



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

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

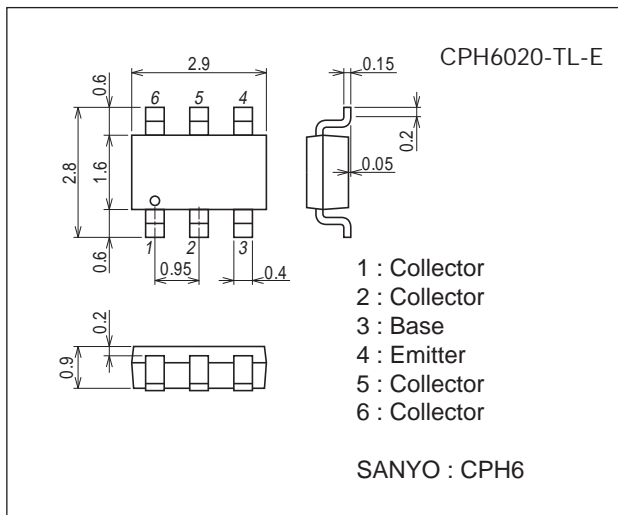
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

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

Package Dimensions

unit : mm (typ)

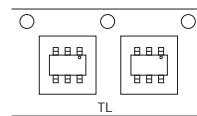
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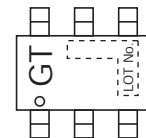
Product & Package Information

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

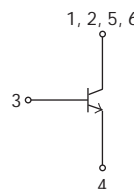
Packing Type: TL



Marking



Electrical Connection



CPH6020

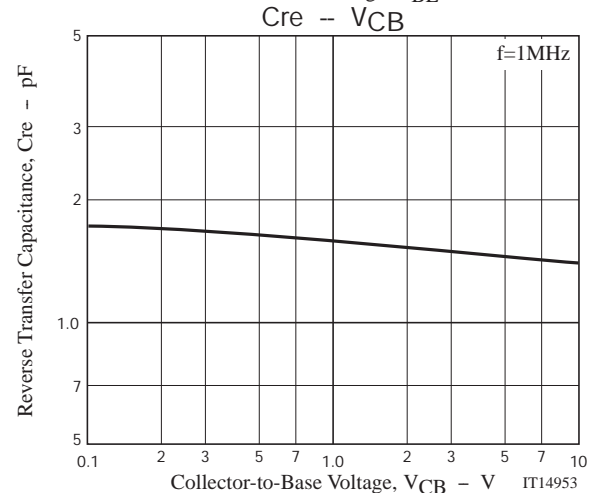
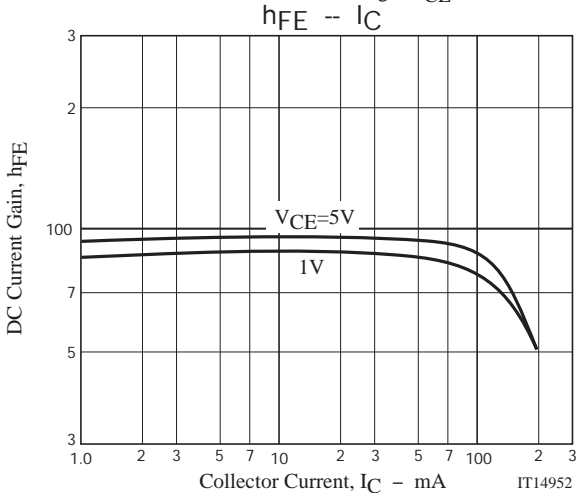
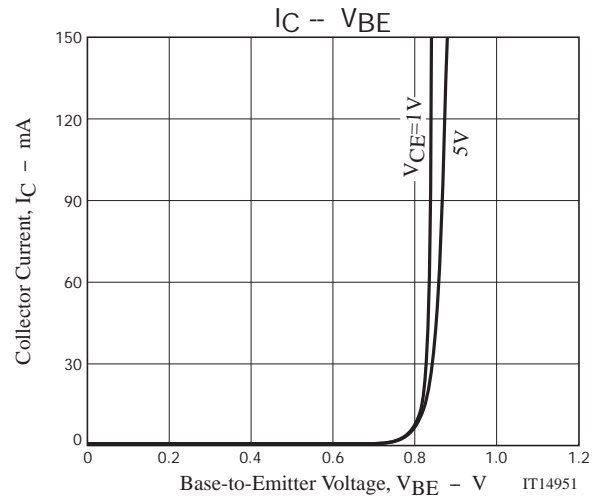
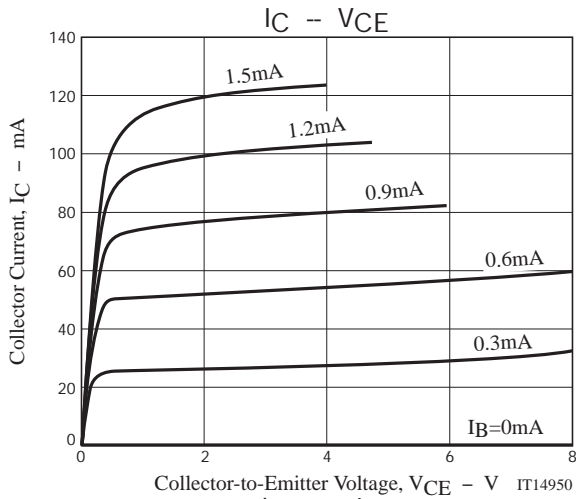
Electrical Characteristics at Ta=25°C

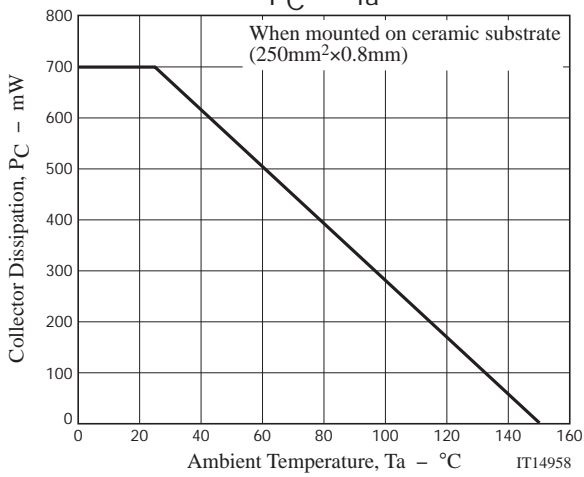
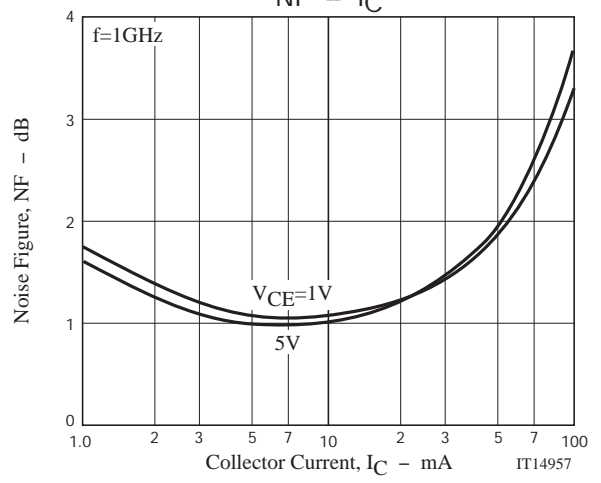
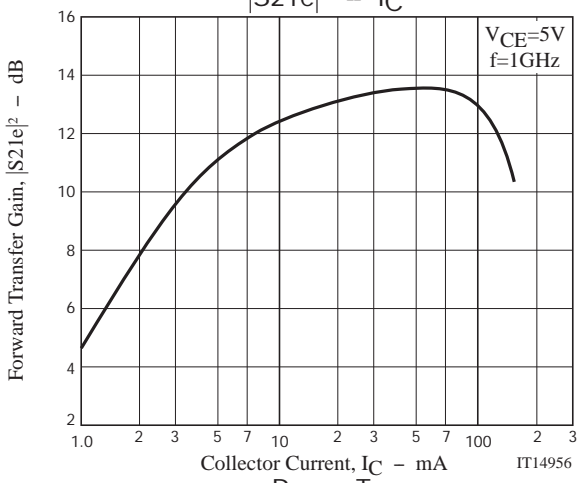
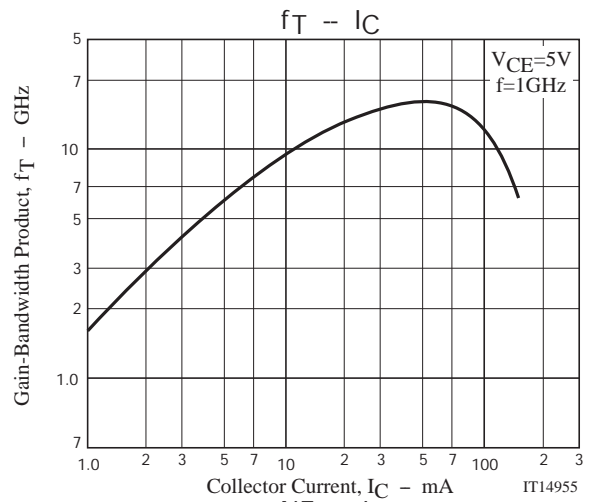
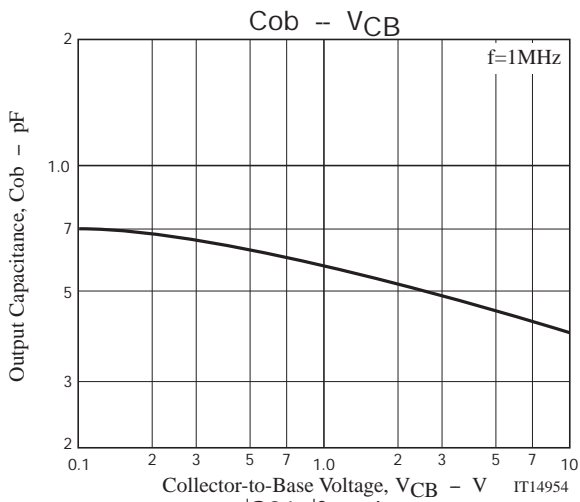
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =5V, I _E =0A			1.0	μA
Emitter Cutoff Current	IEBO	V _{EB} =1V, I _C =0A			1.0	μA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =50mA	60		150	
Gain-Bandwidth Product	f _T	V _{CE} =5V, I _C =50mA	13	16		GHz
Forward 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





CPH6020

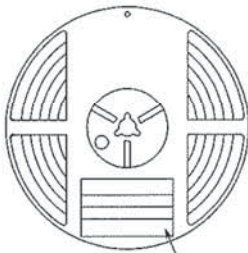
Embossed Taping Specification

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

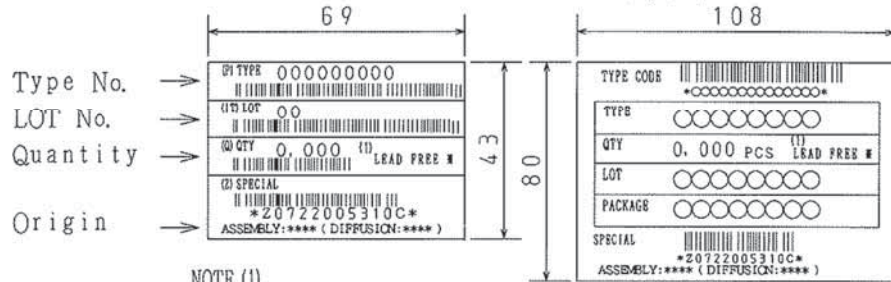


Reel label

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.



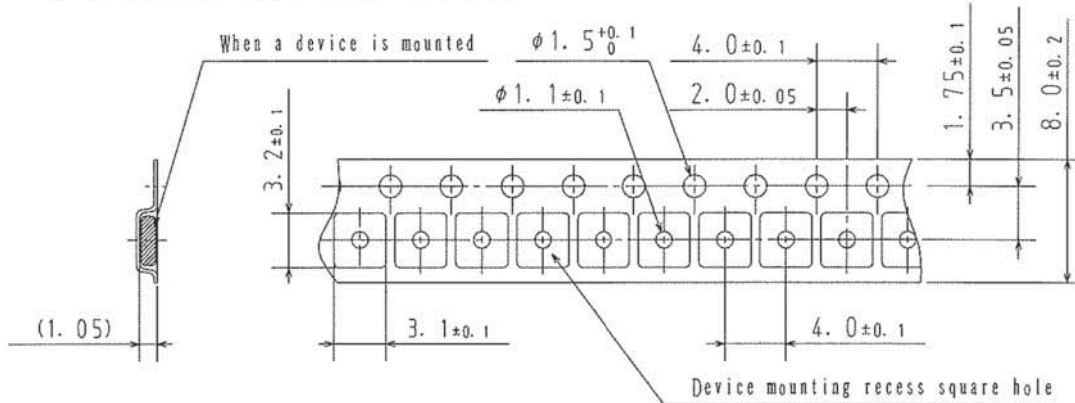
NOTE (1)

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

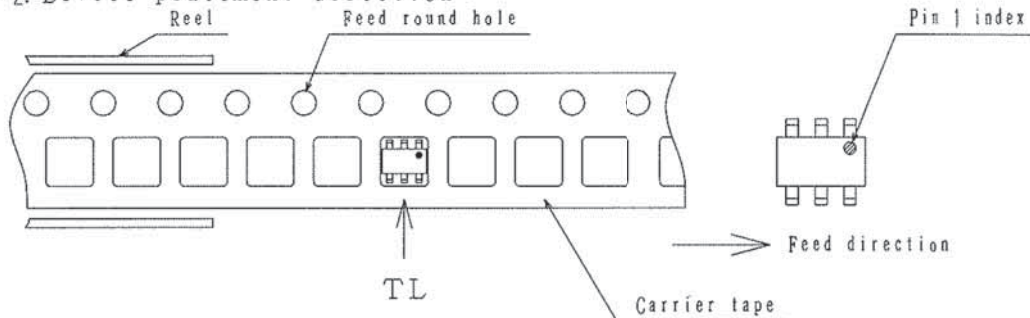
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

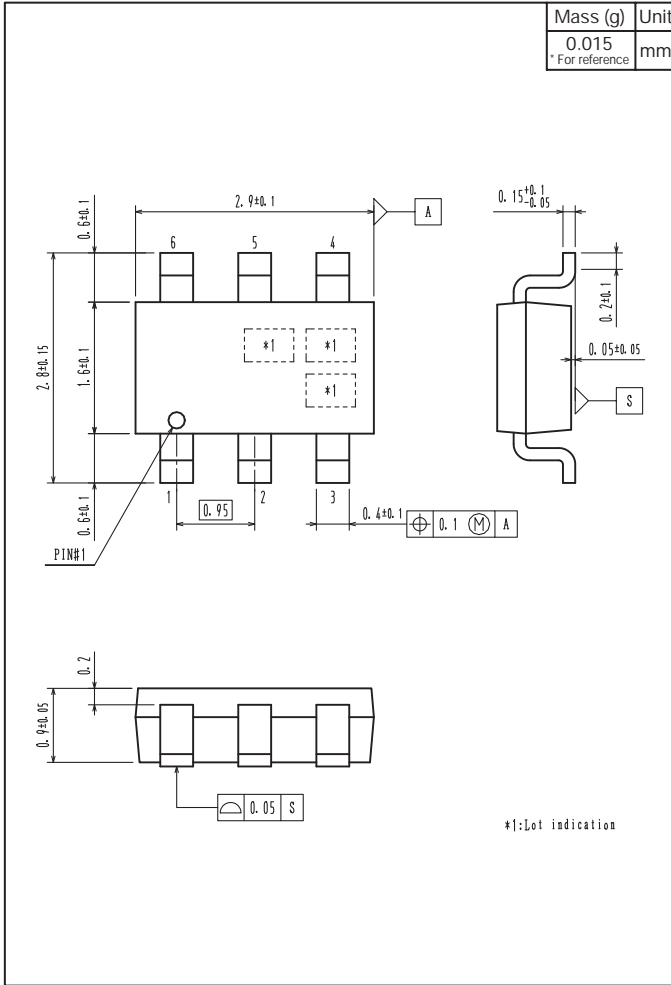


Those with pin 1 index on the feed hole side.....TL

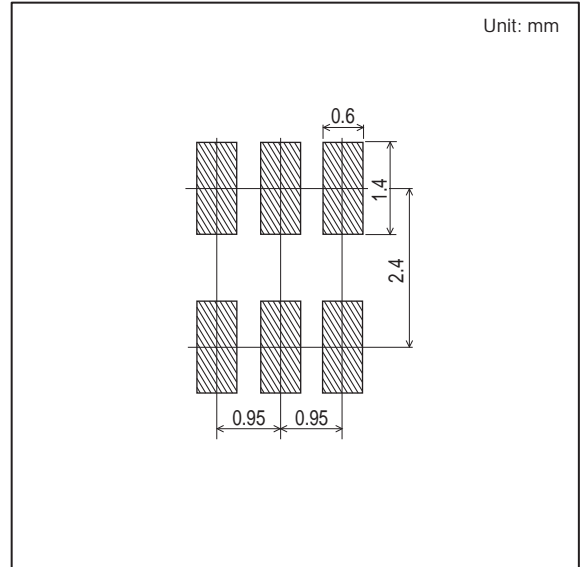
CPH6020

Outline Drawing

CPH6020-TL-E



Land Pattern Example



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