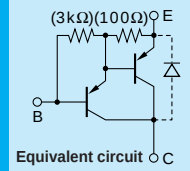


Darlington

# 2SB1259



Silicon PNP Epitaxial Planar Transistor (Complement to type 2SD2081)

Application : Driver for Solenoid, Relay and Motor and General Purpose

## Absolute maximum ratings (Ta=25°C)

| Symbol           | 2SB1259                  | Unit |
|------------------|--------------------------|------|
| V <sub>CB0</sub> | -120                     | V    |
| V <sub>CE0</sub> | -120                     | V    |
| V <sub>EB0</sub> | -6                       | V    |
| I <sub>C</sub>   | -10(Pulse-15)            | A    |
| I <sub>B</sub>   | -1                       | A    |
| P <sub>C</sub>   | 30(T <sub>C</sub> =25°C) | W    |
| T <sub>J</sub>   | 150                      | °C   |
| T <sub>stg</sub> | -55 to +150              | °C   |

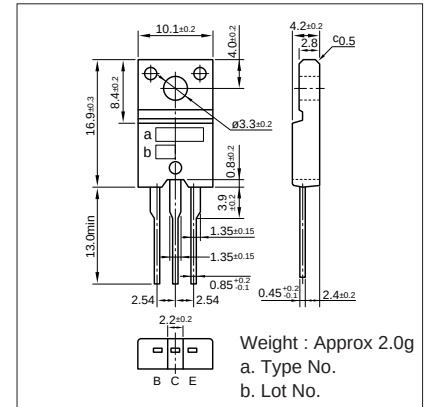
## Electrical Characteristics (Ta=25°C)

| Symbol               | Conditions                                  | 2SB1259 | Unit |
|----------------------|---------------------------------------------|---------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> =-120V                      | -10max  | μA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> =-6V                        | -10max  | mA   |
| V <sub>(BR)CEO</sub> | I <sub>C</sub> =-10mA                       | -120min | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> =-4V, I <sub>C</sub> =-5A   | 2000min |      |
| V <sub>CE(sat)</sub> | I <sub>C</sub> =-5A, I <sub>B</sub> =-10mA  | -1.5max | V    |
| V <sub>BE(sat)</sub> | I <sub>C</sub> =-5A, I <sub>B</sub> =-10mA  | -2.0max | V    |
| f <sub>T</sub>       | V <sub>CE</sub> =-12V, I <sub>E</sub> =0.2A | 100typ  | MHz  |
| COB                  | V <sub>CB</sub> =-10V, f=1MHz               | 145typ  | pF   |

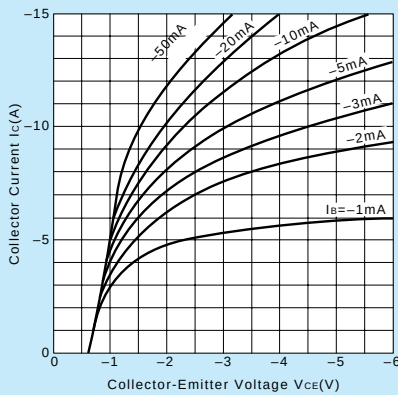
## Typical Switching Characteristics (Common Emitter)

| V <sub>CC</sub><br>(V) | R <sub>L</sub><br>(Ω) | I <sub>C</sub><br>(A) | V <sub>BB1</sub><br>(V) | V <sub>BB2</sub><br>(V) | I <sub>B1</sub><br>(mA) | I <sub>B2</sub><br>(mA) | t <sub>on</sub><br>(μs) | t <sub>stg</sub><br>(μs) | t <sub>f</sub><br>(μs) |
|------------------------|-----------------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|------------------------|
| -30                    | 10                    | -3                    | -10                     | 5                       | -6                      | 6                       | 0.6typ                  | 1.6typ                   | 0.5typ                 |

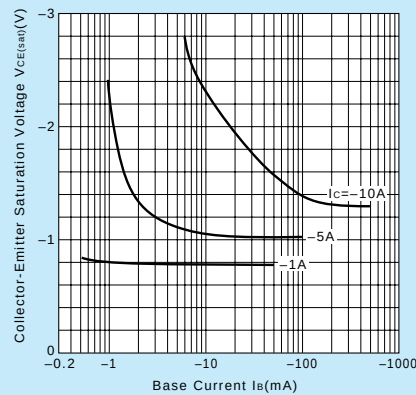
## External Dimensions FM20(TO220F)



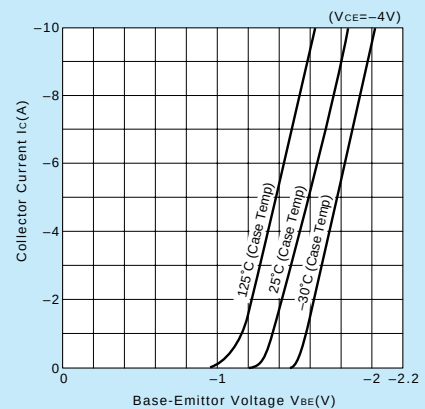
I<sub>C</sub>-V<sub>CE</sub> Characteristics (Typical)



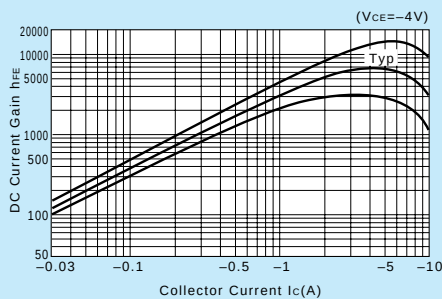
V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)



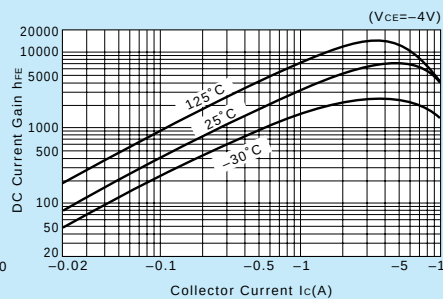
I<sub>C</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)



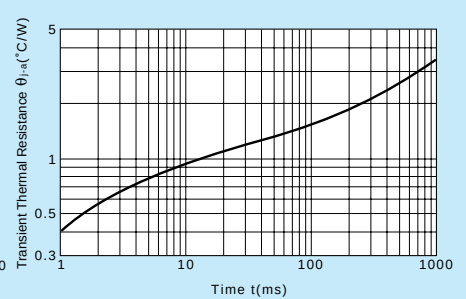
h<sub>FE</sub>-I<sub>C</sub> Characteristics (Typical)



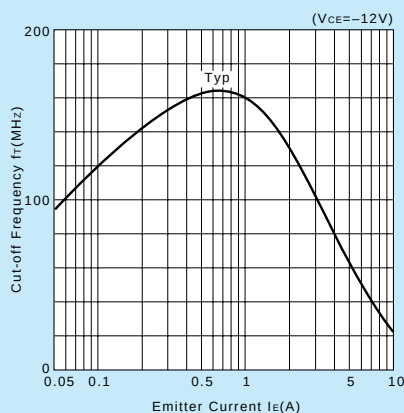
h<sub>FE</sub>-I<sub>C</sub> Temperature Characteristics (Typical)



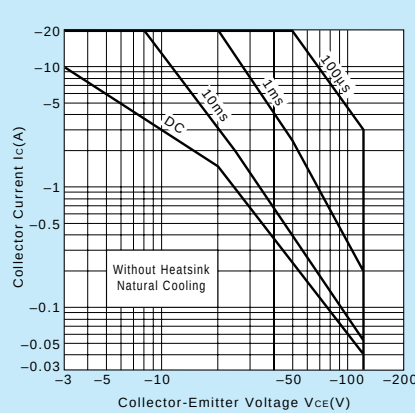
θ<sub>J-a</sub>-t Characteristics



f<sub>T</sub>-I<sub>E</sub> Characteristics (Typical)



Safe Operating Area (Single Pulse)



P<sub>C</sub>-T<sub>a</sub> Derating

