



MCH6001

RF Transistor

8V, 150mA, $f_T=16\text{GHz}$ NPN Dual MCPH6

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

Specifications

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

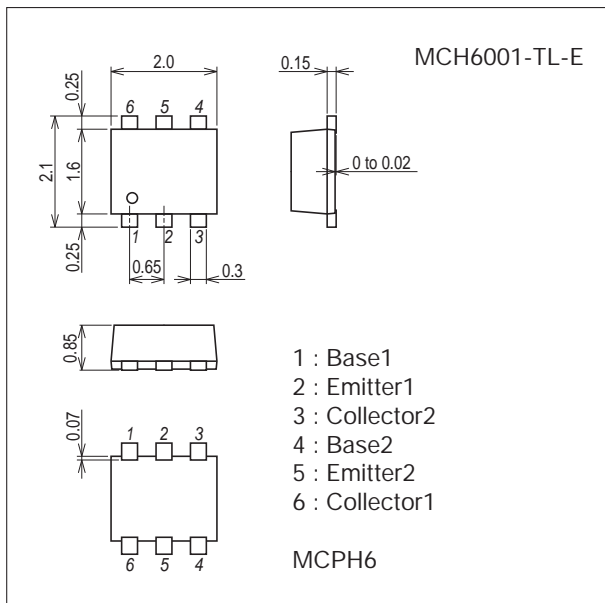
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		15	V
Collector-to-Emitter Voltage	V_{CEO}		8	V
Emitter-to-Base Voltage	V_{EBO}		2	V
Collector Current	I_C		150	mA
Collector Dissipation	P_C	When mounted on glass epoxy substrate 1unit	400	mW
Total Dissipation	P_T	When mounted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

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)

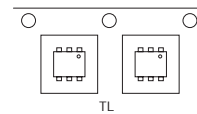
7022A-019



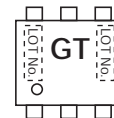
Product & Package Information

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

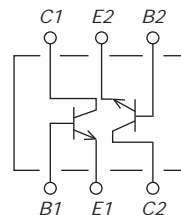
Packing Type : TL



Marking



Electrical Connection



MCH6001

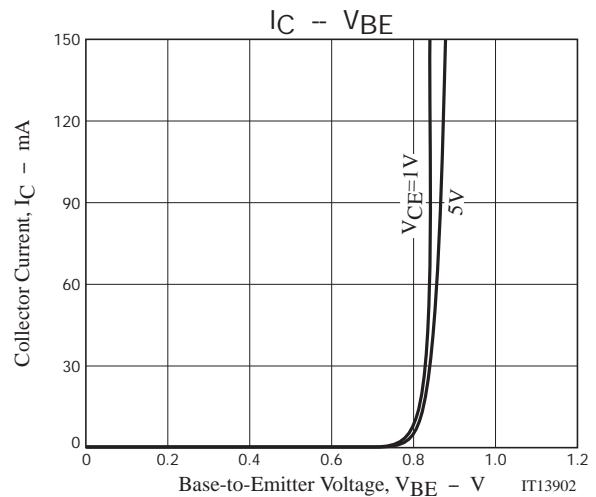
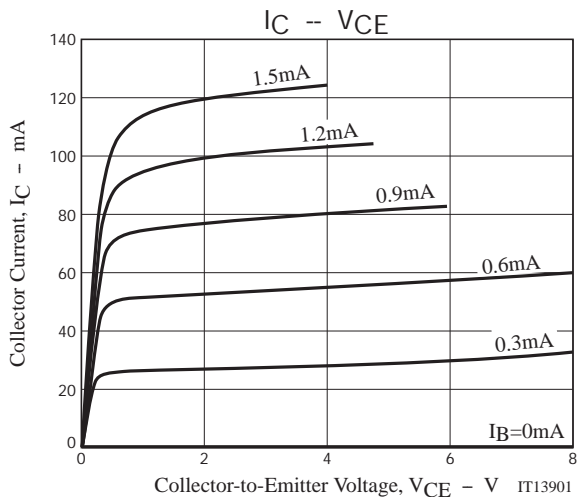
Electrical Characteristics at $T_a=25^\circ\text{C}$

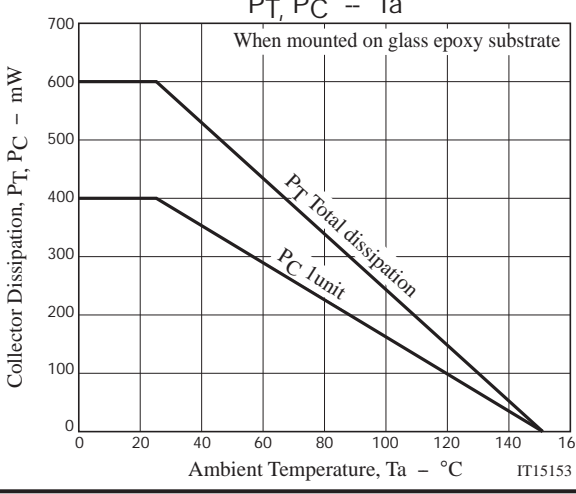
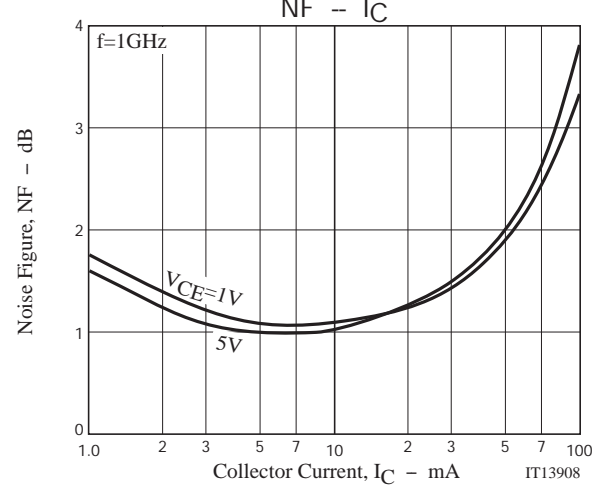
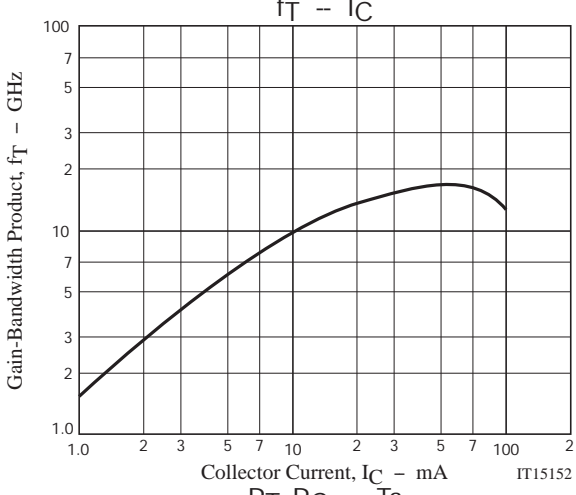
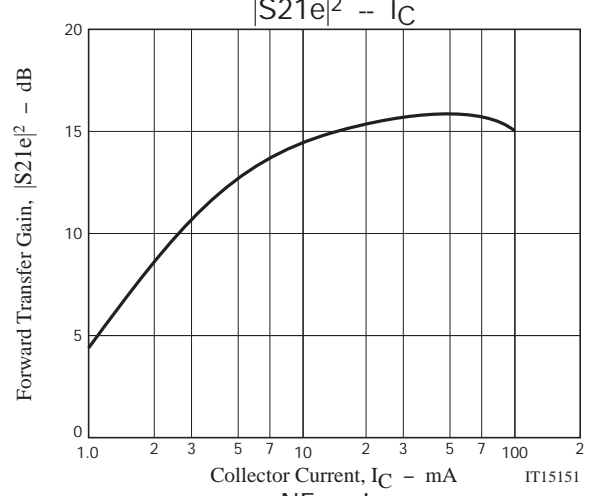
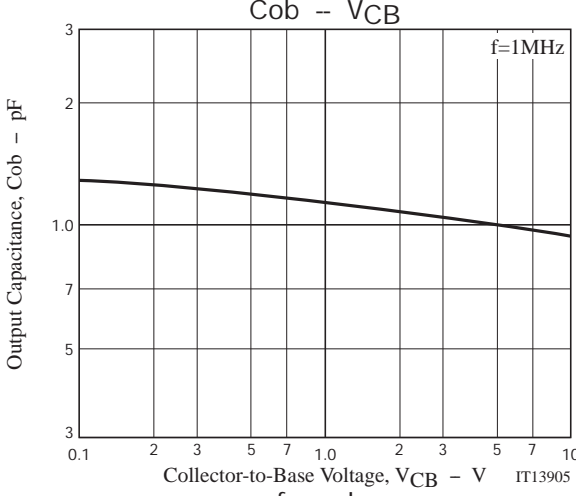
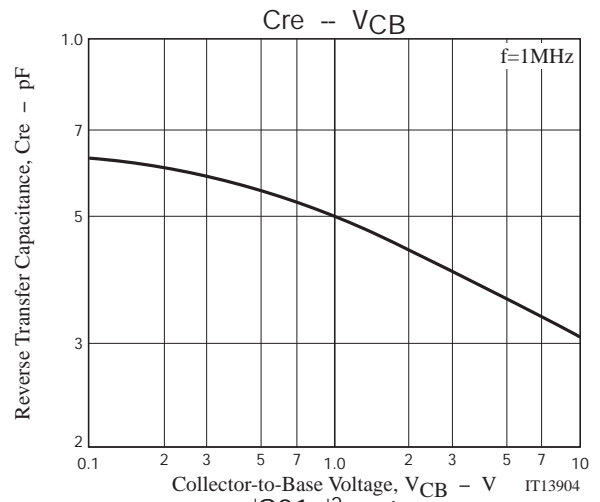
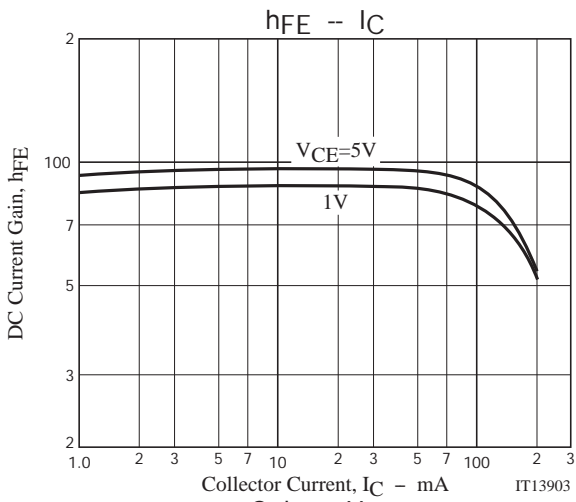
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=5\text{V}, I_E=0\text{A}$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=1\text{V}, I_C=0\text{A}$			1.0	μA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=50\text{mA}$	60		150	
Gain-Bandwidth Product	f_T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





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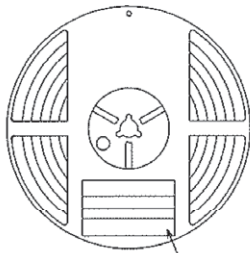
Embossed Taping Specification

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



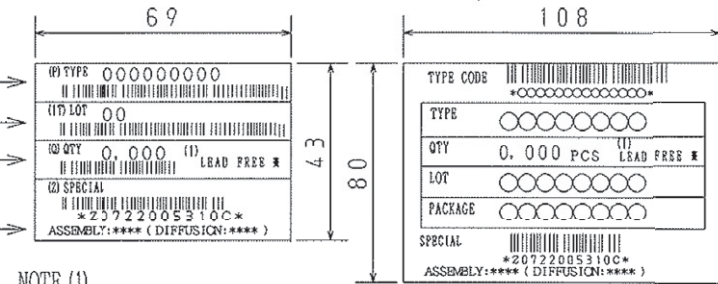
Type No.
LOT No.
Quantity
Origin

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.



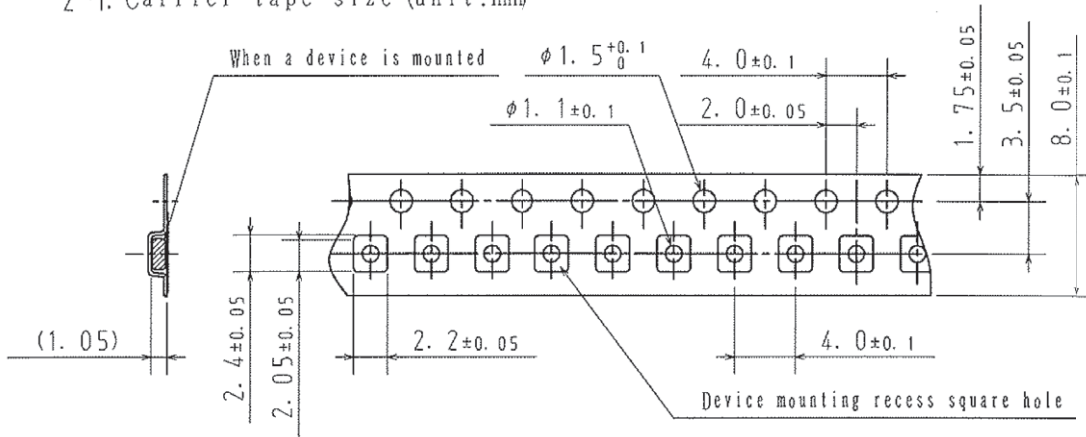
NOTE (1)

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

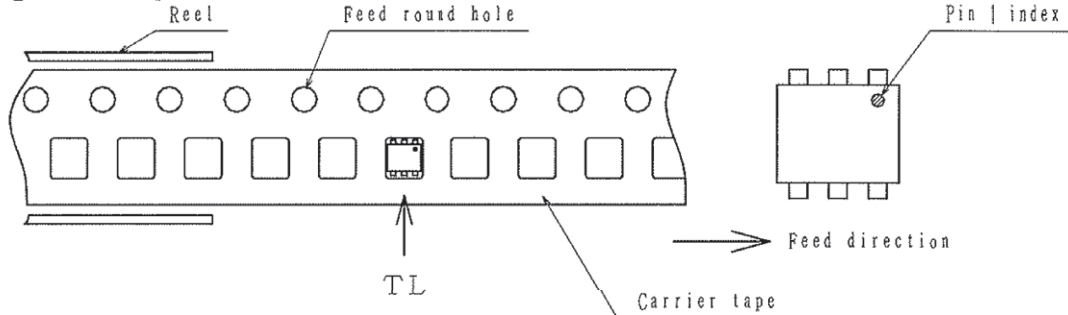
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

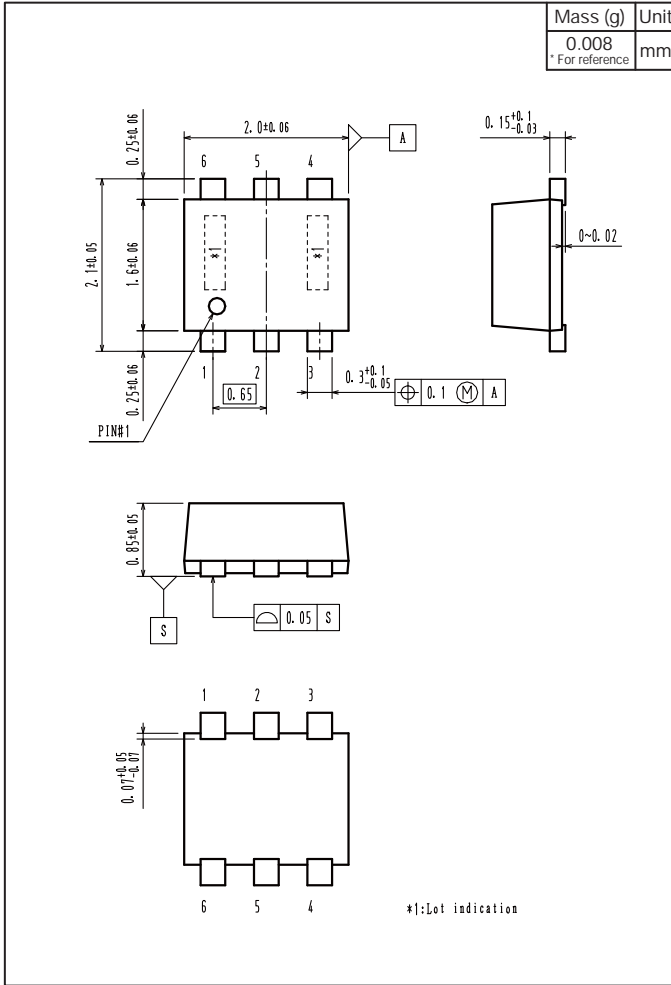


Those with pin | index on the feed hole side.....TL

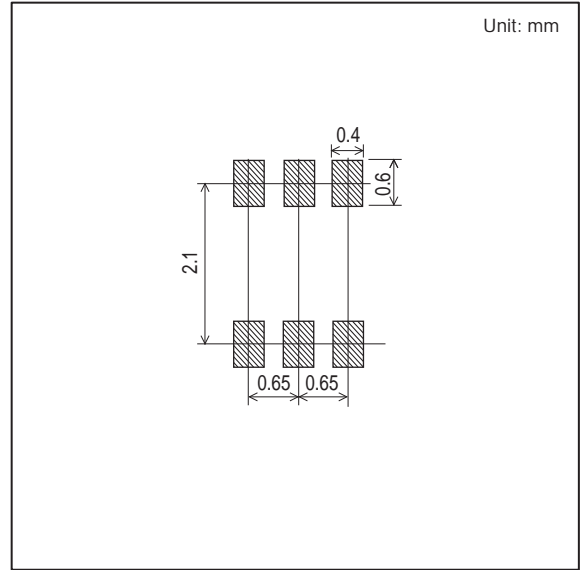
MCH6001

Outline Drawing

MCH6001-TL-E



Land Pattern Example



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