

# 2SA1667/1668

Silicon PNP Epitaxial Planar Transistor (Complement to type 2SC4381/4382)

Application : TV Vertical Output, Audio Output Driver and General Purpose

## Absolute maximum ratings (Ta=25°C)

| Symbol           | 2SA1667     | 2SA1668 | Unit |
|------------------|-------------|---------|------|
| V <sub>CB0</sub> | -150        | -200    | V    |
| V <sub>CE0</sub> | -150        | -200    | V    |
| V <sub>EB0</sub> | -6          |         | V    |
| I <sub>c</sub>   | -2          |         | A    |
| I <sub>b</sub>   | -1          |         | A    |
| P <sub>c</sub>   | 25(Tc=25°C) |         | W    |
| T <sub>j</sub>   | 150         |         | °C   |
| T <sub>stg</sub> | -55 to +150 |         | °C   |

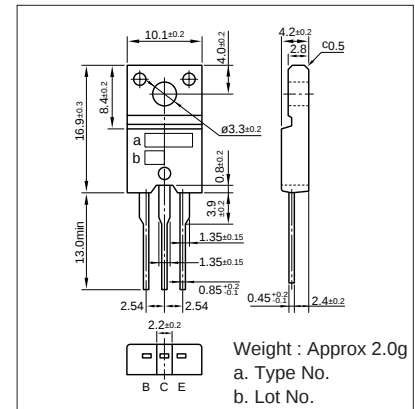
## Electrical Characteristics (Ta=25°C)

| Symbol               | Conditions                                    | 2SA1667 | 2SA1668 | Unit |
|----------------------|-----------------------------------------------|---------|---------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> =                             | -10max  | -10max  | μA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> =-6V                          | -10max  |         | μA   |
| V <sub>(BR)CEO</sub> | I <sub>c</sub> =-25mA                         | -150min | -200min | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> =-10V, I <sub>c</sub> =-0.7A  | 60min   |         |      |
| V <sub>CE(sat)</sub> | I <sub>c</sub> =-0.7A, I <sub>b</sub> =-0.07A | -1.0max |         | V    |
| f <sub>r</sub>       | V <sub>CE</sub> =-12V, I <sub>e</sub> =0.2A   | 20typ   |         | MHz  |
| COB                  | V <sub>CB</sub> =-10V, f=1MHz                 | 60typ   |         | pF   |

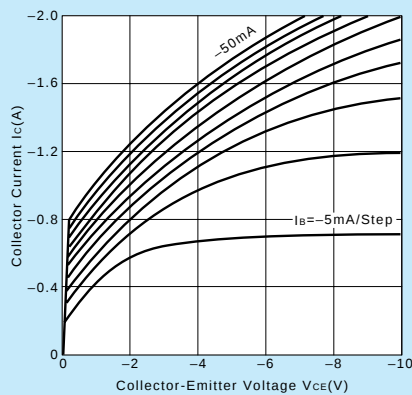
## Typical Switching Characteristics (Common Emitter)

| 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) | ton<br>(μs) | tstg<br>(μs) | tf<br>(μs) |
|------------------------|-----------------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------|--------------|------------|
| -20                    | 20                    | -1                    | -10                     | 5                       | -100                    | 100                     | 0.4typ      | 1.5typ       | 0.5typ     |

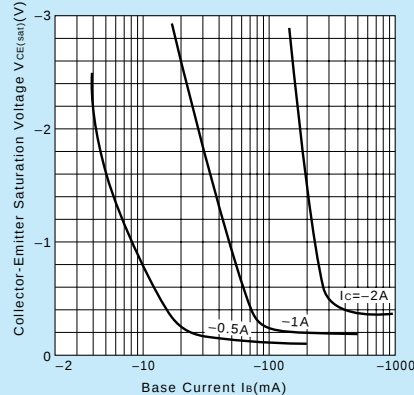
## External Dimensions FM20 (TO220F)



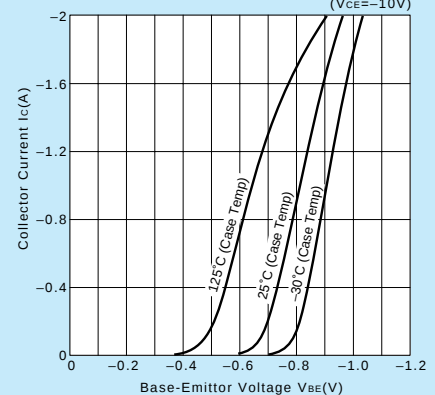
I<sub>c</sub>-V<sub>CE</sub> Characteristics (Typical)



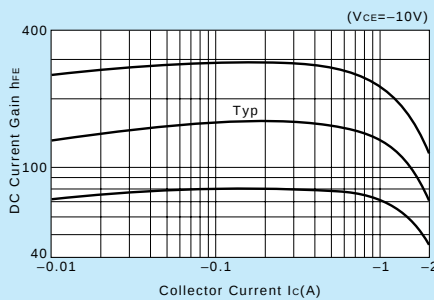
V<sub>CE(sat)</sub>-I<sub>b</sub> Characteristics (Typical)



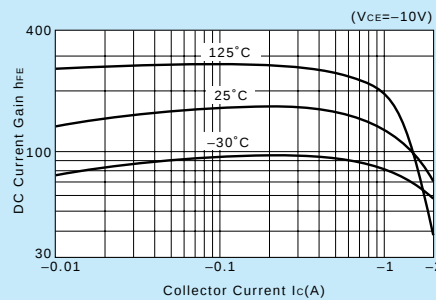
I<sub>c</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)



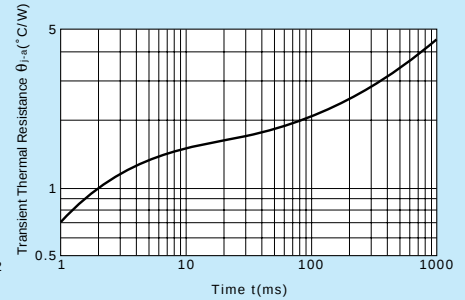
h<sub>FE</sub>-I<sub>c</sub> Characteristics (Typical)



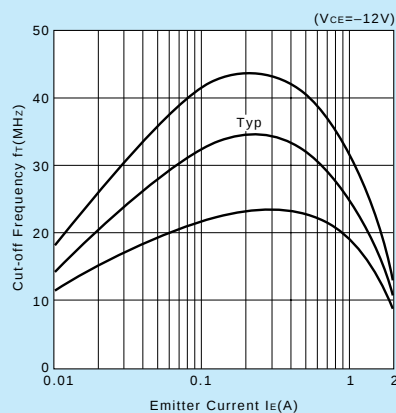
h<sub>FE</sub>-I<sub>c</sub> Temperature Characteristics (Typical)



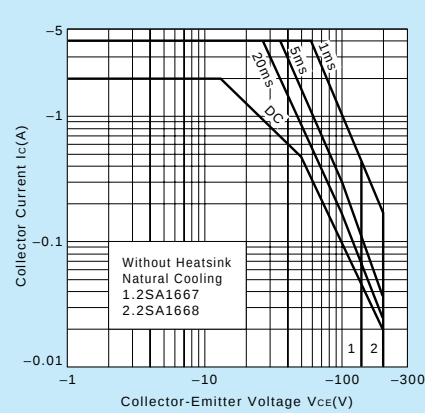
θ<sub>JA</sub>-t Characteristics



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



Safe Operating Area (Single Pulse)



P<sub>c</sub>-Ta Derating

