

**Silicon NPN transistor epitaxial type  
D5849**
**[ Applications ]**

General purpose amplifier and switching

**[ Feature ]**

Correspond to BC817

High collector current

 Low collector-emitter saturation voltage  $V_{CE(sat)} = 0.15V$  (Typ.) at  $I_C = 500mA$ ,  $I_B = 50mA$ 

 Small collector output capacitance  $C_{ob} = 4pF$  (Typ.) at  $V_{CB} = 10V$ 

Complimentary type of phenitec P/N B5849

**[ Absolute maximum ratings (Ta=25C) ]**

| Characteristic            | Symbol | Maximum ratings | Unit |
|---------------------------|--------|-----------------|------|
| Collector-base voltage    | VCBO   | 50              | V    |
| Collector-emitter voltage | VCEO   | 45              | V    |
| Emitter-base voltage      | VEBO   | 5               | V    |
| Collector current         | IC     | 500             | mA   |
| Junction temperature      | Tj     | 150             | C    |
| Storage temperature       | Tstg   | -55 to 150      | C    |

**[ Electrical characteristics (Ta=25C) ]**

| Characteristic                       | Symbol        | Min. | Typ. | Max. | Unit | Conditions                               |
|--------------------------------------|---------------|------|------|------|------|--|
| Collector-base breakdown voltage     | BVCBO         | 50   | -    | -    | V    | $I_C = 10\mu A$ , $I_E = 0A$             |
| Collector-emitter breakdown voltage  | BVCEO         | 45   | -    | -    | V    | $I_C = 10mA$ , $I_B = 0A$                |
| Emitter-base breakdown voltage       | BVEBO         | 5    | -    | -    | V    | $I_E = 1\mu A$ , $I_C = 0A$              |
| Collector cut-off current            | ICBO          | -    | -    | 100  | nA   | $V_{CB} = 20V$ , $I_E = 0A$              |
| Emitter cut-off current              | IEBO          | -    | -    | 100  | nA   | $V_{EB} = 5V$ , $I_E = 0A$               |
| DC current gain 1                    | hFE 1         | 100  | -    | 600  | -    | $V_{CE} = 1V$ , $I_C = 100mA$            |
| DC current gain 2                    | hFE 2         | 40   | -    | -    | -    | $V_{CE} = 1V$ , $I_C = 500mA$            |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | -    | -    | 0.7  | V    | $I_C = 500mA$ , $I_B = 50mA$             |
| Base-emitter on voltage              | $V_{BE(on)}$  | -    | -    | 1.2  | V    | $V_{CE} = 1V$ , $I_C = 500mA$            |
| Transition frequency                 | fT            | 100  | -    | -    | MHz  | $V_{CE} = 5V$ , $I_E = -10mA$            |
| Collector output capacitance         | Cob           | -    | 4    | -    | pF   | $V_{CB} = 10V$ , $f = 1MHz$ , $I_E = 0A$ |

Notice 1) These are measured data of transistors assembled by PHENITEC SEMICONDUCTOR Corp. and are for reference only.

Notice 2) The contents described herein are subject to change without notice.

Fig.1 VBE(on) - IC  
at VCE= 1V, Ta= 25C

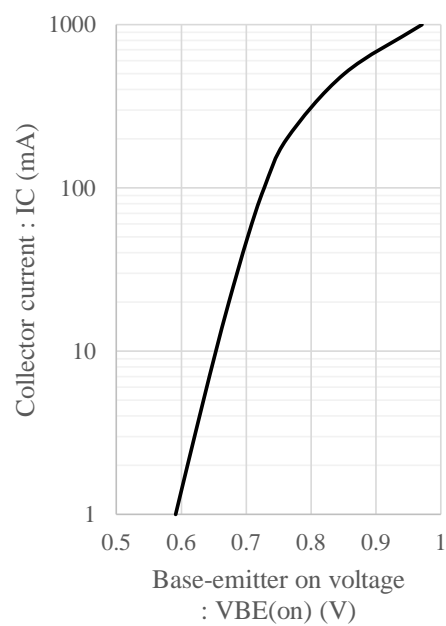


Fig.2 hFE - IC  
at VCE= 1V, Ta= 25V

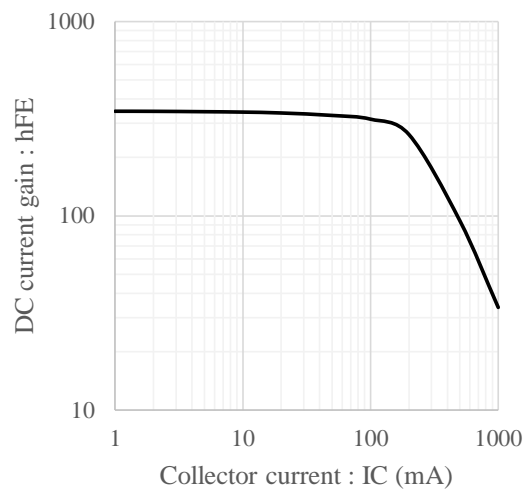


Fig.3 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

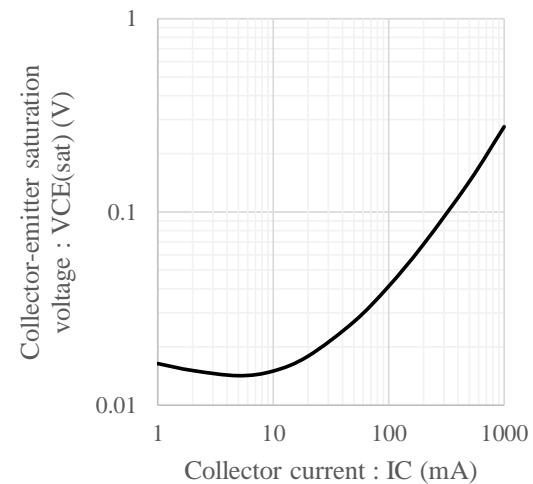


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

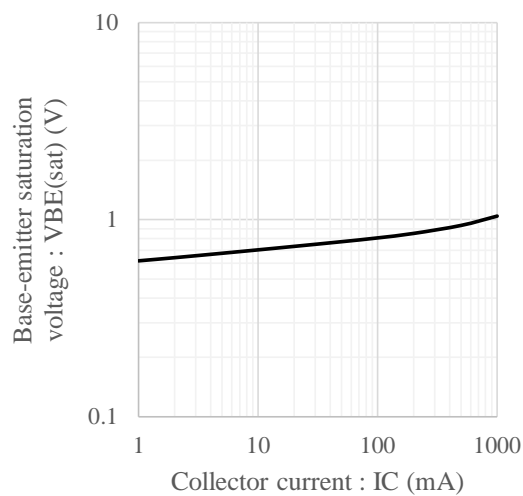


Fig.5 fT - IE  
at VCE= 5V, Ta= 25C

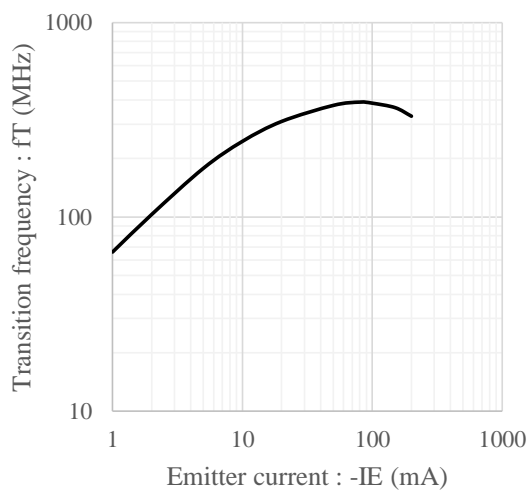


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

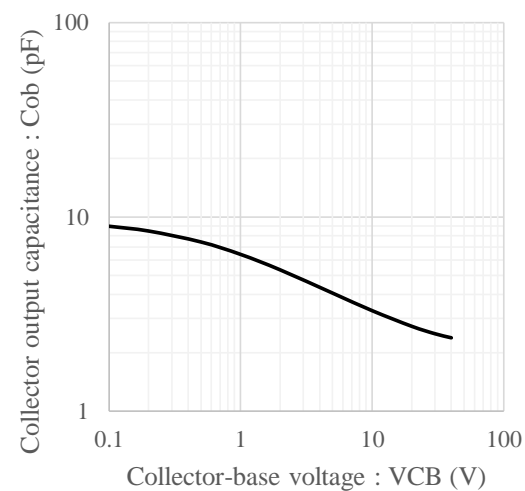


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

