



CPH6020 — NPN Epitaxial Planar Silicon Transistor

High-Frequency Low-Noise Amplifier

Features

- Low-noise use : NF=1.2dB typ (f=1GHz)
- High cut-off frequency : $f_T=16\text{GHz}$ typ ($V_{CE}=5\text{V}$)
- High gain : $|S_{21e}|^2=13.5\text{dB}$ typ (f=1GHz)

Specifications

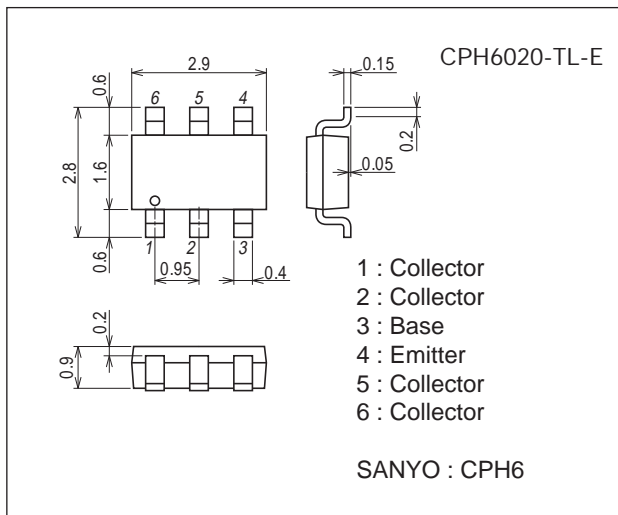
Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|---------------------------------------------------------------|-------------|------|
| Collector-to-Base Voltage | V_{CBO} | | 15 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | 8 | V |
| Emitter-to-Base Voltage | V_{EBO} | | 2 | V |
| Collector Current | I_C | | 150 | mA |
| Collector Dissipation | P_C | When mounted on ceramic substrate (250mm ² ×0.8mm) | 700 | mW |
| Junction Temperature | T_J | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

Package Dimensions

unit : mm (typ)

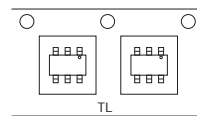
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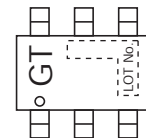
Product & Package Information

- Package : CPH6
- JEITA, JEDEC : SC-74, SOT-26, SOT-457
- Minimum Packing Quantity : 3,000 pcs./reel

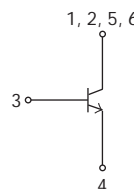
Packing Type: TL



Marking



Electrical Connection



CPH6020

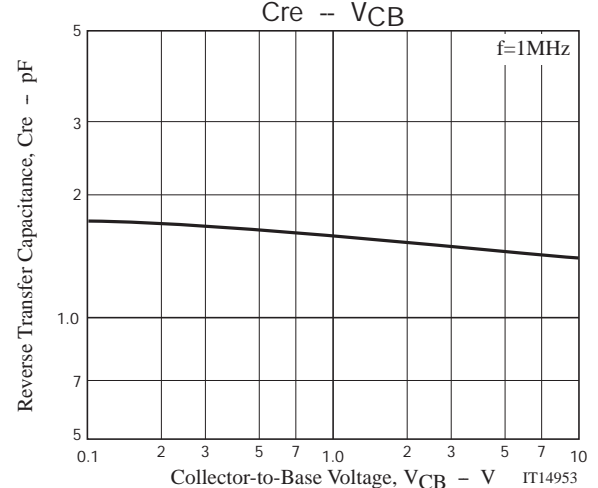
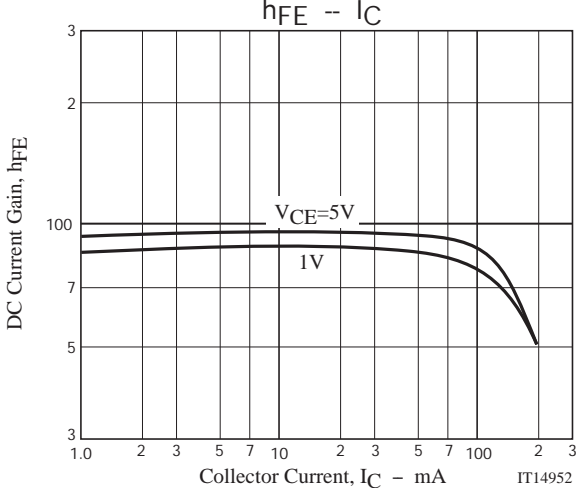
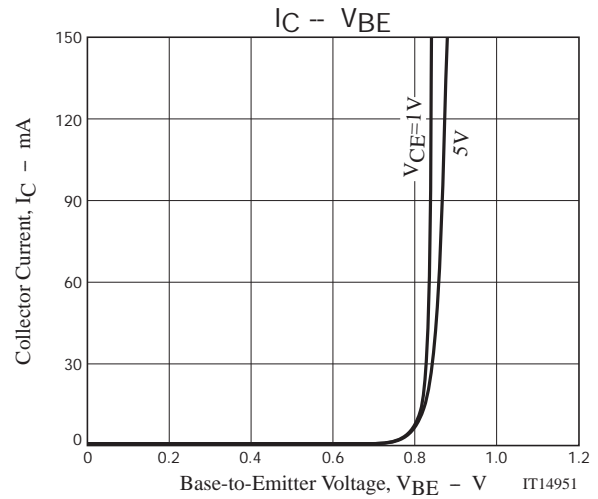
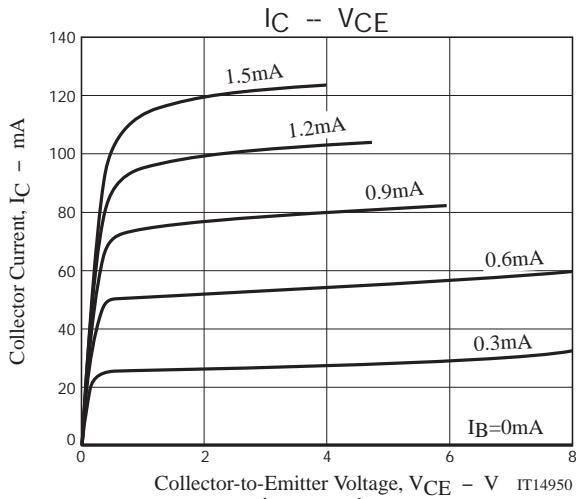
Electrical Characteristics at Ta=25°C

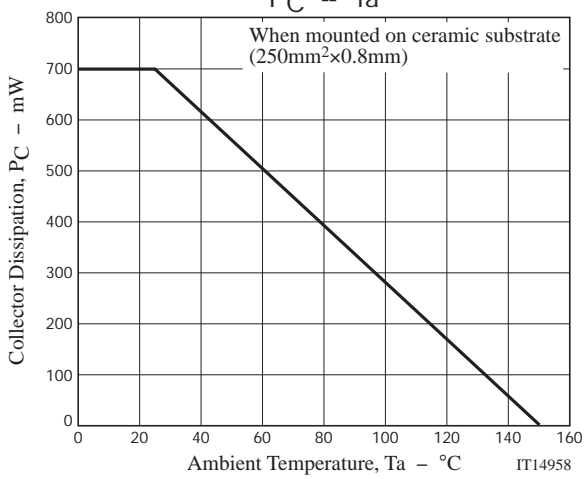
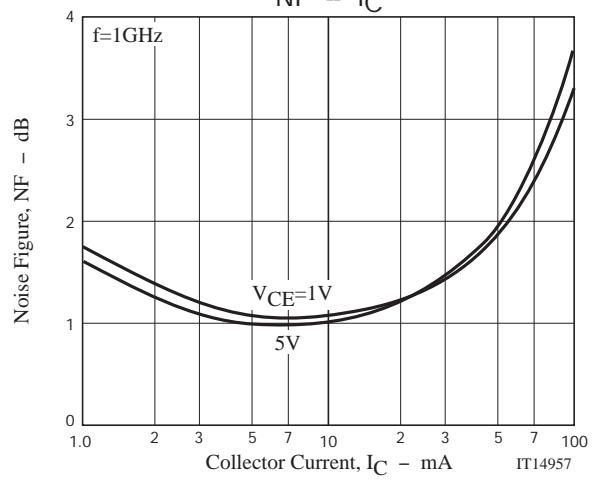
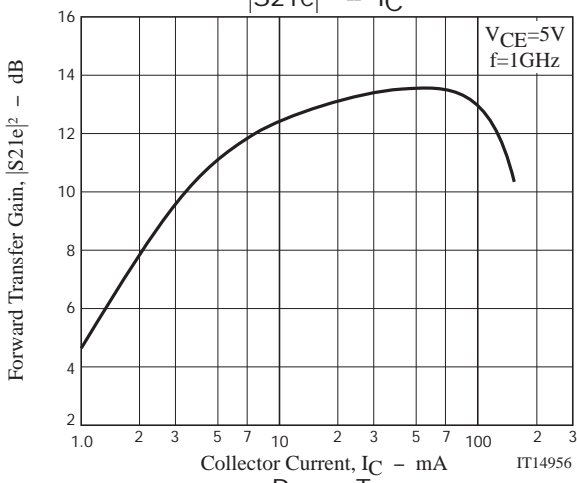
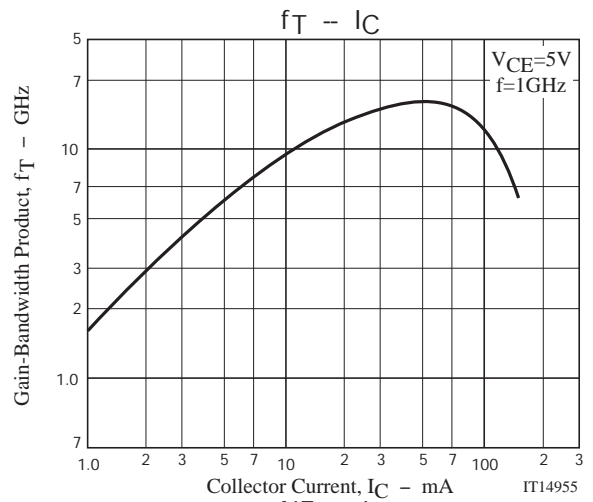
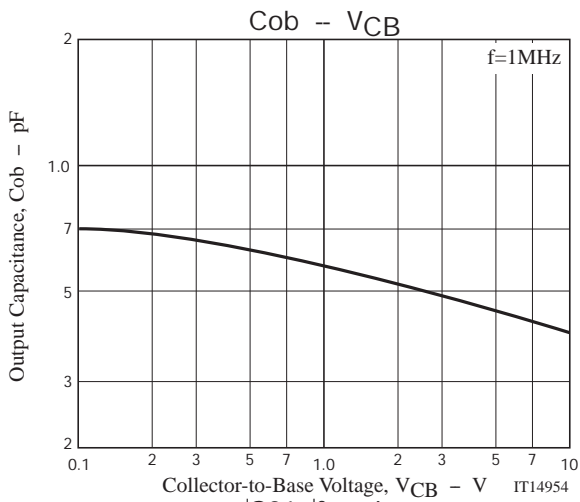
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|---------------------------------|---------------------------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Collector Cutoff Current | ICBO | V _{CB} =5V, I _E =0A | | | 1.0 | μA |
| Emitter Cutoff Current | IEBO | V _{EB} =1V, I _C =0A | | | 1.0 | μA |
| DC Current Gain | h _{FE} | V _{CE} =5V, I _C =50mA | 60 | | 150 | |
| Gain-Bandwidth Product | f _T | V _{CE} =5V, I _C =50mA | 13 | 16 | | GHz |
| Forward Transfer Gain | S _{21e} ² | V _{CE} =5V, I _C =50mA, f=1GHz | 10 | 13.5 | | dB |
| Noise Figure | NF | V _{CE} =1V, I _C =10mA, f=1GHz | | 1.2 | 1.8 | dB |

Note) Pay attention to handling since it is liable to be affected by static electricity due to the high-frequency process adopted.

Ordering Information

| Device | Package | Shipping | memo |
|--------------|---------|----------------|---------|
| CPH6020-TL-E | CPH6 | 3,000pcs./reel | Pb Free |





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