

2SB1418, 2SB1418A

Silicon PNP epitaxial planar type darlington

For power amplification

Complementary to 2SD2138 and 2SD2138A

■ Features

- High forward current transfer ratio h_{FE}
- High-speed switching
- Allowing automatic insertion with radial tapping

■ Absolute Maximum Ratings $T_C = 25^\circ C$

| Parameter | Symbol | Rating | Unit |
|--|-----------|--------------------|------------|
| Collector-base voltage (Emitter open) | 2SB1418 | -60 | V |
| | 2SB1418A | -80 | |
| Collector-emitter voltage (Base open) | 2SB1418 | -60 | V |
| | 2SB1418A | -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 | P_C | 15 | W |
| | | $T_a = 25^\circ C$ | |
| Junction temperature | T_j | 150 | $^\circ C$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ C$ |

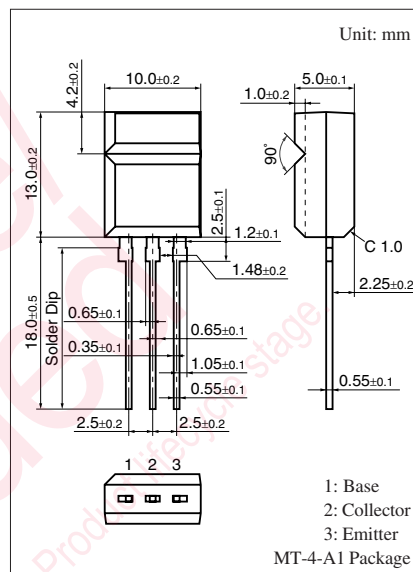
■ Electrical Characteristics $T_C = 25^\circ C \pm 3^\circ C$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|---|------|-----|-------|---------|
| Collector-emitter voltage (Base open) | 2SB1418 | $I_C = -30 \text{ mA}, I_B = 0$ | -60 | | | V |
| | 2SB1418A | | | | | |
| Base-emitter voltage | V_{BE} | $V_{CE} = -4 \text{ V}, I_C = -2 \text{ A}$ | | | -2.8 | V |
| Collector-base cutoff current (Emitter open) | 2SB1418 | $V_{CB} = -60 \text{ V}, I_E = 0$ | | | -100 | μA |
| | 2SB1418A | | | | | |
| Collector-emitter cutoff current (Base open) | 2SB1418 | $V_{CE} = -30 \text{ V}, I_B = 0$ | | | -100 | μA |
| | 2SB1418A | | | | | |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = -5 \text{ V}, I_C = 0$ | | | -100 | μA |
| 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} | $I_C = -2 \text{ A}, I_{B1} = -8 \text{ mA}, I_{B2} = 8 \text{ mA}$ | | 0.2 | | μs |
| Turn-off time | t_{off} | $V_{CC} = -50 \text{ V}$ | | 2 | | μs |

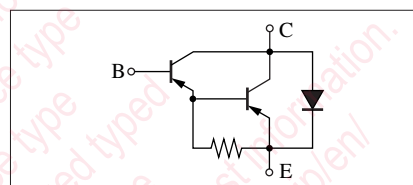
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

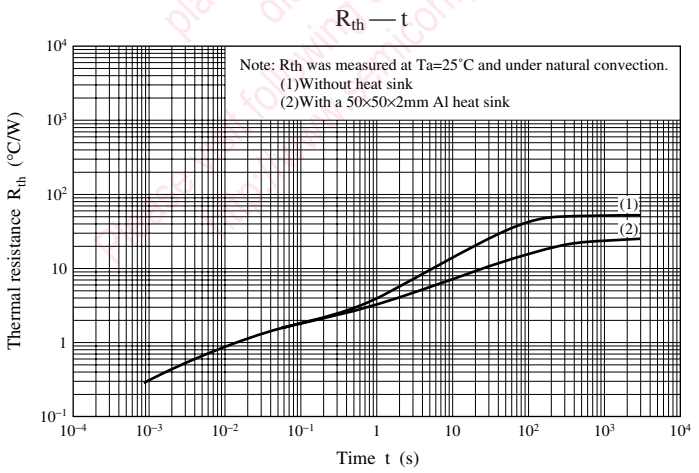
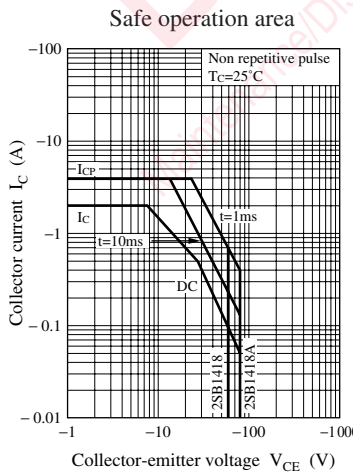
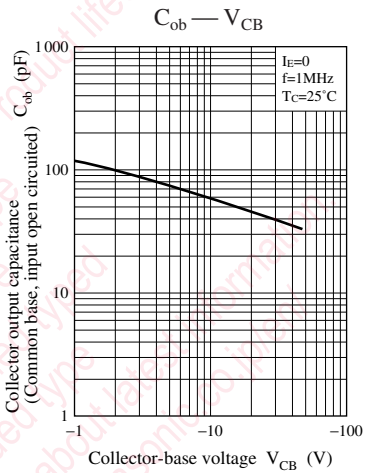
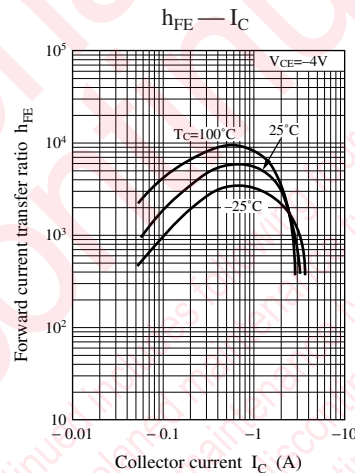
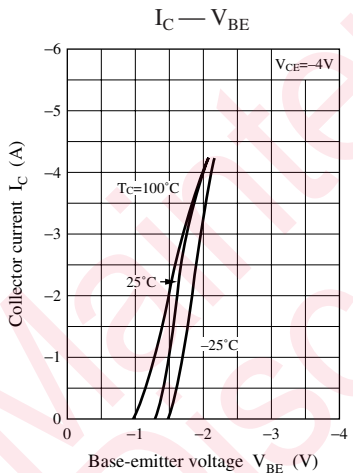
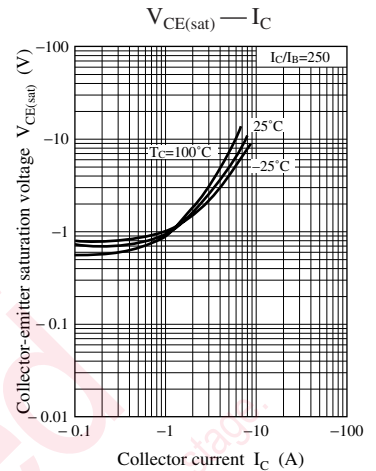
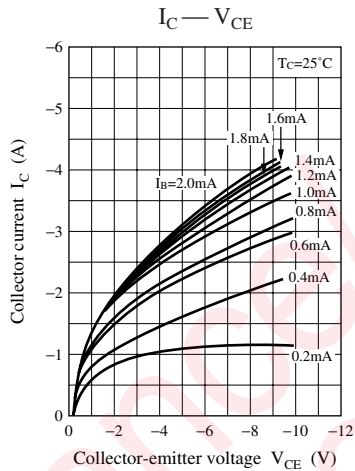
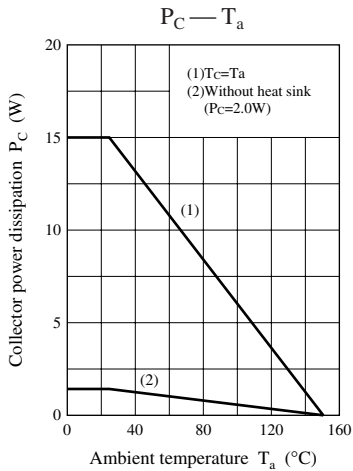
2. *: Rank classification

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



Internal Connection





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