



# 4MN10CH — High-Frequency General-Purpose Amplifier Applications

NPN Epitaxial Planar Silicon Transistor

## Features

- High  $f_T$  :  $f_T=400\text{MHz}$  (typ).
- High breakdown voltage :  $V_{CEO}\geq 200\text{V}$ .
- Small reverse transfer capacitance and excellent high-frequency characteristic :  $C_{re}=1.4\text{pF}$ .

## Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$

| Parameter                    | Symbol    | Conditions  | Ratings     | Unit             |
|------------------------------|-----------|---|-------------|------------------|
| Collector-to-Base Voltage    | $V_{CBO}$ |   | 200         | V                |
| Collector-to-Emitter Voltage | $V_{CEO}$ |   | 200         | V                |
| Emitter-to-Base Voltage      | $V_{EBO}$ |   | 4           | V                |
| Collector Current            | $I_C$     |   | 100         | mA               |
| Collector Current (Pulse)    | $I_{CP}$  |   | 200         | mA               |
| Collector Dissipation        | $P_C$     | Mounted on a ceramic board (600mm $\times$ 0.8mm) | 600         | mW               |
| Junction Temperature         | $T_j$     |   | 150         | $^\circ\text{C}$ |
| Storage Temperature          | $T_{stg}$ |   | -55 to +150 | $^\circ\text{C}$ |

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$

| Parameter                               | Symbol        | Conditions                           | Ratings |     |     | Unit          |
|---|---------------|--------------------------------------|---------|-----|-----|---------------|
|   |               |                                      | min     | typ | max |               |
| Collector Cutoff Current                | $I_{CBO}$     | $V_{CB}=150\text{V}, I_E=0\text{A}$  |         |     | 0.1 | $\mu\text{A}$ |
| Emitter Cutoff Current                  | $I_{EBO}$     | $V_{EB}=2\text{V}, I_C=0\text{A}$    |         |     | 1.0 | $\mu\text{A}$ |
| DC Current Gain                         | $h_{FE1}$     | $V_{CE}=10\text{V}, I_C=10\text{mA}$ | 60      |     | 200 |               |
|   | $h_{FE2}$     | $V_{CE}=10\text{V}, I_C=60\text{mA}$ | 20      |     |     |               |
| Gain-Bandwidth Product                  | $f_T$         | $V_{CE}=30\text{V}, I_C=30\text{mA}$ |         | 400 |     | MHz           |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=30\text{mA}, I_B=3\text{mA}$    |         |     | 0.6 | V             |
| Collector-to-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C=10\mu\text{A}, I_E=0\text{A}$   | 200     |     |     | V             |
| Collector-to-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, R_{BE}=\infty$      | 200     |     |     | V             |
| Emitter-to-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0\text{A}$  | 4       |     |     | V             |
| Output Capacitance                      | $C_{ob}$      | $V_{CB}=30\text{V}, f=1\text{MHz}$   |         | 1.8 |     | pF            |
| Reverse Transfer Capacitance            | $C_{re}$      | $V_{CB}=30\text{V}, f=1\text{MHz}$   |         | 1.4 |     | pF            |

Marking : GL

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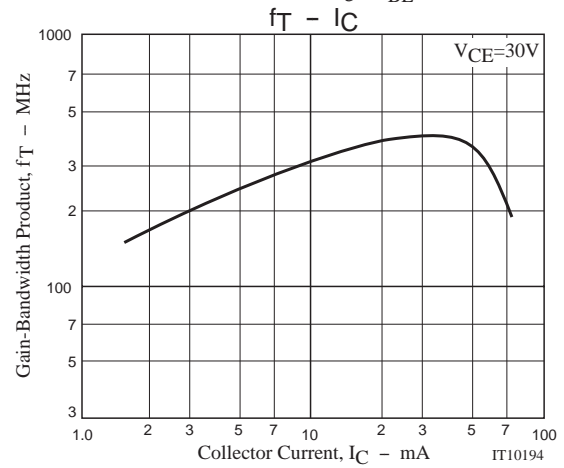
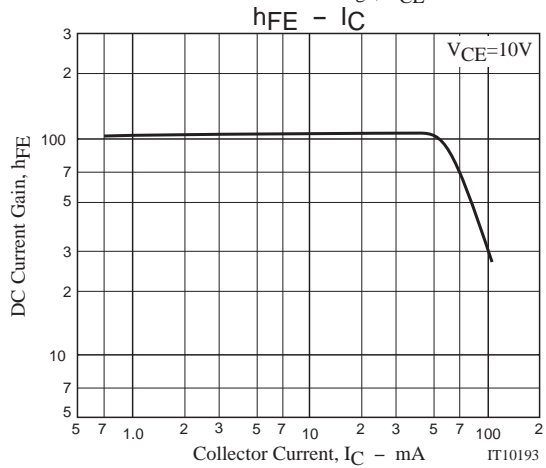
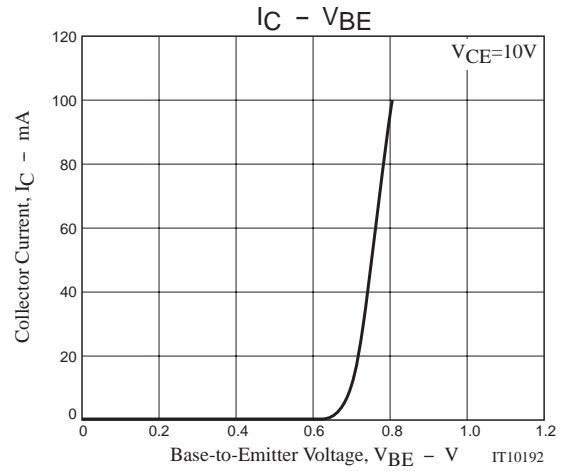
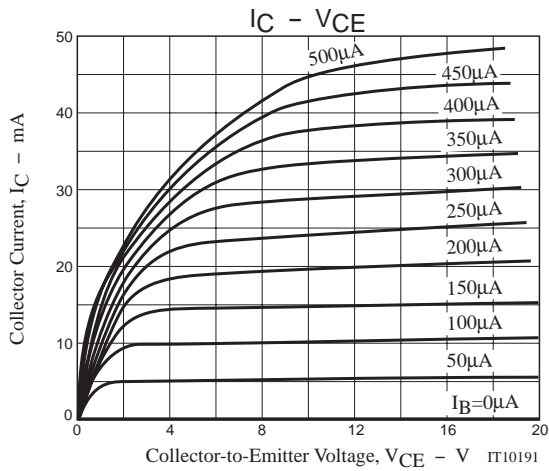
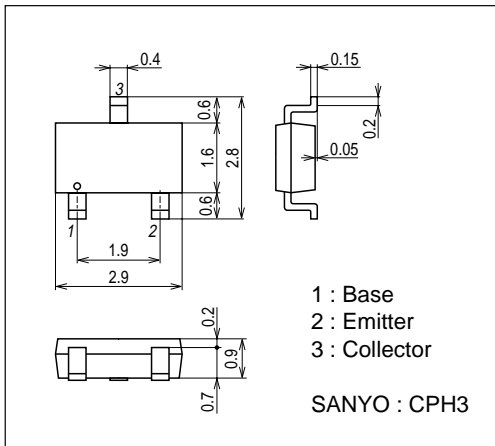
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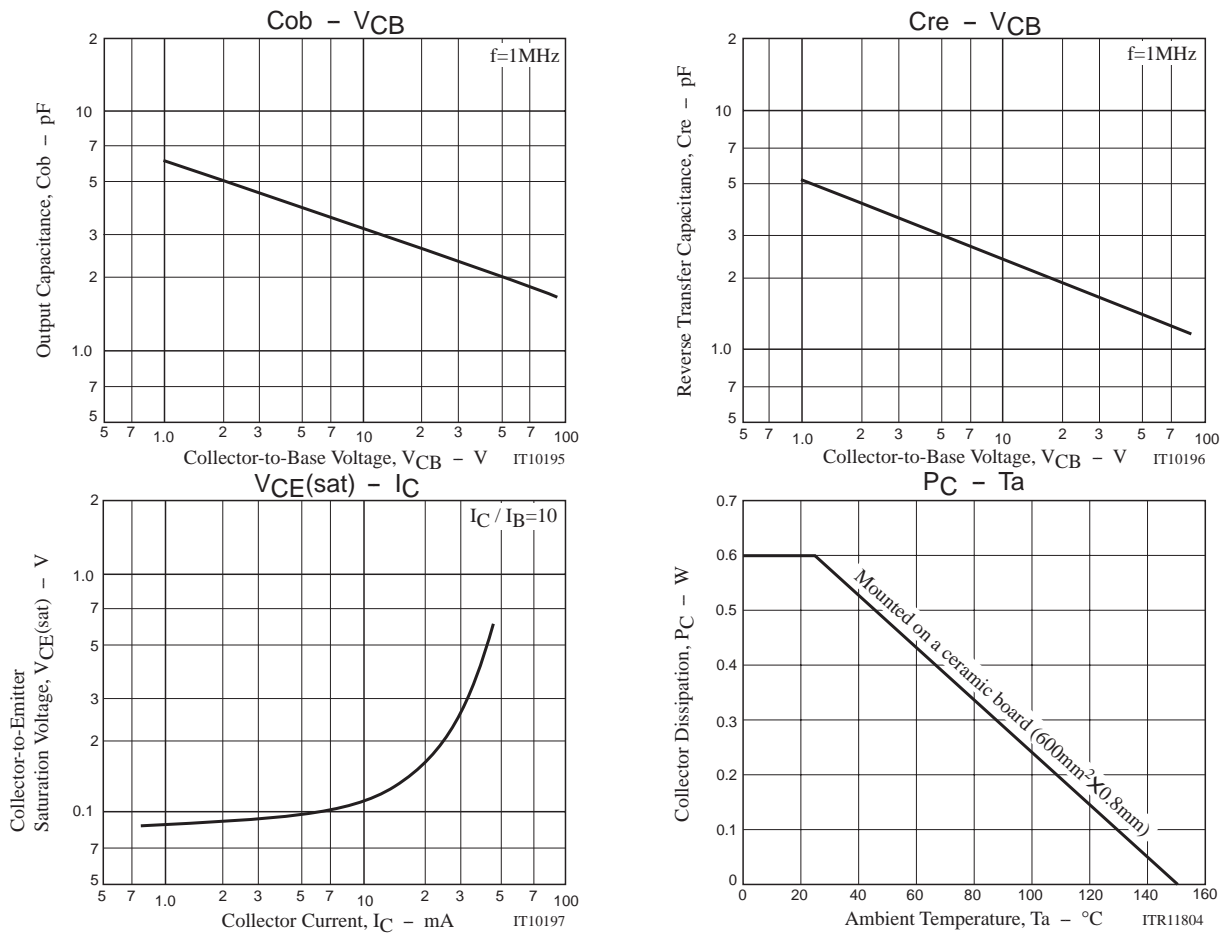
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## Package Dimensions

unit : mm  
7015-003



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