

2SD1275, 2SD1275A

Silicon NPN triple diffusion planar type darlington

For power amplification

Complementary to 2SB0949 and 2SB0949A

■ Features

- High forward current transfer ratio h_{FE}
- High-speed switching
- Full-pack package which can be installed to the heat sink with one screw

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

| Parameter | Symbol | Rating | Unit | |
|--|--------------------------|-------------|------------------|---|
| Collector-base voltage (Emitter open) | 2SD1275 | V_{CBO} | 60 | V |
| | 2SD1275A | | 80 | |
| Collector-emitter voltage (Base open) | 2SD1275 | V_{CEO} | 60 | V |
| | 2SD1275A | | 80 | |
| Emitter-base voltage (Collector open) | V_{EBO} | 5 | V | |
| Collector current | I_C | 2 | A | |
| Peak collector current | I_{CP} | 4 | A | |
| Collector power dissipation | $T_C = 25^\circ\text{C}$ | P_C | 35 | W |
| | | | 2.0 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ | |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ | |

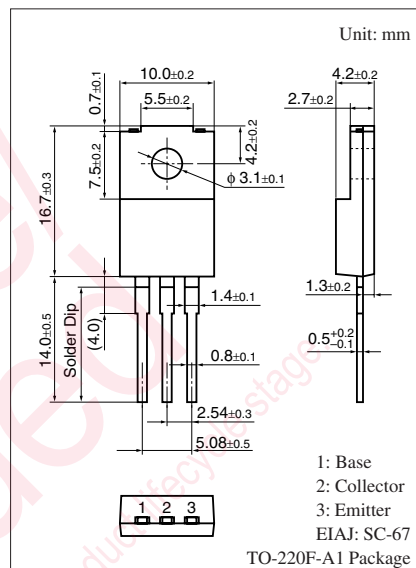
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|---|------|-----|-------|---------------|
| Collector-emitter voltage (Base open) | 2SD1275 | V_{CEO} $I_C = 30\text{ mA}, I_B = 0$ | 60 | | | V |
| | 2SD1275A | | 80 | | | |
| Base-emitter voltage | V_{BE} | $V_{CE} = 4\text{ V}, I_C = 2\text{ A}$ | | | 2.8 | V |
| Collector-base cutoff current (Emitter open) | 2SD1275 | I_{CBO} $V_{CB} = 60\text{ V}, I_E = 0$ | | | 1 | mA |
| | 2SD1275A | $V_{CB} = 80\text{ V}, I_E = 0$ | | | 1 | |
| Collector-emitter cutoff current (Base open) | 2SD1275 | I_{CEO} $V_{CE} = 30\text{ V}, I_B = 0$ | | | 2 | mA |
| | 2SD1275A | $V_{CE} = 40\text{ V}, I_B = 0$ | | | 2 | |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = 5\text{ V}, I_C = 0$ | | | 2 | mA |
| Forward current transfer ratio | h_{FE1} | $V_{CE} = 4\text{ V}, I_C = 1\text{ A}$ | 1000 | | | — |
| | h_{FE2}^* | $V_{CE} = 4\text{ V}, I_C = 2\text{ A}$ | 1000 | | 10000 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 2\text{ A}, I_B = 8\text{ mA}$ | | | 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} | $I_C = 2\text{ A}, I_{B1} = 8\text{ mA}, I_{B2} = -8\text{ mA}$ | | 0.5 | | μs |
| Storage time | t_{stg} | $V_{CC} = 50\text{ V}$ | | 4.0 | | μs |
| Fall time | t_f | | | 1.0 | | μs |

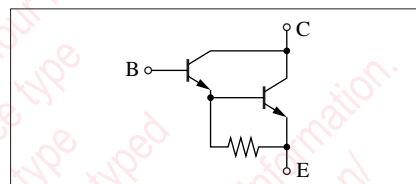
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

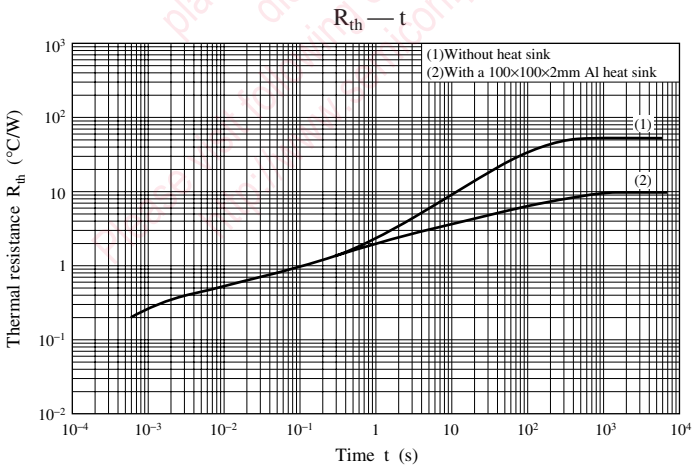
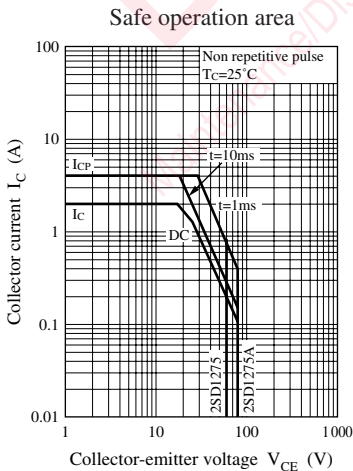
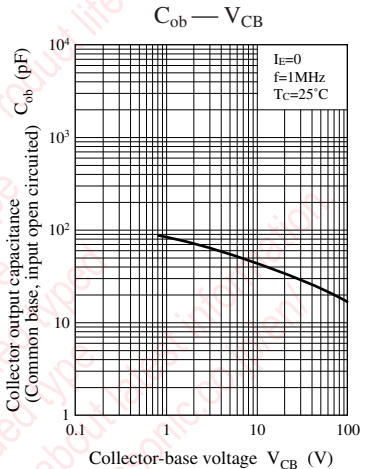
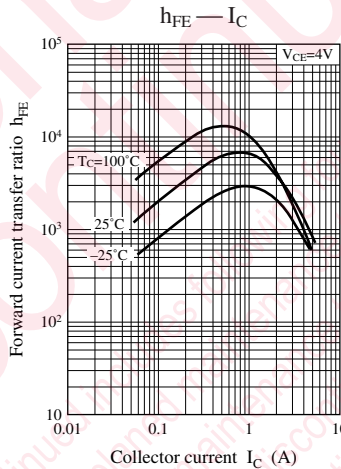
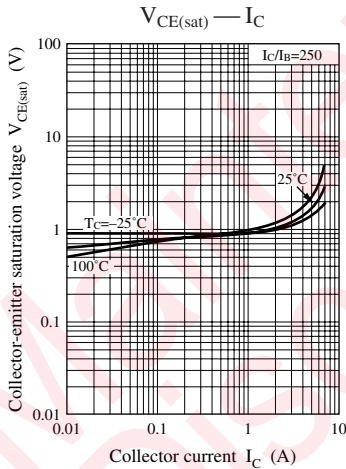
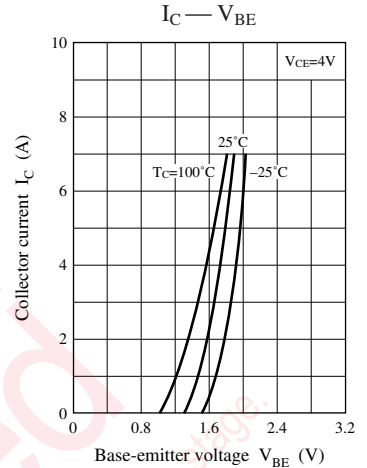
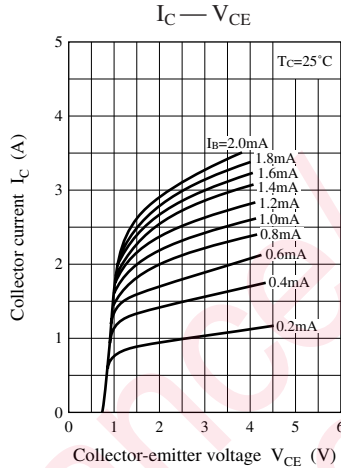
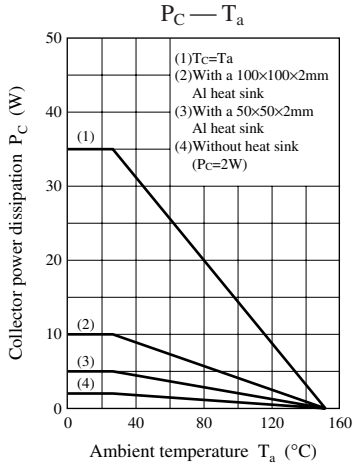
2. *: Rank classification

| Rank | R | Q | P |
|-----------|--------------|--------------|---------------|
| h_{FE2} | 1000 to 2500 | 2000 to 5000 | 4000 to 10000 |



Internal Connection





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