\text{C}$ | 40 | W |
| | | $T_a=25^\circ\text{C}$ | 2 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ | |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ | |

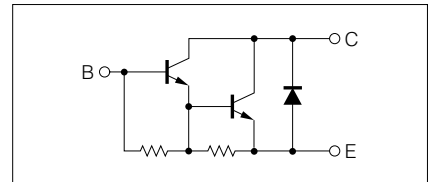
■ Electrical Characteristics ($T_C=25^\circ\text{C}$)

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|------------------|---|-----|-----|-----|---------------|
| Collector cutoff current | I_{CBO} | $V_{CB} = 350\text{V}, I_E = 0$ | | | 100 | μA |
| Collector to emitter voltage | $V_{CEO(sus)}^*$ | $I_C = 2\text{A}, L = 10\text{mH}$ | 400 | | | V |
| Emitter to base voltage | V_{EBO} | $I_E = 0.1\text{A}, I_C = 0$ | 5 | | | V |
| Forward current transfer ratio | h_{FE} | $V_{CE} = 2\text{V}, I_C = 2\text{A}$ | 500 | | | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 3\text{A}, I_B = 0.06\text{A}$ | | | 1.5 | V |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 3\text{A}, I_B = 0.06\text{A}$ | | | 2.5 | V |
| Transition frequency | f_T | $V_{CE} = 10\text{V}, I_C = 1\text{A}, f = 1\text{MHz}$ | | 15 | | MHz |

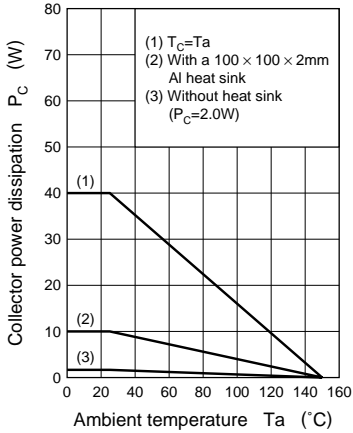
* $V_{CEO(sus)}$ Test circuit



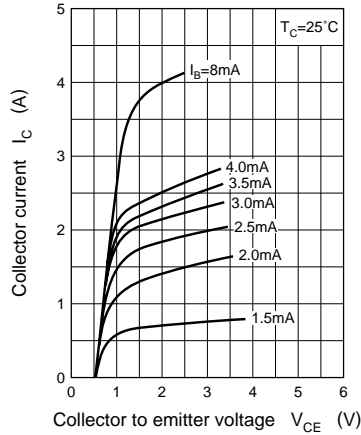
Internal Connection



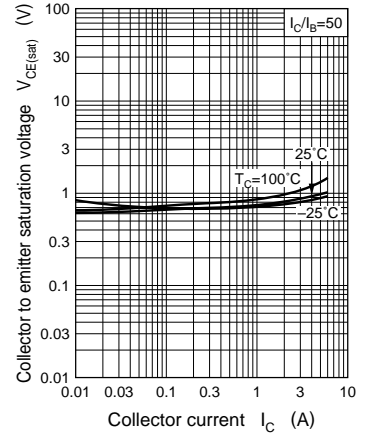
$P_C - T_a$



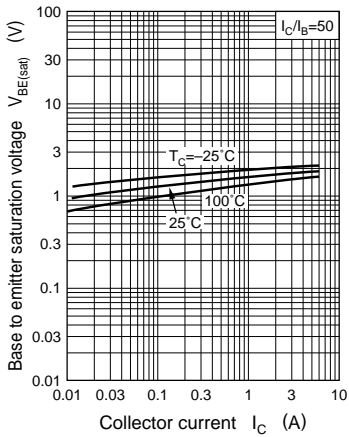
$I_C - V_{CE}$



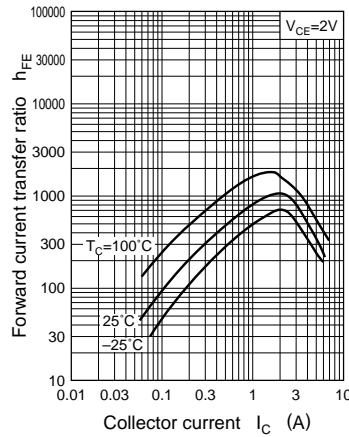
$V_{CE(sat)} - I_C$



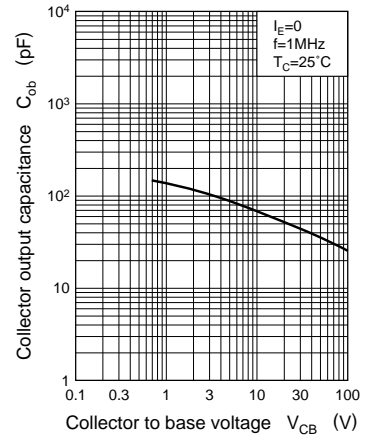
$V_{BE(sat)} - I_C$



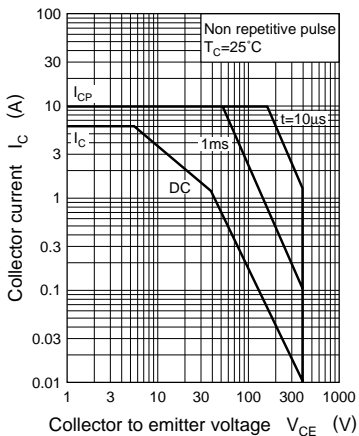
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$R_{th(t)} - t$

