

2SD1275, 2SD1275A

Silicon NPN triple diffusion planar type Darlington

For power amplification

Complementary to 2SB949 and 2SB949A

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

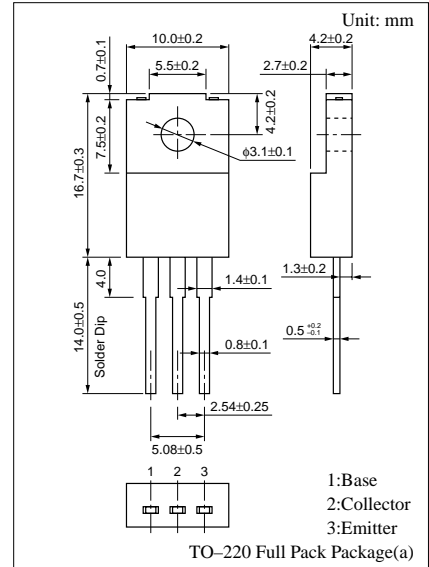
| Parameter | Symbol | Rated | Unit |
|------------------------------|-----------|-------------|------------------|
| Collector to base voltage | V_{CBO} | 60 | V |
| 2SD1275A | | 80 | |
| Collector to emitter voltage | V_{CEO} | 60 | V |
| 2SD1275A | | 80 | |
| Emitter to base voltage | V_{EBO} | 5 | V |
| Peak collector current | I_{CP} | 4 | A |
| Collector current | I_C | 2 | A |
| Collector power dissipation | P_C | 35 | W |
| $T_C=25^\circ\text{C}$ | | 2 | |
| $T_a=25^\circ\text{C}$ | | | |
| 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} | $V_{CB} = 60\text{V}, I_E = 0$ | | | 1 | mA |
| 2SD1275A | | $V_{CB} = 80\text{V}, I_E = 0$ | | | 1 | |
| Collector cutoff current | I_{CEO} | $V_{CE} = 30\text{V}, I_B = 0$ | | | 2 | mA |
| 2SD1275A | | $V_{CE} = 40\text{V}, I_B = 0$ | | | 2 | |
| Emitter cutoff current | I_{EBO} | $V_{EB} = 5\text{V}, I_C = 0$ | | | 2 | mA |
| Collector to emitter voltage | V_{CEO} | $I_C = 30\text{mA}, I_B = 0$ | 60 | | | V |
| 2SD1275A | | | 80 | | | |
| Forward current transfer ratio | h_{FE1} | $V_{CE} = 4\text{V}, I_C = 1\text{A}$ | 1000 | | | |
| | h_{FE2}^* | $V_{CE} = 4\text{V}, I_C = 2\text{A}$ | 2000 | | 10000 | |
| Base to emitter voltage | V_{BE} | $V_{CE} = 4\text{V}, I_C = 2\text{A}$ | | | 2.8 | V |
| Collector to 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} | $I_C = 2\text{A}, I_{B1} = 8\text{mA}, I_{B2} = -8\text{mA}, V_{CC} = 50\text{V}$ | | 0.5 | | μs |
| Storage time | t_{stg} | | | 4 | | μs |
| Fall time | t_f | | | 1 | | μs |

* h_{FE2} Rank classification

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



Internal Connection

