

Silicon NPN transistor epitaxial type DP922

[Applications]

General purpose amplifier, Switching

[Feature]

Low collector-emitter saturation voltage $V_{CE(sat)} = 1.2V(\text{Max.})$ at $I_C/I_B = 3A/0.375A$

Low transition frequency $f_T = 3\text{MHz}(\text{Min.})$ at $V_{CE} = 10V, I_E = -0.5A$

[Absolute maximum ratings ($T_a = 25^\circ\text{C}$)]

| Characteristic | Symbol | Maximum ratings | Unit |
|---------------------------|-----------|-----------------|------|
| Collector-base voltage | VCBO | 100 | V |
| Collector-emitter voltage | VCEO | 100 | V |
| Emitter-base voltage | VEBO | 5 | V |
| Collector current | I_C | 3 | A |
| Junction temperature | T_j | 150 | C |
| Storage temperature | T_{stg} | -55 to 150 | C |

[Electrical characteristics ($T_a = 25^\circ\text{C}$)]

| Characteristic | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|---------------|---|
| Collector-base breakdown voltage | BVCBO | 100 | - | - | V | $I_C = 100\mu\text{A}$ |
| Collector-emitter breakdown voltage | BVCEO | 100 | - | - | V | $I_C = 30\text{mA}$ |
| Emitter-base breakdown voltage | BVEBO | 5 | - | - | V | $I_E = 100\mu\text{A}$ |
| Collector cut-off current | ICBO | - | - | 1 | μA | $V_{CB} = 80\text{V}$ |
| Collector cut-off current | ICEO | - | - | 1 | μA | $V_{CE} = 80\text{V}$ |
| Emitter cut-off current | IEBO | - | - | 1 | μA | $V_{EB} = 5\text{V}$ |
| DC current gain 1 | h_{FE1} | 20 | - | - | - | $V_{CE} = 4\text{V}, I_C = 10\text{mA}$ |
| DC current gain 2 | h_{FE2} | 25 | - | - | - | $V_{CE} = 4\text{V}, I_C = 1\text{A}$ |
| DC current gain 3 | h_{FE3} | 10 | - | 50 | - | $V_{CE} = 4\text{V}, I_C = 3\text{A}$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | - | - | 1.2 | V | $I_C = 3\text{A}, I_B = 0.375\text{A}$ |
| Base-emitter on voltage | $V_{BE(on)}$ | - | - | 1.8 | V | $V_{CE} = 4\text{V}, I_C = 3\text{A}$ |
| Transition frequency | f_T | 3 | - | - | MHz | $V_{CE} = 10\text{V}, I_E = -0.5\text{A}$ |

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= 4V, Ta= 25C

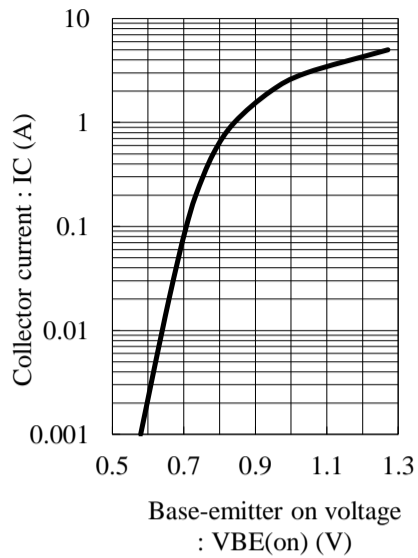


Fig.2 hFE - IC
at VCE= 4V, Ta= 25C

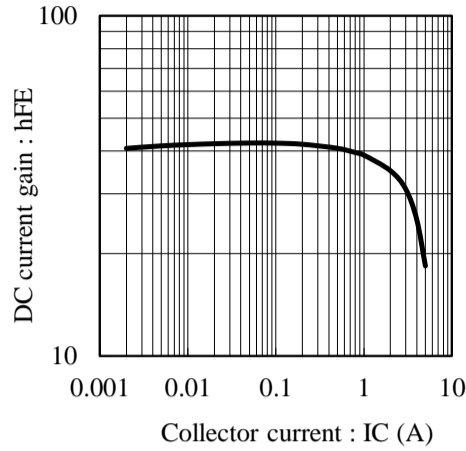


Fig.3 VCE(sat) - IC
at IC/IB= 8, Ta= 25C

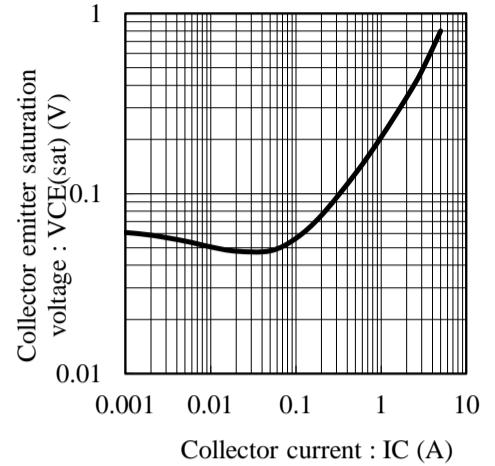


Fig.4 VCE(sat) - IC
at IC/IB= 10, Ta= 25C

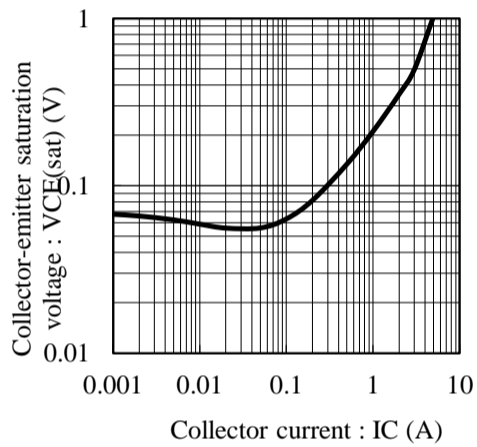


Fig.5 VBE(sat) - IC
at IC/IB= 10, Ta= 25C

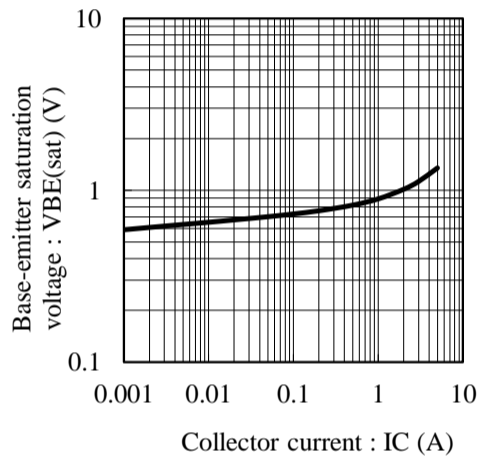


Fig.6 fT - IE
at VCE= 10V, Ta= 25C

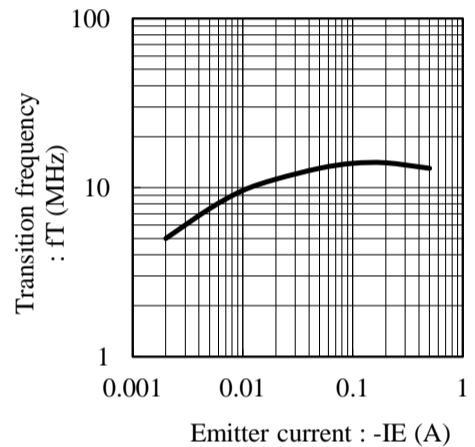


Fig.7 Cob - VCB
at f= 1MHz, Ta= 25C

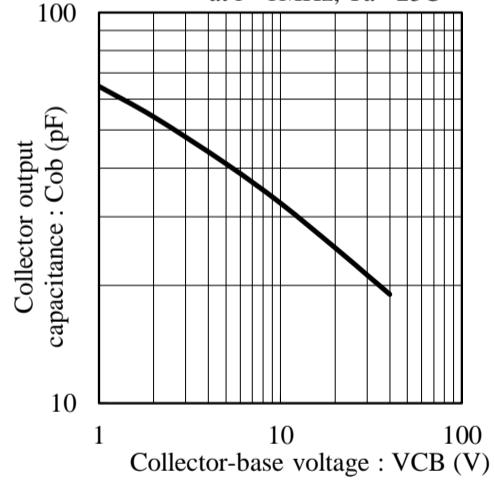


Fig.8 Cib - VEB
at f= 1MHz, Ta= 25C

