

**Silicon NPN transistor epitaxial type  
D5994**

**[ Applications ]**

General purpose transistors  
Medium power amplifier and switching

**[ Feature ]**

Low collector saturation voltage  $V_{CE(sat)} = 0.15V(\text{Typ.})$  at  $I_C = 500mA$ ,  $I_B = 50mA$   
Complimentary pair with phenitec P/N B5994

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

| Characteristic            | Symbol | Maximum ratings | Unit |
|---------------------------|--------|-----------------|------|
| Collector-base voltage    | VCBO   | 40              | V    |
| Collector-emitter voltage | VCEO   | 32              | V    |
| Emitter-base voltage      | VEBO   | 5               | V    |
| Collector current         | IC     | 0.8             | A    |
| 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         | 40   | -    | -    | V       | $I_C = 50\mu A$ , $I_E = 0A$             |
| Collector-emitter breakdown voltage  | BVCEO         | 32   | -    | -    | V       | $I_C = 1mA$ , $I_B = 0A$                 |
| Emitter-base breakdown voltage       | BVEBO         | 5    | -    | -    | V       | $I_E = 50\mu A$ , $I_C = 0A$             |
| Collector cut-off current            | ICBO          | -    | -    | 0.5  | $\mu A$ | $V_{CB} = 40V$ , $I_E = 0A$              |
| Emitter cut-off current              | IEBO          | -    | -    | 0.5  | $\mu A$ | $V_{EB} = 5V$ , $I_E = 0A$               |
| DC current gain                      | hFE           | 68   | -    | 470  | -       | $V_{CE} = 3V$ , $I_C = 100mA$            |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | -    | 0.15 | 0.4  | V       | $I_C = 500mA$ , $I_B = 50mA$             |
| Transition frequency                 | fT            | 50   | 150  | -    | MHz     | $V_{CE} = 5V$ , $I_E = -50mA$            |
| Collector output capacitance         | Cob           | -    | 10   | 20   | 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 hFE - IC  
at VCE= 3V, Ta= 25C

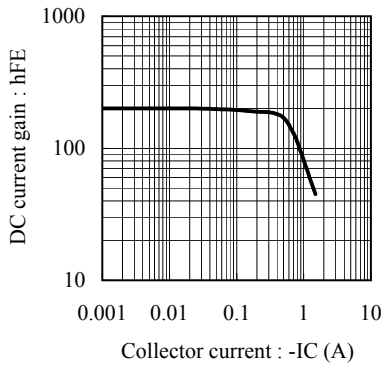


Fig.2 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

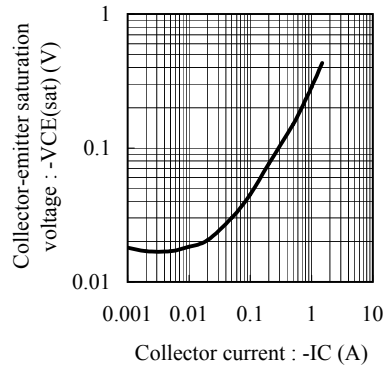


Fig.3 fT - IE  
at VCE= 5V, Ta= 25C

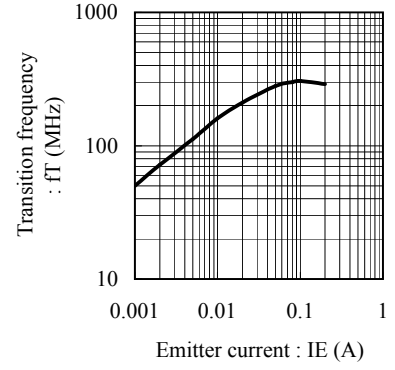


Fig.4 Cob - VCB  
at f= 1MHz, Ta= 25C

