



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

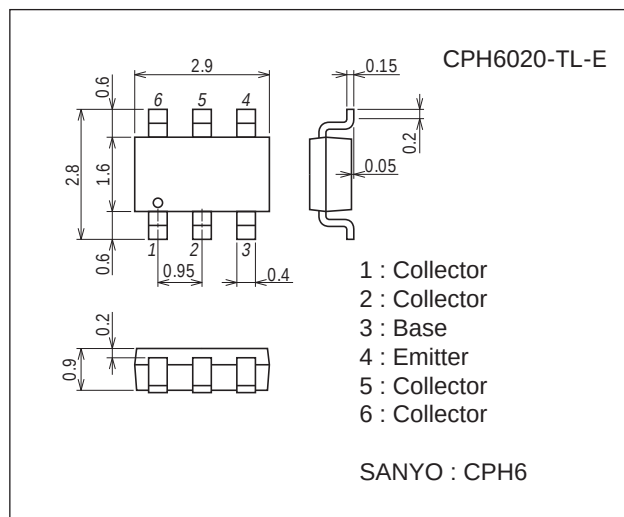
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

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)

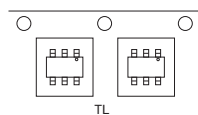
7018A-002



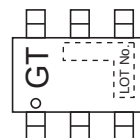
Product & Package Information

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

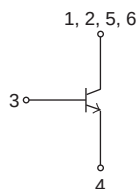
Packing Type: TL



Marking



Electrical Connection



CPH6020

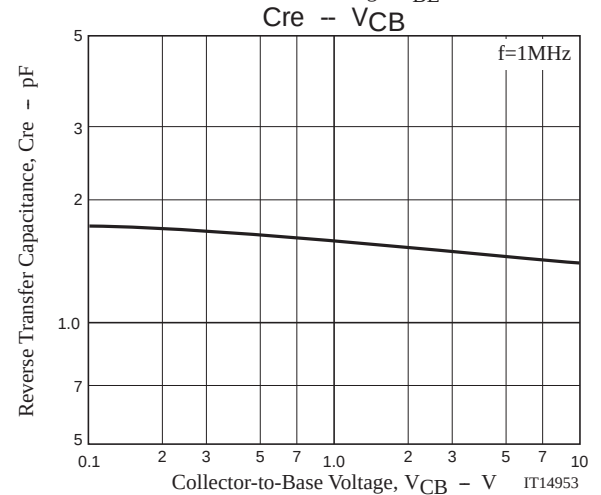
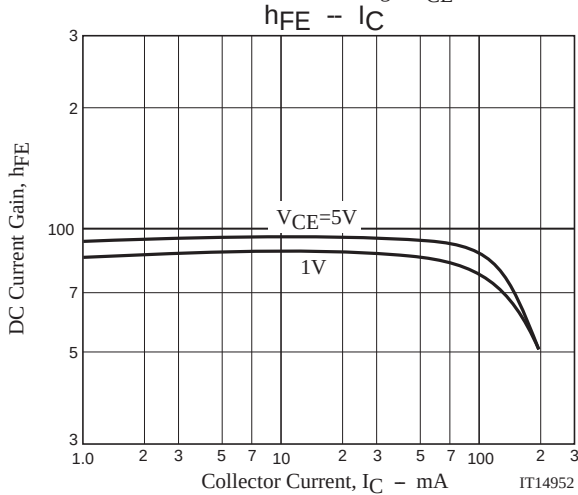
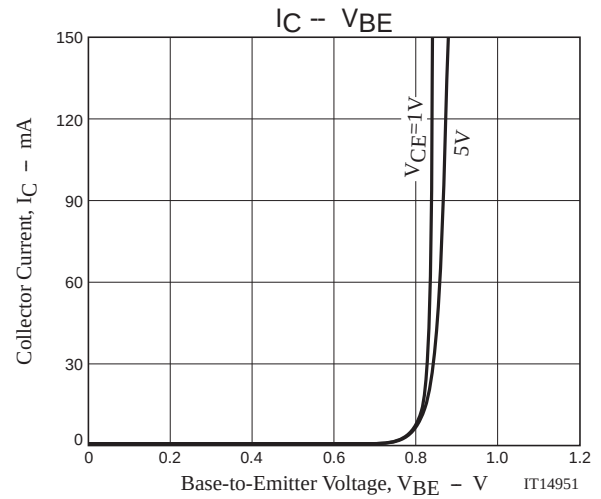
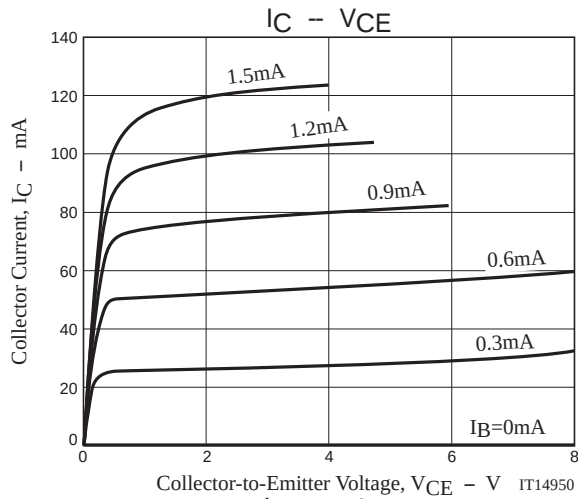
Electrical Characteristics at Ta=25°C

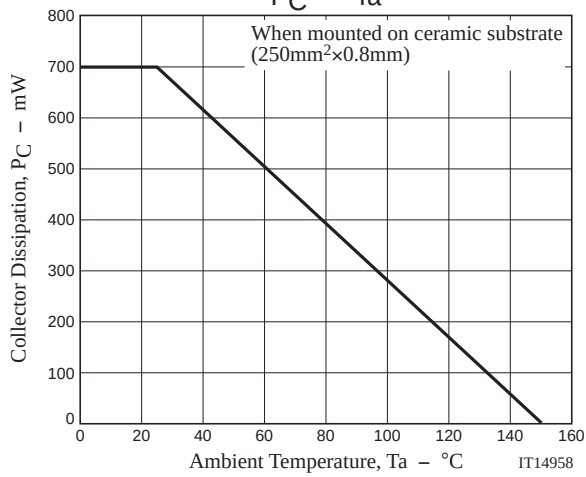
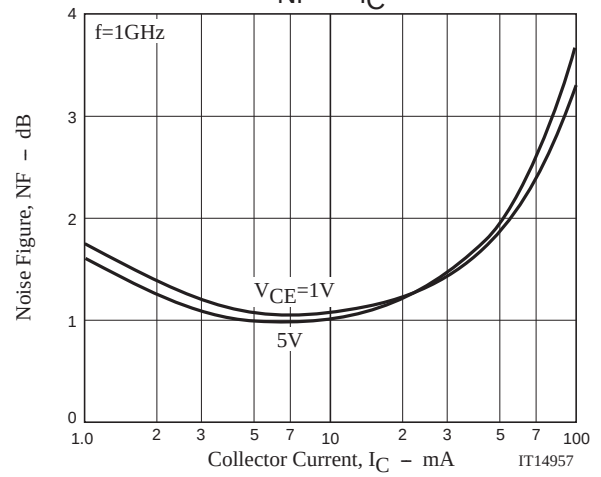
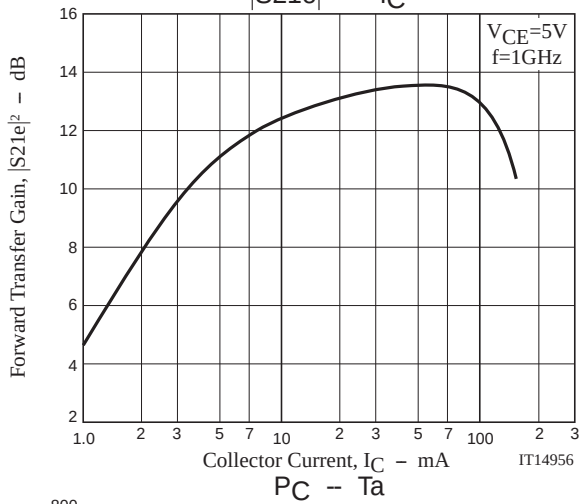
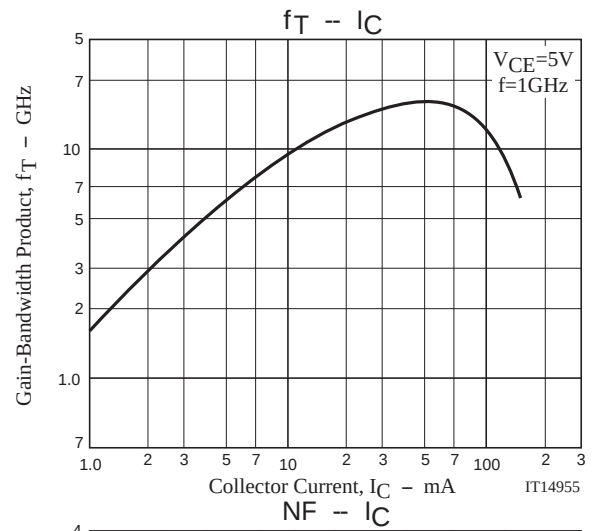
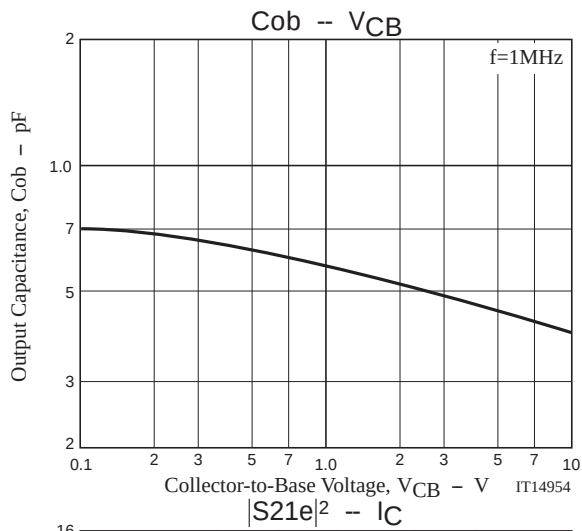
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=5V, I_E=0A$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=1V, I_C=0A$			1.0	μA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=50mA$	60		150	
Gain-Bandwidth Product	f_T	$V_{CE}=5V, I_C=50mA$	13	16		GHz
Forward 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

Notre) 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





Embossed Taping Specification

CPH6020-TL-E

1. Packing Format

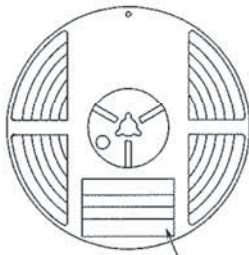
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH6	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin

TYPE	000000000
LOT	00
QTY	0,000 (1) LEAD FREE #
SPECIAL	*20722005310C*
ASSEMBLY	**** (DIFFUSION:****)

NOTE (1)

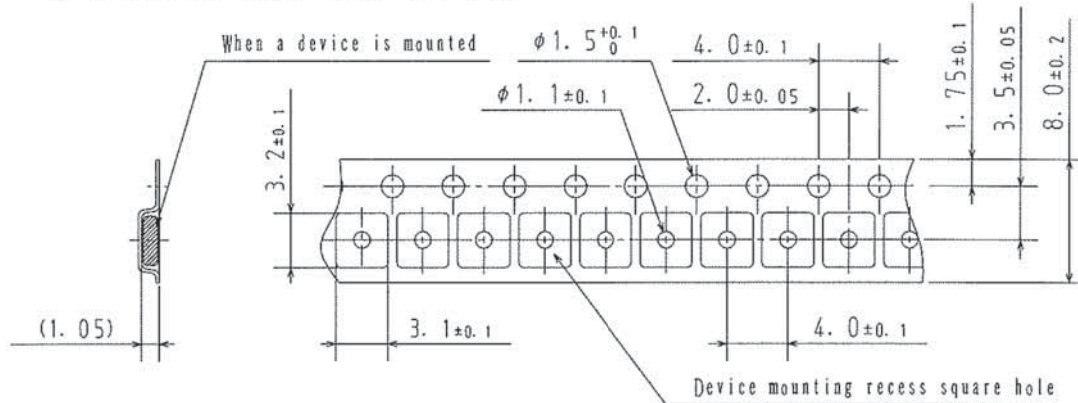
The LEAD FREE # description shows that the surface treatment of the terminal is lead free.

TYPE CODE	*****0*****
TYPE	*****
QTY	0,000 PCS (1) LEAD FREE #
LOT	*****
PACKAGE	*****
SPECIAL	*20722005310C*
ASSEMBLY	**** (DIFFUSION:****)

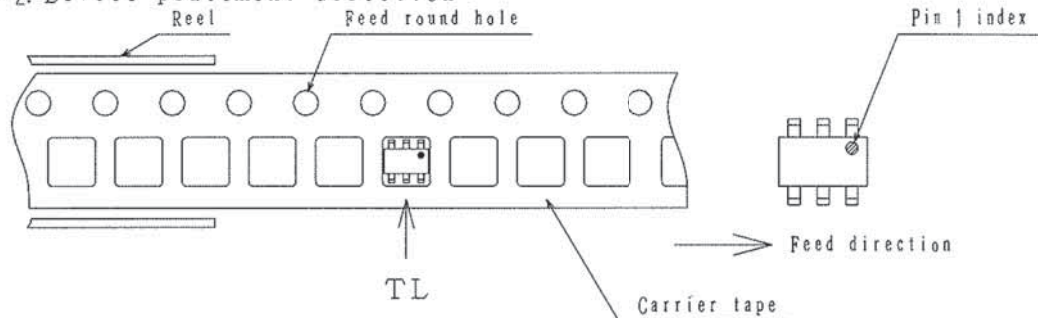
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

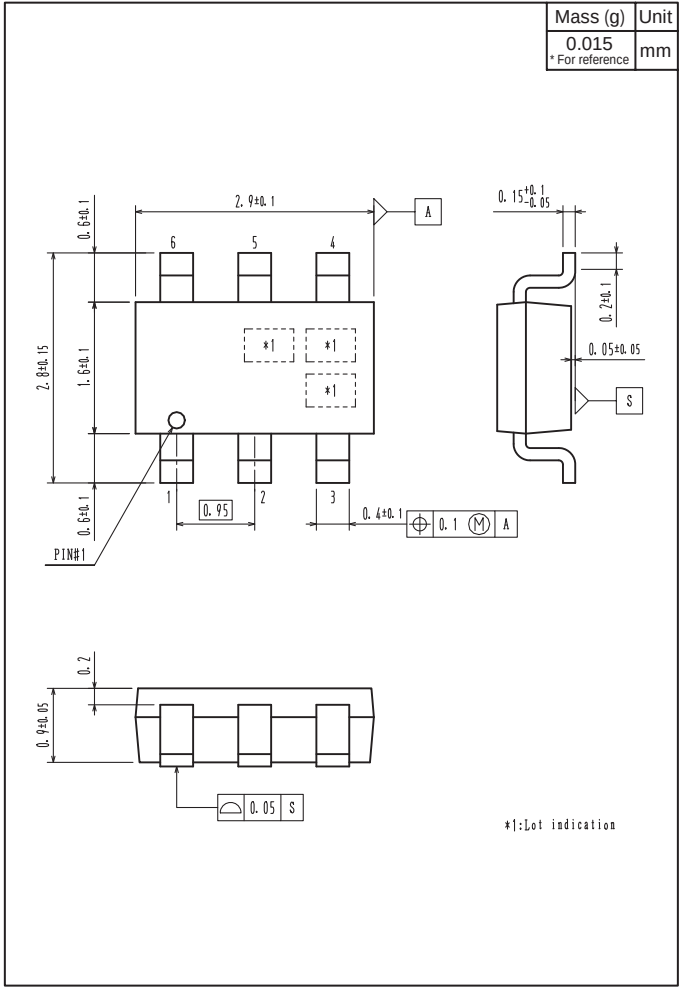


2-2. Device placement direction

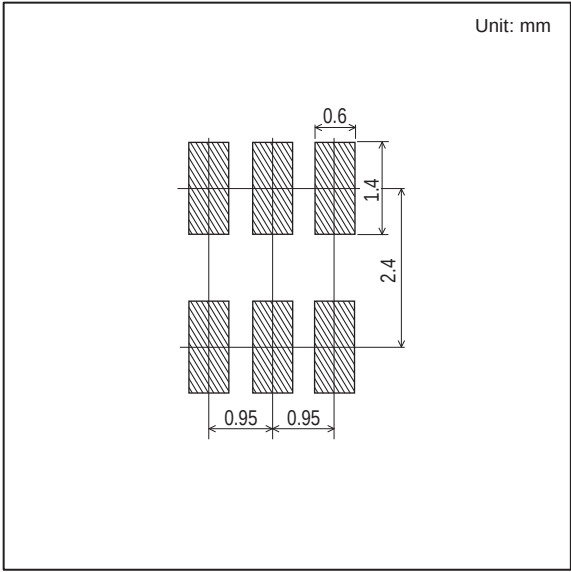


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
CPH6020-TL-E



Land Pattern Example



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