

**Silicon NPN transistor epitaxial type
CP898**

[Applications]

Industrial and consumer high speed switch required products
Medium power amplifier

[Feature]

Electrical characteristics equivalent with MMBT4401
High level emitter-base voltage BVEBO= 8V

[Absolute maximum ratings (Ta=25°C)]

| Characteristic | Symbol | Maximum ratings | Unit |
|---------------------------|--------|-----------------|------|
| Collector-base voltage | VCBO | 60 | V |
| Collector-emitter voltage | VCEO | 40 | V |
| Emitter-base voltage | VEBO | 8 | V |
| Collector current | IC | 600 | mA |
| Junction temperature | Tj | 150 | C |
| Storage temperature | Tstg | -55 to 150 | C |

[Electrical characteristics (Ta=25°C)]

| Characteristic | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--|------------|------|------|------|------|-----------------------------|
| Collector-base breakdown voltage | BVCBO | 60 | - | - | V | IC= 100uA, IE= 0A |
| Collector-emitter breakdown voltage | BVCEO | 40 | - | - | V | IC= 1mA, IB= 0A |
| Emitter-base breakdown voltage | BVEBO | 8 | - | - | V | IE= 100uA, IC= 0A |
| Collector cut-off current | ICEX | - | - | 100 | nA | VCE= 35V, VEB= 0.4V |
| Emitter cut-off current | IEBO | - | - | 100 | nA | VEB= 6V, IC= 0A |
| DC current gain 1 | hFE 1 | 20 | - | - | - | VCE= 1V, IC= 0.1mA |
| DC current gain 2 | hFE 2 | 40 | - | - | - | VCE= 1V, IC= 1mA |
| DC current gain 3 | hFE 3 | 80 | - | - | - | VCE= 1V, IC= 10mA |
| DC current gain 4 | hFE 4 | 100 | - | 300 | - | VCE= 1V, IC= 150mA |
| DC current gain 5 | hFE 5 | 40 | - | - | - | VCE= 2V, IC= 500mA |
| Collector-emitter saturation voltage 1 | VCE(sat) 1 | - | - | 0.4 | V | IC= 150mA, IB= 15mA |
| Collector-emitter saturation voltage 2 | VCE(sat) 2 | - | - | 0.75 | V | IC= 500mA, IB= 50mA |
| Base-emitter saturation voltage 1 | VBE(sat) 1 | 0.75 | - | 0.95 | V | IC= 150mA, IB= 15mA |
| Base-emitter saturation voltage 2 | VBE(sat) 2 | - | - | 1.2 | V | IC= 500mA, IB= 50mA |
| Transition frequency | f T | 250 | - | - | MHz | VCE= 10V, IE= -20mA |
| Output capacitance | Cob | - | - | 6.5 | pF | VCB= 5V, f = 1MHz, IE= 0A |
| Input capacitance | Cib | - | - | 30 | pF | VEB= 0.5V, f = 1MHz, IE= 0A |
| Delay Time | td | - | - | 15 | ns | VCC= 30V, VBE= -2V |
| Rise Time | tr | - | - | 20 | ns | IC= 150mA, IB1= 15mA |
| Storage Time | tstg | - | - | 225 | ns | VCC= 30V, IC= 150mA |
| Fall Time | tf | - | - | 30 | ns | IB1= -IB2= 15mA |

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 Ta= 25C

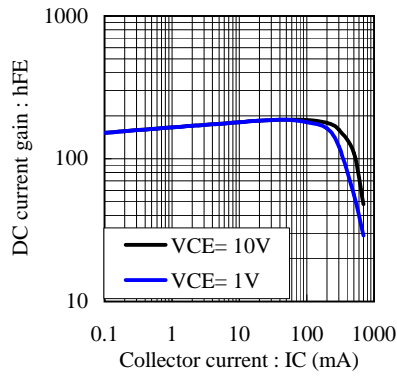


Fig.2 VCE(sat) - IC
at IC/IB= 10, Ta= 25C

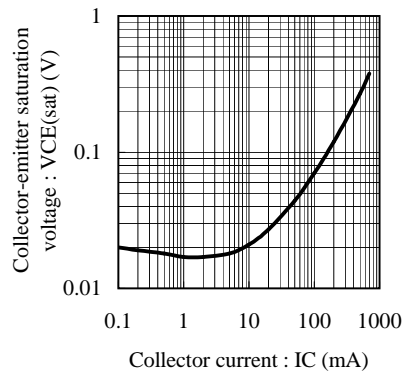


Fig.3 VBE(sat) - IC
at IC/IB= 10, Ta= 25C

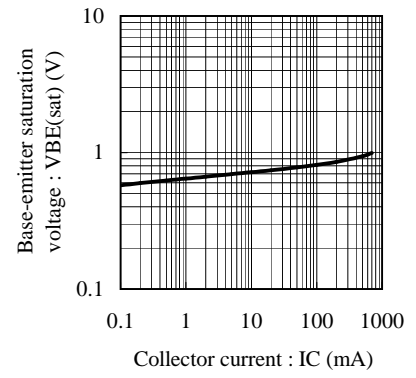


Fig.4 fT - IE
at VCE= 20V, Ta= 25C

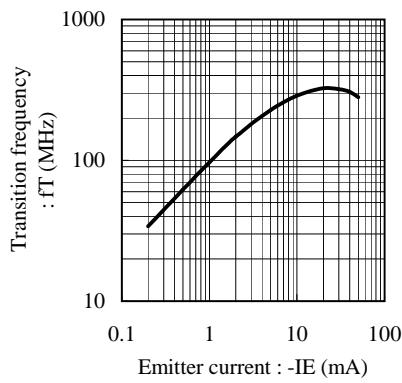


Fig.5 Cob - VCB
at f= 1MHz, Ta= 25C

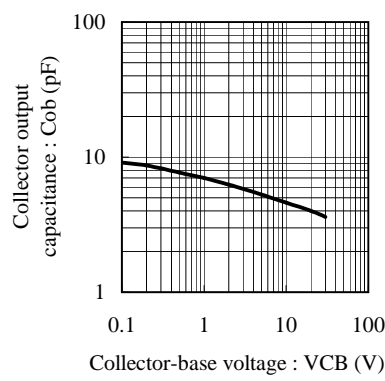


Fig.6 Cib - VEB
at f= 1MHz, Ta= 25C

