



CPH6020

RF Transistor

8V, 150mA, $f_T=16\text{GHz}$, NPN Single CPH6

ON Semiconductor®

<http://onsemi.com>

Features

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

Specifications

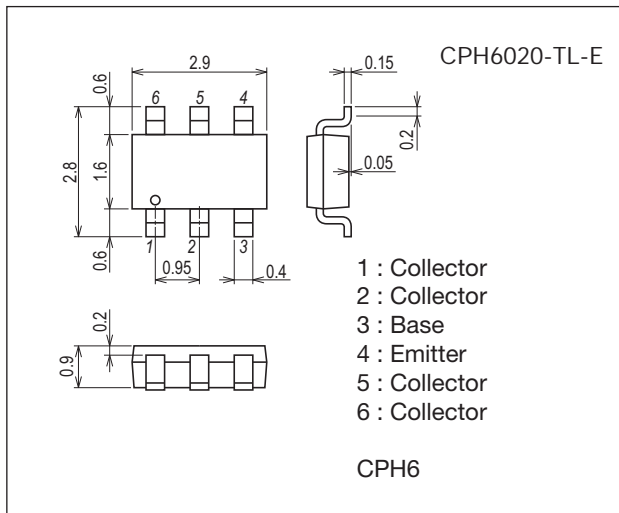
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

| 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 |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

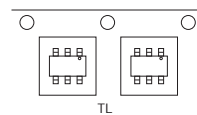
unit : mm (typ)
7018A-002



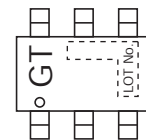
Product & Package Information

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

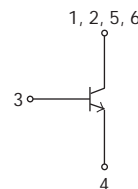
Packing Type: TL



Marking



Electrical Connection



CPH6020

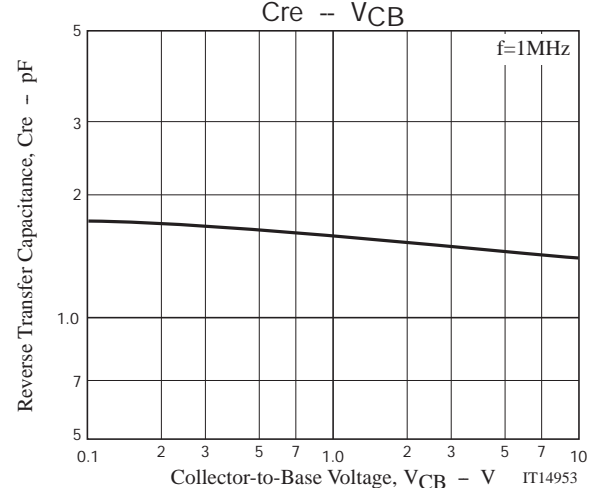
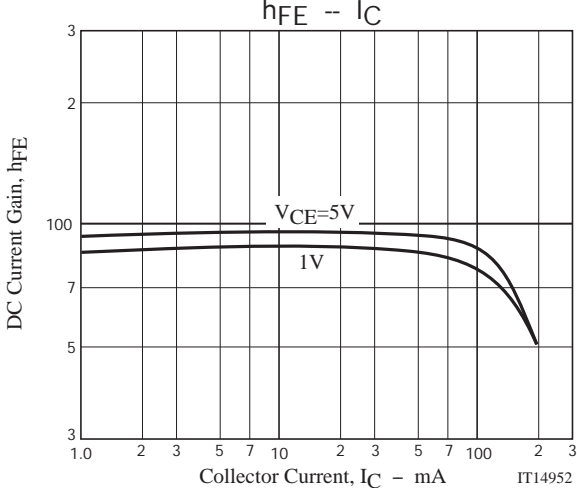
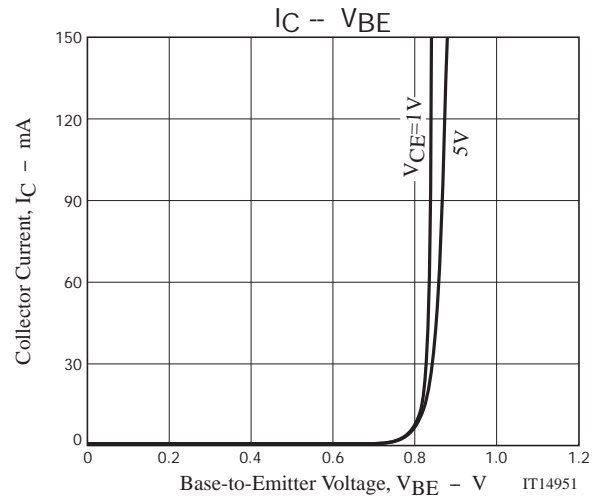
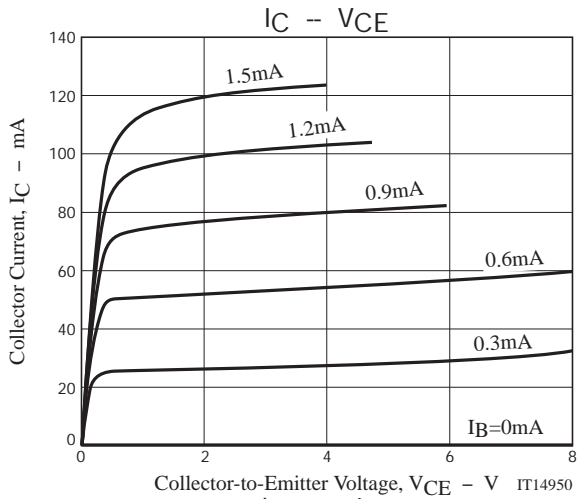
Electrical Characteristics at Ta=25°C

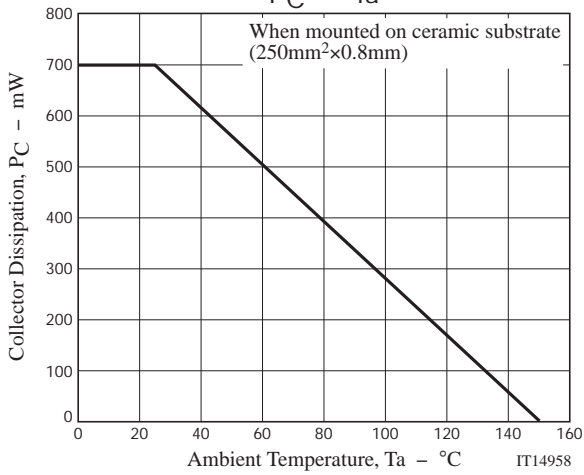
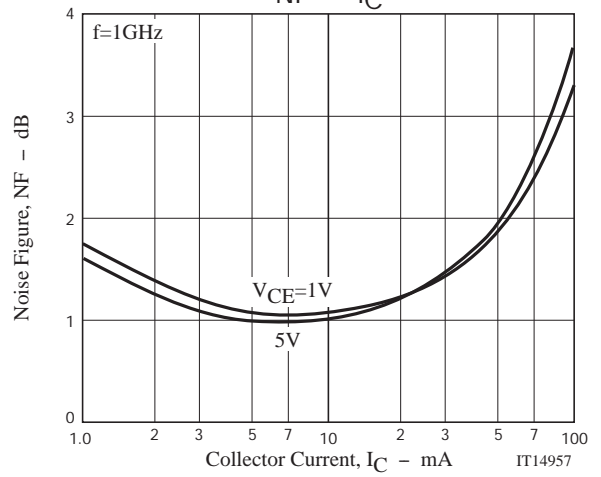
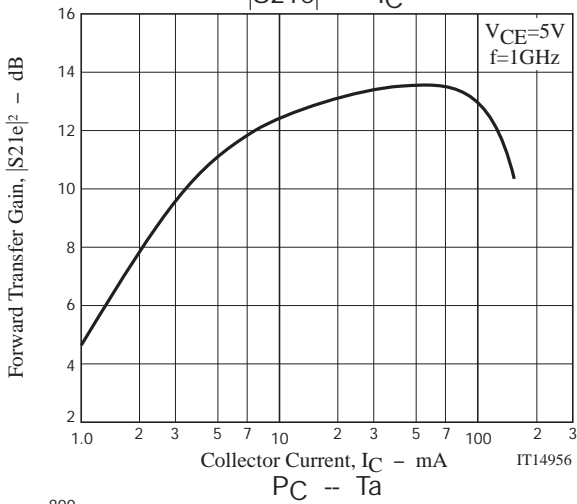
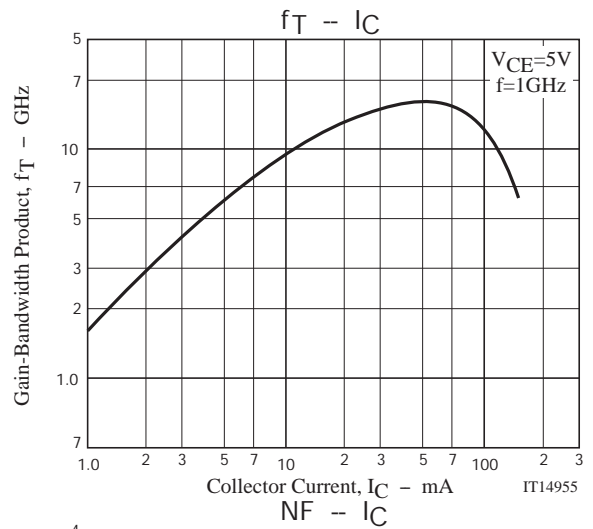
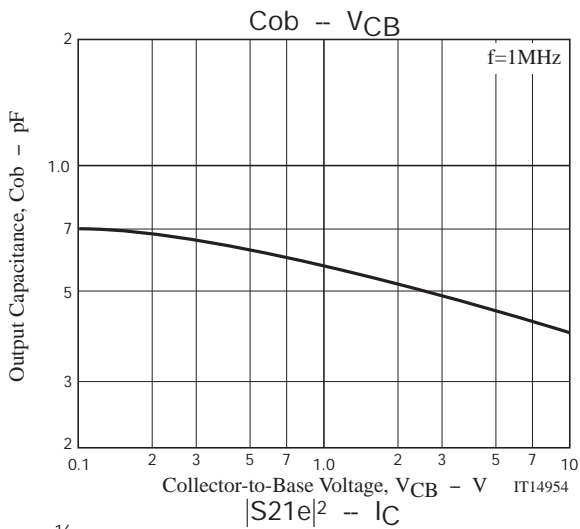
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|---------------------------------|---|---------|------|-----|------|
| | | | min | typ | max | |
| Collector Cutoff Current | ICBO | V _{CB} =5V, I _E =0A | | | 1.0 | μA |
| Emitter Cutoff Current | IEBO | V _{EB} =1V, 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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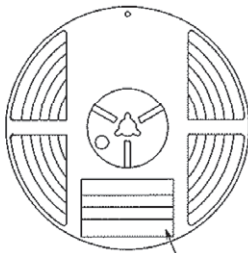
Embossed Taping Specification

CPH6020-TL-E

1. Packing Format

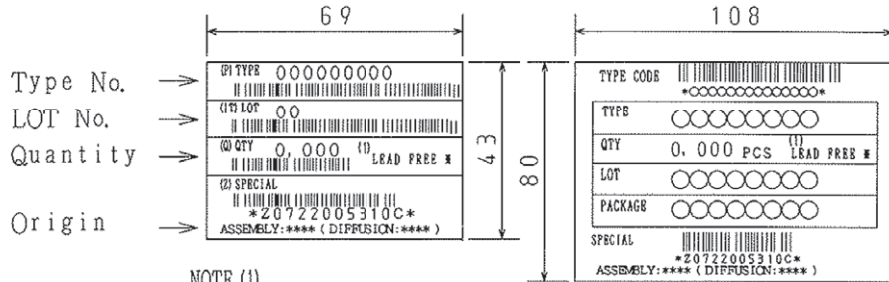
| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) | | | Packing format | |
|--------------|-------------------|---|-----------|-----------|---|--|
| | | Reel | Inner box | Outer box | Inner BOX (C-1) | Outer BOX (A-7) |
| CPH6 | CPH6 | 3,000 | 15,000 | 90,000 | 5 reels contained Dimensions:mm (external) 183×72×185 | 6 inner boxes contained Dimensions:mm (external) 440×195×210 |

Packing method



Reel label

Reel label, Inner box label (unit:mm) Outer box label
It is a label at the time of factory shipments. The form of a label may change in physical distribution process.



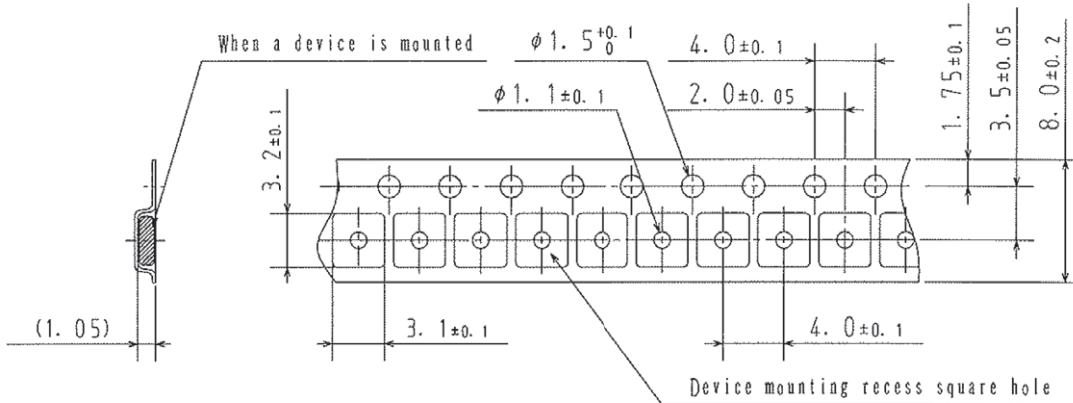
NOTE (1)

The LEAD FREE # description shows that the surface treatment of the terminal is lead free.

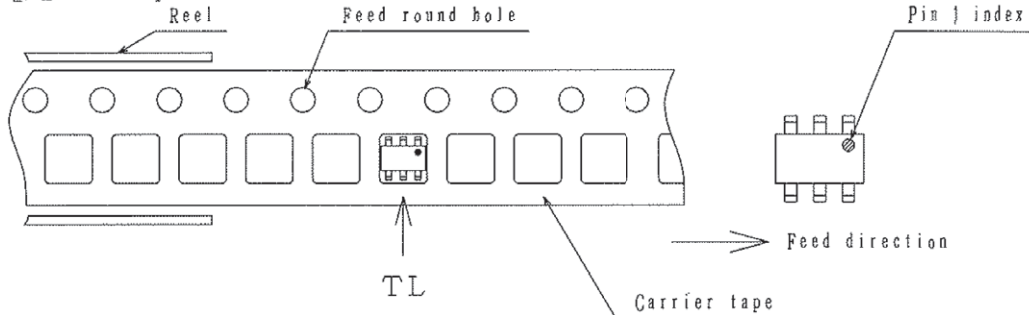
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction

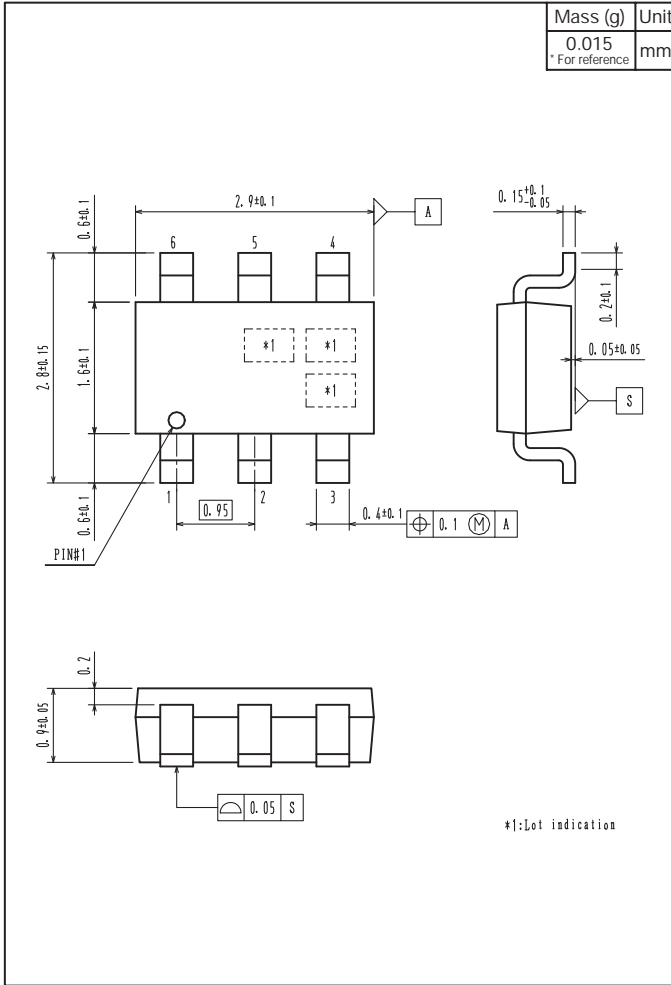


Those with pin 1 index on the feed hole side.....TL

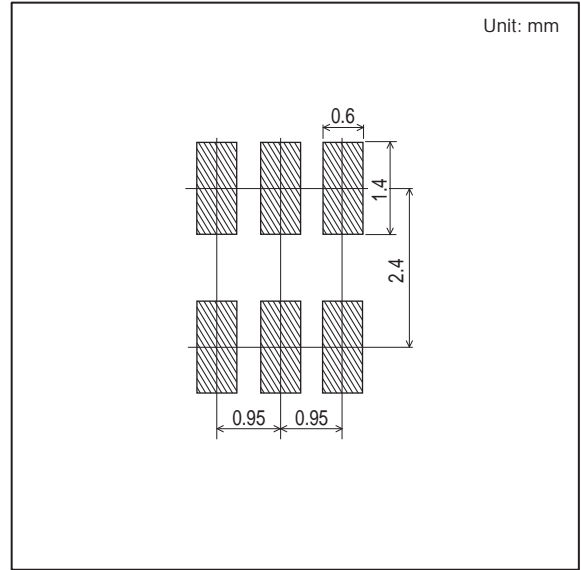
CPH6020

Outline Drawing

CPH6020-TL-E



Land Pattern Example



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