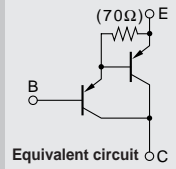


Darlington

# 2SB1588



Silicon PNP Epitaxial Planar Transistor (Complement to type 2SD2439)

Application : Audio, Series Regulator and General Purpose

■ Absolute maximum ratings (Ta=25°C)

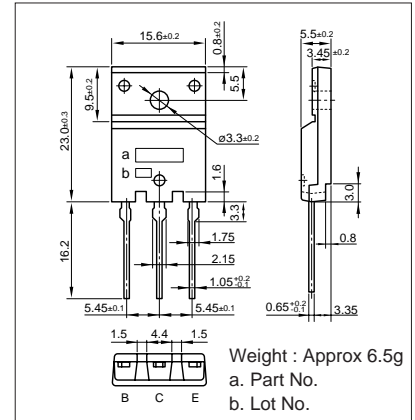
| Symbol           | Ratings                  | Unit |
|------------------|--------------------------|------|
| V <sub>CB0</sub> | -160                     | V    |
| V <sub>CEO</sub> | -150                     | V    |
| V <sub>EB0</sub> | -5                       | V    |
| I <sub>C</sub>   | -10                      | A    |
| I <sub>B</sub>   | -1                       | A    |
| P <sub>C</sub>   | 80(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                                | Ratings  | Unit |
|----------------------|---|----------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> =-160V                    | -100max  | μA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> =-5V                      | -100max  | μA   |
| V <sub>(BR)CEO</sub> | I <sub>C</sub> =-30mA                     | -150min  | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> =-4V, I <sub>C</sub> =-7A | 5000min* |      |
| V <sub>CE(sat)</sub> | I <sub>C</sub> =-7A, I <sub>B</sub> =-7mA | -2.5max  | V    |
| V <sub>BE(sat)</sub> | I <sub>C</sub> =-7A, I <sub>B</sub> =-7mA | -3.0max  | V    |
| f <sub>r</sub>       | V <sub>CE</sub> =-12V, I <sub>E</sub> =2A | 50typ    | MHz  |
| COB                  | V <sub>CB</sub> =-10V, f=1MHz             | 230typ   | pF   |

\*h<sub>FE</sub> Rank ○(5000to12000), P(6500to20000), Y(15000to30000)

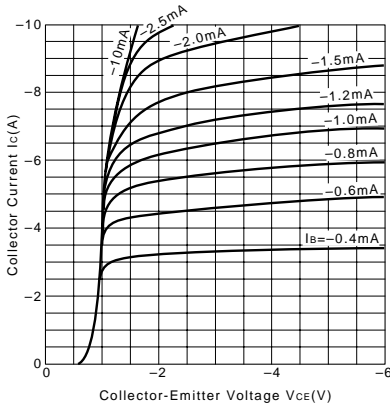
External Dimensions FM100(TO3PF)



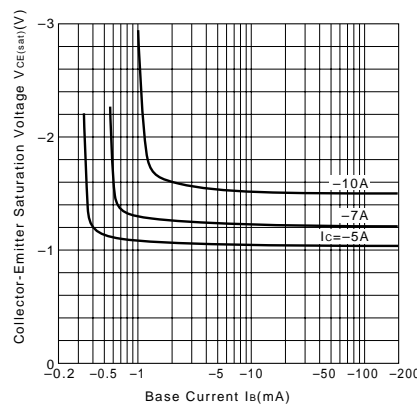
■ Typical Switching Characteristics (Common Emitter)

| V <sub>CC</sub> (V) | R <sub>L</sub> (Ω) | I <sub>C</sub> (A) | V <sub>BB1</sub> (V) | V <sub>BB2</sub> (V) | I <sub>B1</sub> (mA) | I <sub>B2</sub> (mA) | t <sub>on</sub> (μs) | t <sub>stg</sub> (μs) | t <sub>r</sub> (μs) |
|---------------------|--------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------------|
| -70                 | 10                 | -7                 | -10                  | 5                    | -7                   | 7                    | 0.8typ               | 3.0typ                | 1.2typ              |

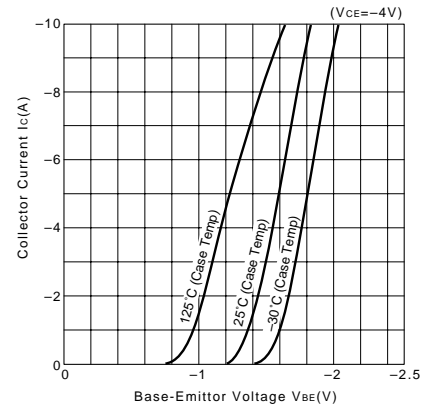
I<sub>C</sub>-V<sub>CE</sub> Characteristics (Typical)



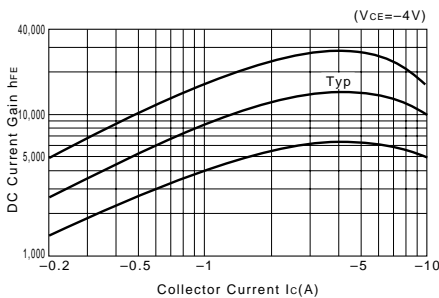
V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)



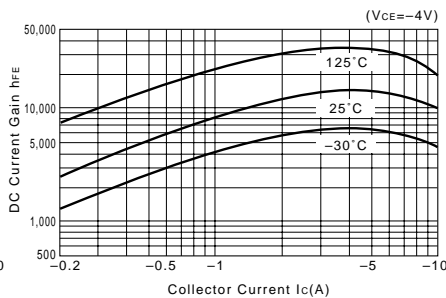
I<sub>C</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)



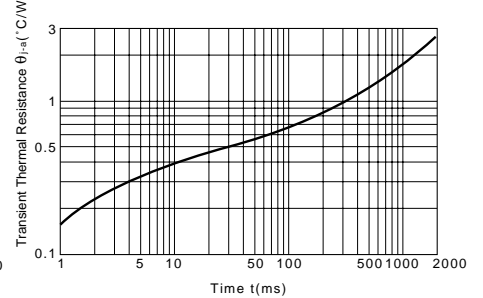
h<sub>FE</sub>-I<sub>C</sub> Characteristics (Typical)



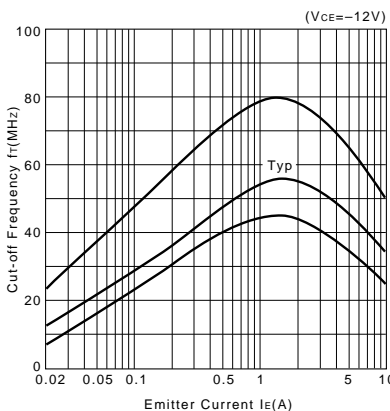
h<sub>FE</sub>-I<sub>C</sub> Temperature Characteristics (Typical)



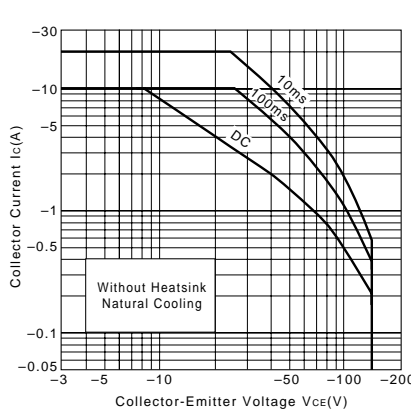
θ<sub>j-a</sub>-t Characteristics



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



Safe Operating Area (Single Pulse)



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

