



MCH6001 — NPN Epitaxial Planar Silicon Composite Transistor

High Frequency Low-Noise Amplifier

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 : $|S_{21e}|^2=16\text{dB}$ typ ($f=1\text{GHz}$)
- Composite type with 2 RF transistor MCH4020 in one package facilitating high-density mounting

Specifications

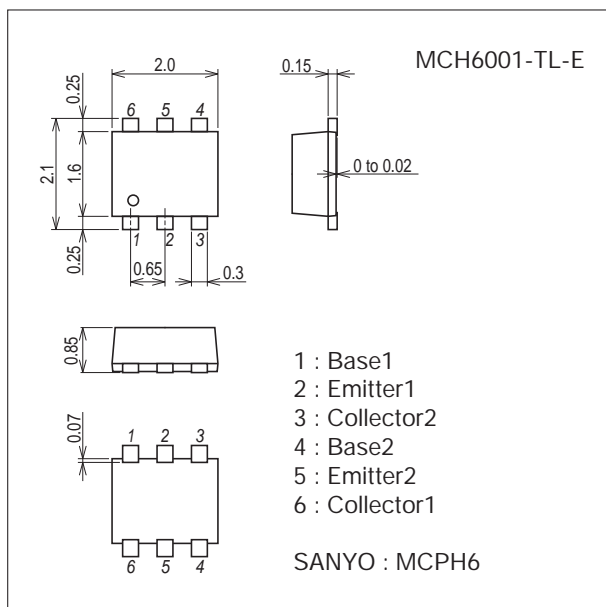
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		15	V
Collector-to-Emitter Voltage	V_{CE0}		8	V
Emitter-to-Base Voltage	V_{EBO}		2	V
Collector Current	I_C		150	mA
Collector Dissipation	P_C	When mounted on glass epoxy substrate 1unit	400	mW
Total Dissipation	P_T	When mounted on glass epoxy substrate	600	mW
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Package Dimensions

unit : mm (typ)

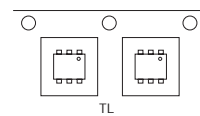
7022A-019



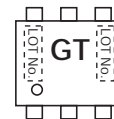
Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

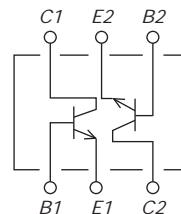
Packing Type : TL



Marking



Electrical Connection



MCH6001

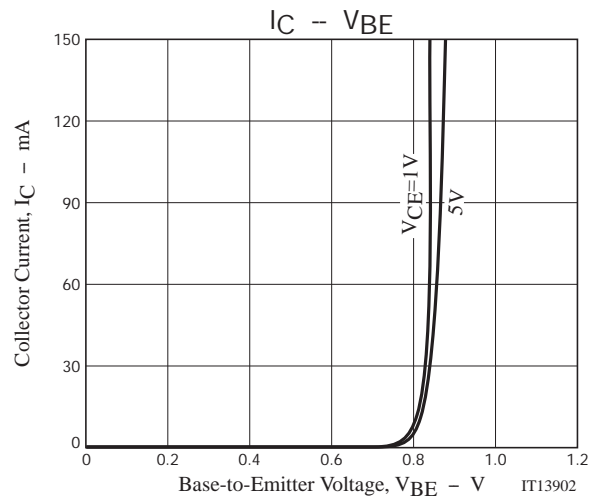
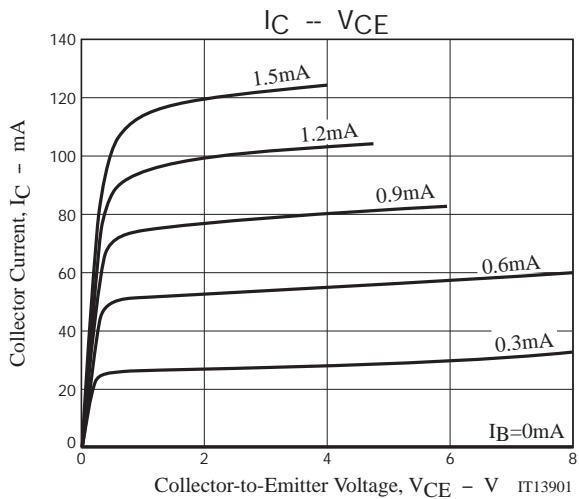
Electrical Characteristics at $T_a=25^\circ\text{C}$

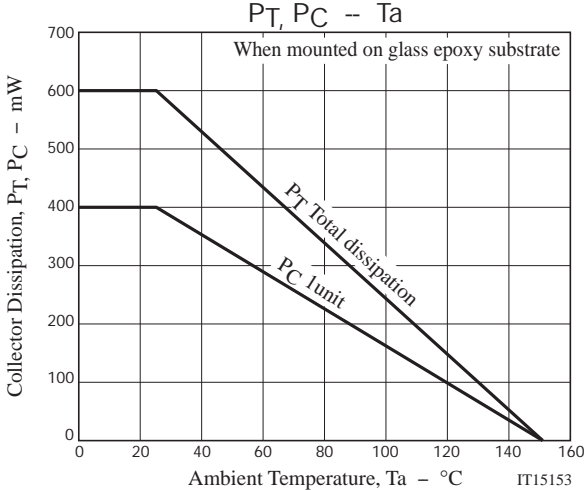
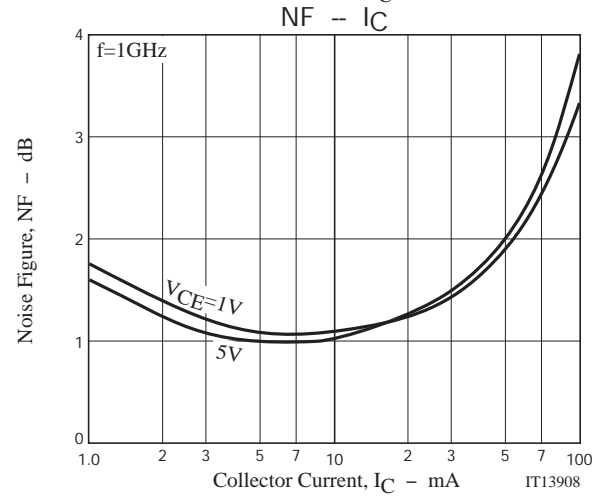
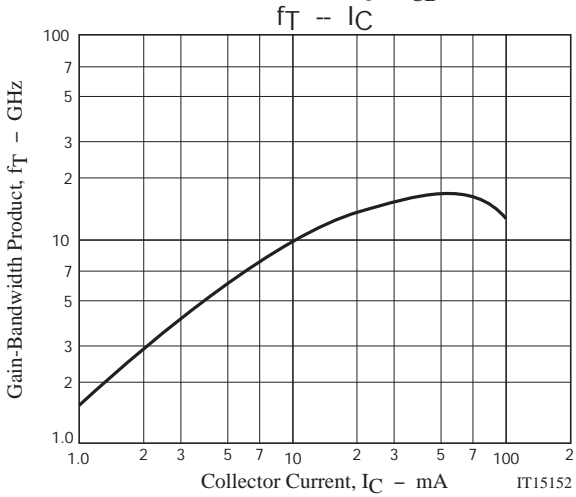
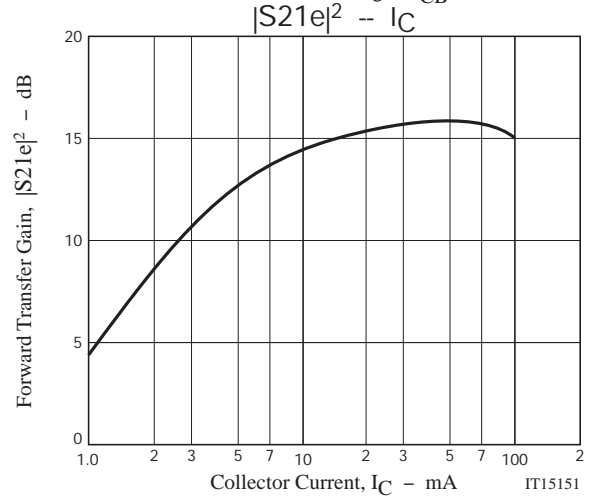
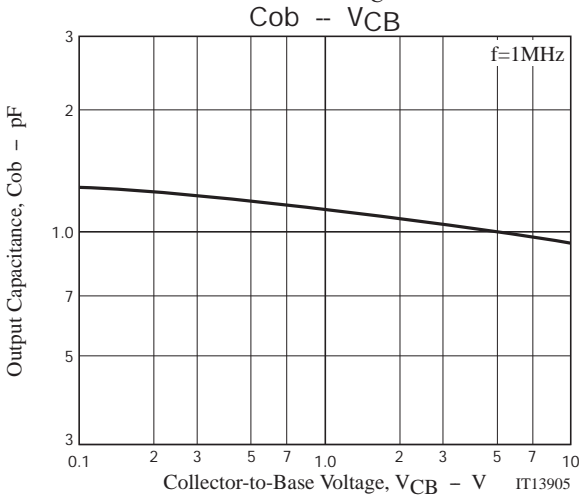
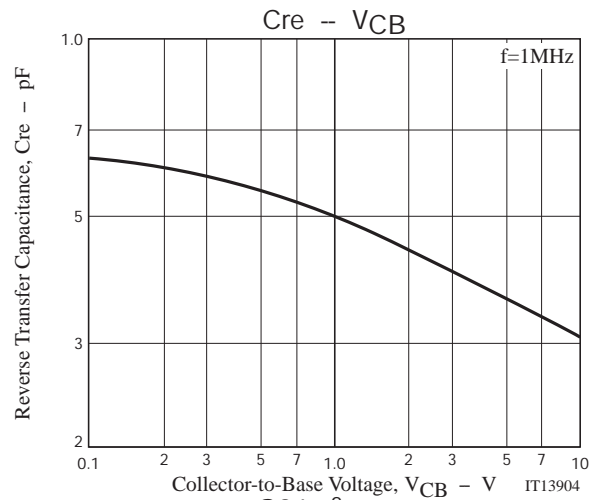
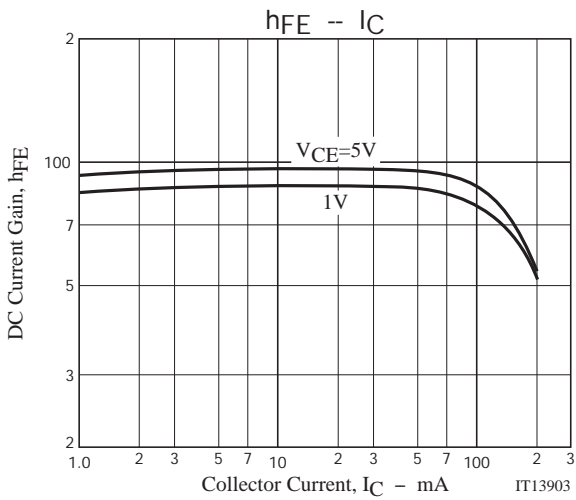
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=5\text{V}, I_E=0\text{A}$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=1\text{V}, I_C=0\text{A}$			1.0	μA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=50\text{mA}$	60		150	
Gain-Bandwidth Product	f_T	$V_{CE}=5\text{V}, I_C=50\text{mA}$	13	16		GHz
Forward Transfer Gain	$ S_{21e} ^2$	$V_{CE}=5\text{V}, I_C=50\text{mA}, f=1\text{GHz}$		16		dB
Noise Figure	NF	$V_{CE}=1\text{V}, I_C=10\text{mA}, f=1\text{GHz}$		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
MCH6001-TL-E	MCPH6	3,000pcs./reel	Pb Free





MCH6001

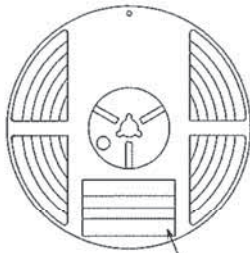
Embossed Taping Specification

MCH6001-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)
MCPH6	MCP4	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

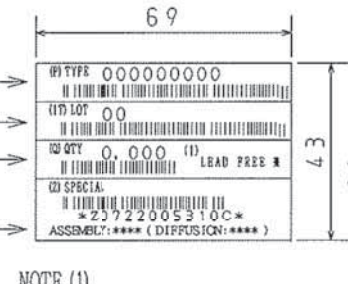
Packing method



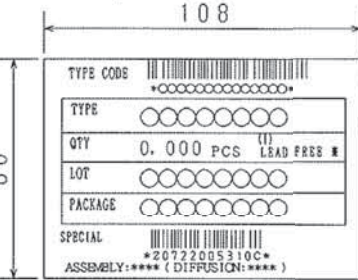
Reel label

Type No.
LOT No.
Quantity
Origin

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.)



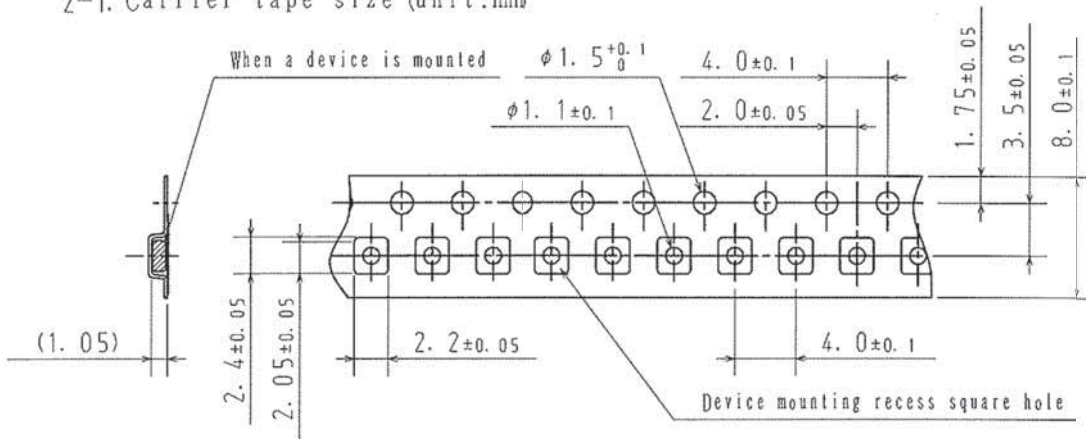
NOTE (1)

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

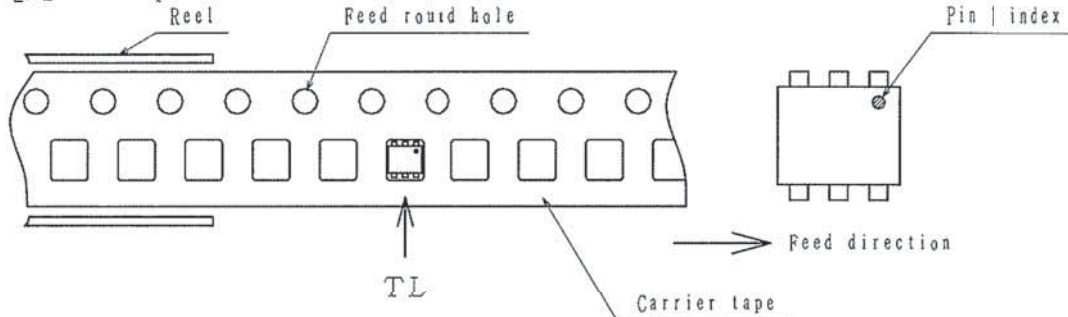
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



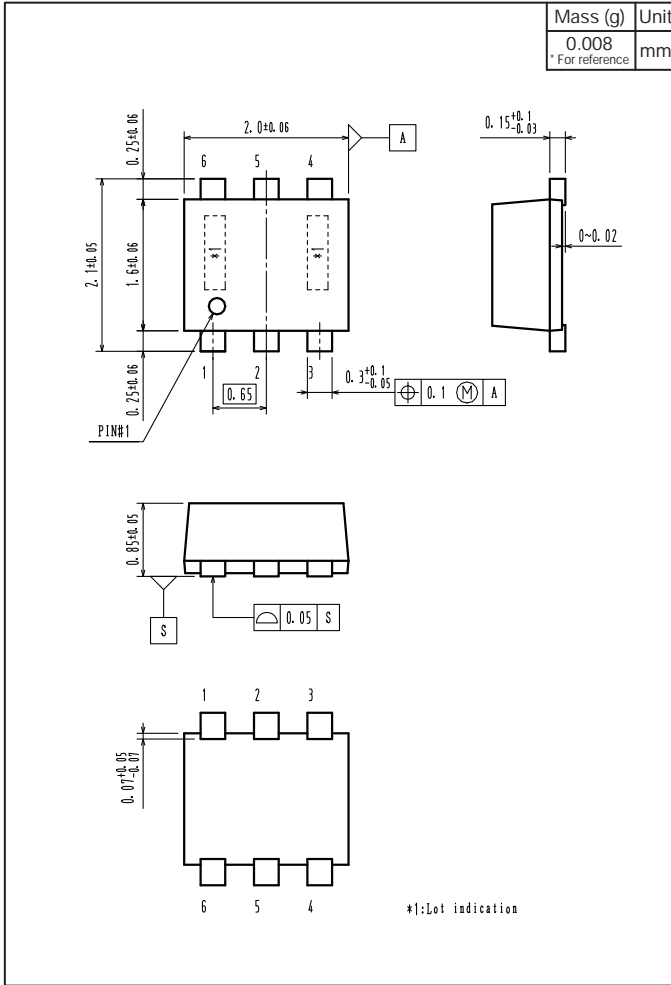
2-2. Device placement direction



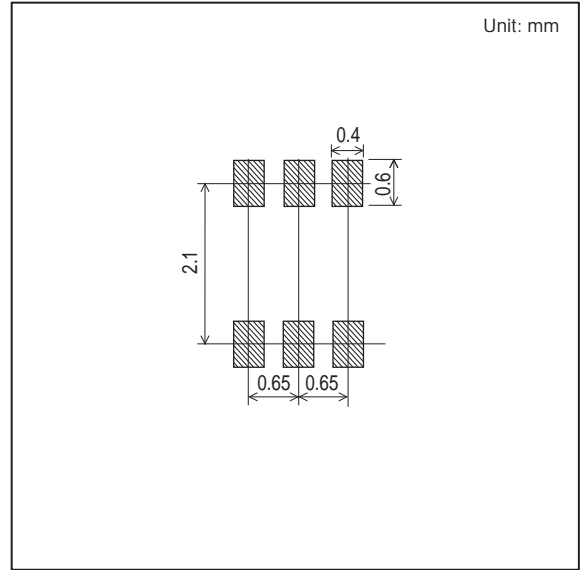
Those with pin | index on the feed hole side.....TL

MCH6001

Outline Drawing MCH6001-TL-E



Land Pattern Example



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