

2SD1273, 2SD1273A

Silicon NPN triple diffusion planar type

For power amplification with high forward current transfer ratio

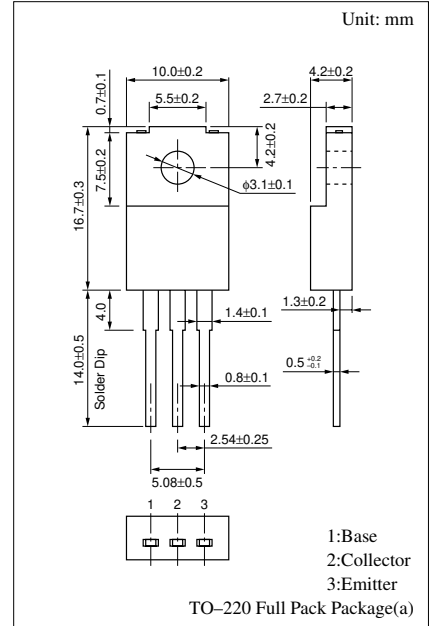
Complementary to 2SB1299

Features

- High forward current transfer ratio h_{FE}
- Satisfactory linearity of forward current transfer ratio h_{FE}
- 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 | Rated | Unit |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage | V_{CBO} | 80 | V |
| 2SD1273A | | 100 | |
| Collector to emitter voltage | V_{CEO} | 60 | V |
| 2SD1273A | | 80 | |
| Emitter to base voltage | V_{EBO} | 6 | V |
| Peak collector current | I_{CP} | 6 | A |
| Collector current | I_C | 3 | A |
| Base current | I_B | 1 | A |
| Collector power dissipation | P_C | 40 | W |
| $T_C=25^\circ\text{C}$ | | 2 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



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

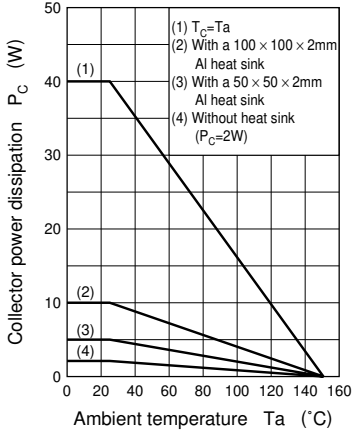
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---------------|--|-----|-----|------|---------------|
| Collector cutoff current | I_{CBO} | $V_{CB} = 80\text{V}, I_E = 0$ | | | 100 | μA |
| 2SD1273A | | $V_{CB} = 100\text{V}, I_E = 0$ | | | 100 | |
| Collector cutoff current | I_{CEO} | $V_{CE} = 40\text{V}, I_B = 0$ | | | 100 | μA |
| Emitter cutoff current | I_{EBO} | $V_{CB} = 6\text{V}, I_C = 0$ | | | 100 | μA |
| Collector to emitter voltage | V_{CEO} | $I_C = 25\text{mA}, I_B = 0$ | 60 | | | V |
| 2SD1273A | | | 80 | | | |
| Forward current transfer ratio | h_{FE}^* | $V_{CE} = 4\text{V}, I_C = 0.5\text{A}$ | 500 | | 2500 | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 2\text{A}, I_B = 0.05\text{A}$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE} = 12\text{V}, I_C = 0.2\text{A}, f = 10\text{MHz}$ | | 50 | | MHz |

* h_{FE} Rank classification

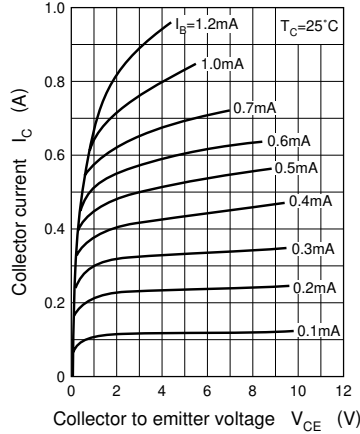
| Rank | Q | P | O |
|----------|-------------|-------------|--------------|
| h_{FE} | 500 to 1000 | 800 to 1500 | 1200 to 2500 |

Note: Ordering can be made by the common rank (PQ rank $h_{FE} = 500$ to 1500) in the rank classification.

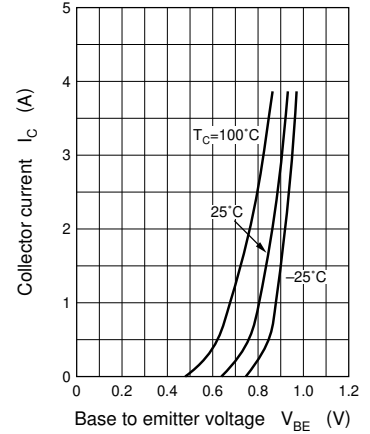
$P_C - T_a$



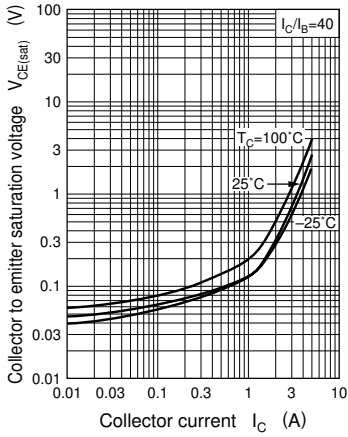
$I_C - V_{CE}$



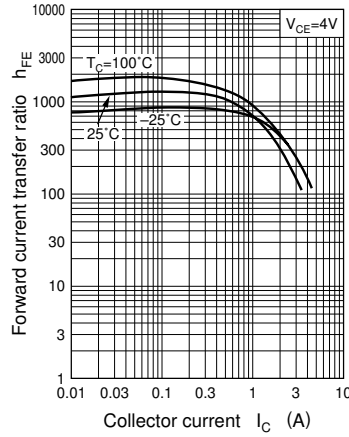
$I_C - V_{BE}$



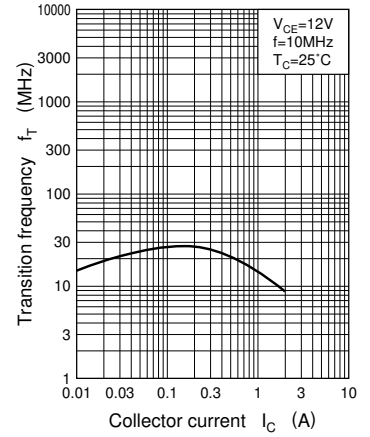
$V_{CE(sat)} - I_C$



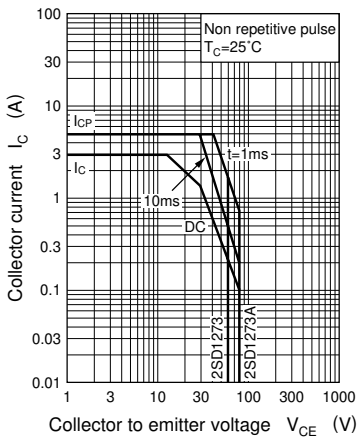
$h_{FE} - I_C$



$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$

