

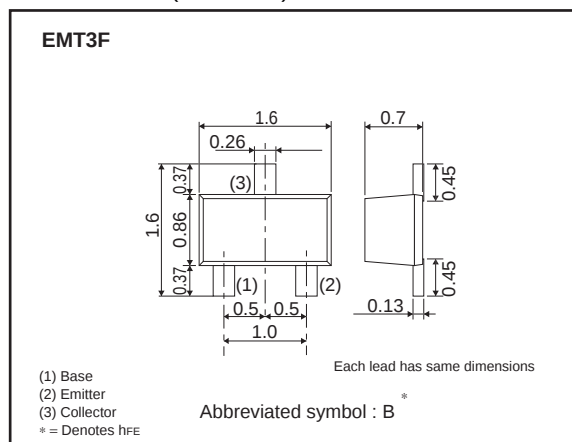
#### ●Features

- 1) Excellent  $h_{FE}$  linearity.
- 2) Complements the 2SA1774EB.

#### ●Structure

NPN silicon epitaxial  
planar transistor

#### ●Dimensions (Unit : mm)



#### ●Absolute maximum (Ta=25°C)

| Parameter                    | Symbol      | Limits      | Unit |
|------------------------------|-------------|-------------|------|
| Collector-base voltage       | $V_{CBO}$   | 60          | V    |
| Collector-emitter voltage    | $V_{CEO}$   | 50          | V    |
| Emitter-base voltage         | $V_{EBO}$   | 7           | V    |
| Collector current            | $I_C$       | 150         | mA   |
|                              | $I_{CP}$ *1 | 200         |      |
| Power dissipation            | $P_D$ *2    | 150         | mW   |
| Junction temperature         | $T_j$       | 150         | °C   |
| Range of storage temperature | $T_{stg}$   | -55 to +150 | °C   |

\*1  $P_W=1ms$  Single pulse

\*2 Each terminal mounted on a recommended land

#### ●Electrical characteristics (Ta=25°C)

| Parameter                            | Symbol        | Min. | Typ. | Max. | Unit | Conditions                       |
|--------------------------------------|---------------|------|------|------|------|----------------------------------|
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | 50   | —    | —    | V    | $I_C=1mA$                        |
| Collector-base breakdown voltage     | $BV_{CBO}$    | 60   | —    | —    | V    | $I_C=50\mu A$                    |
| Emitter-base breakdown voltage       | $BV_{EBO}$    | 7    | —    | —    | V    | $I_E=50\mu A$                    |
| Collector cutoff current             | $I_{CBO}$     | —    | —    | 100  | nA   | $V_{CB}=60V$                     |
| Emitter cutoff current               | $I_{EBO}$     | —    | —    | 100  | nA   | $V_{EB}=7V$                      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | —    | —    | 400  | mV   | $I_C/I_E=50mA/5mA$               |
| DC current gain                      | $h_{FE}$      | 120  | —    | 560  | —    | $V_{CE}=6V, I_C=1mA$             |
| Transition frequency                 | $f_T$         | —    | 180  | —    | MHz  | $V_{CE}=12V, I_E=-2mA, f=100MHz$ |
| Output capacitance                   | $C_{ob}$      | —    | 2    | 3.5  | pF   | $V_{CE}=12V, I_E=0A, f=1MHz$     |

#### $h_{FE}$ rank categories

| Rank     | Q          | R          | S          |
|----------|------------|------------|------------|
| $h_{FE}$ | 120 to 270 | 180 to 390 | 270 to 560 |

## Electrical characteristic curves

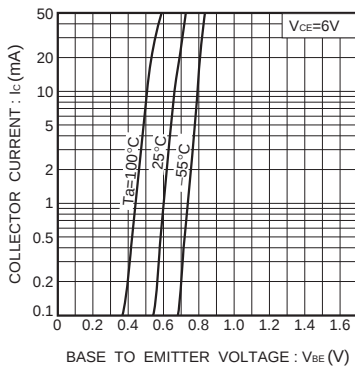


Fig.1 Grounded emitter propagation characteristics

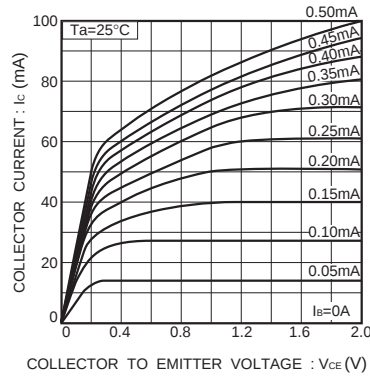


Fig.2 Grounded emitter output characteristics ( I )

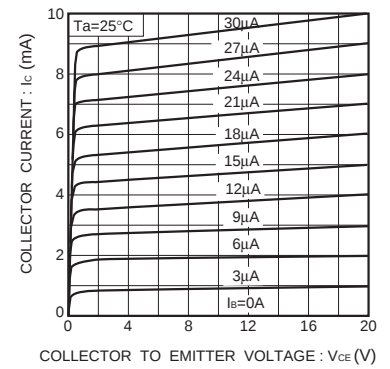


Fig.3 Grounded emitter output characteristics ( II )

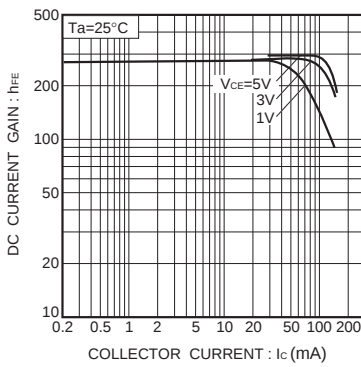


Fig.4 DC current gain vs. collector current ( I )

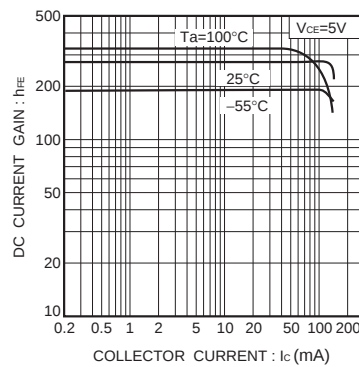


Fig.5 DC current gain vs. collector current ( II )

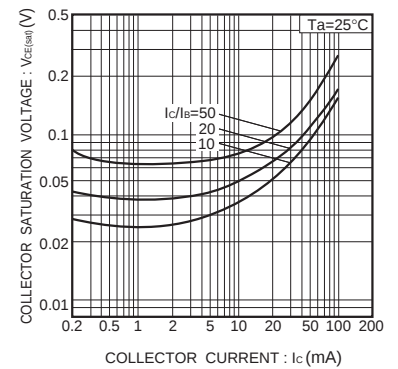


Fig.6 Collector-emitter saturation voltage vs. collector current

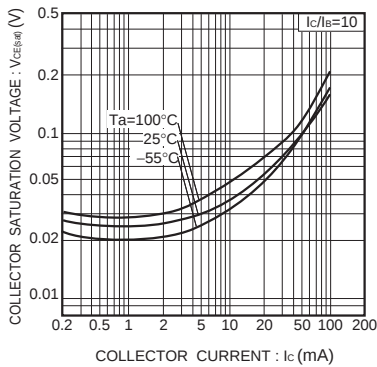


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

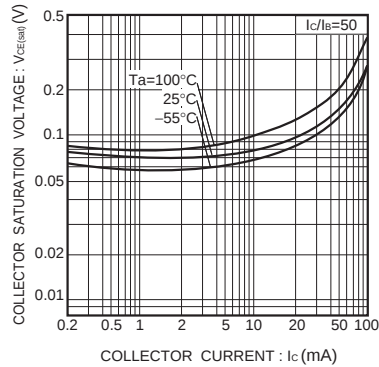


Fig.8 Collector-emitter saturation voltage vs. collector current ( II )

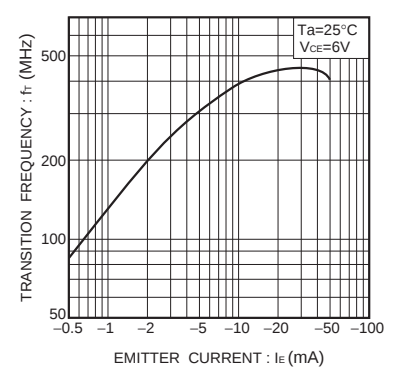


Fig.9 Gain bandwidth product vs. emitter current

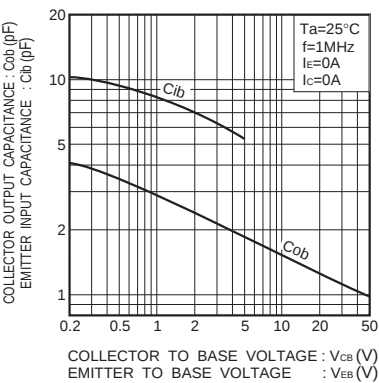


Fig.10 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

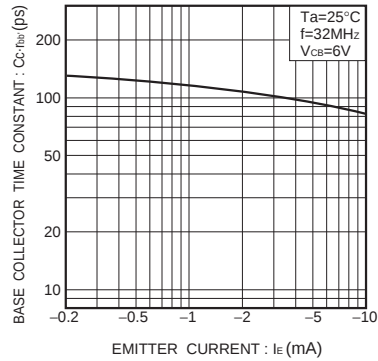


Fig.11 Base-collector time constant vs. emitter current

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