



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## MCH6122 — PNP Epitaxial Planar Silicon Transistor DC / DC Converter Amplifier

### Applications

- Relay drivers, lamp drivers, motor drivers, charger circuit

### Features

- Adoption of MBIT process
- Low collector-to-emitter saturation voltage
- Ultrasmall-sized package permitting applied sets to be made small and slim (0.85mm)
- High allowable power dissipation
- Halogen free compliance
- Large current capacity
- High speed switching

### Specifications

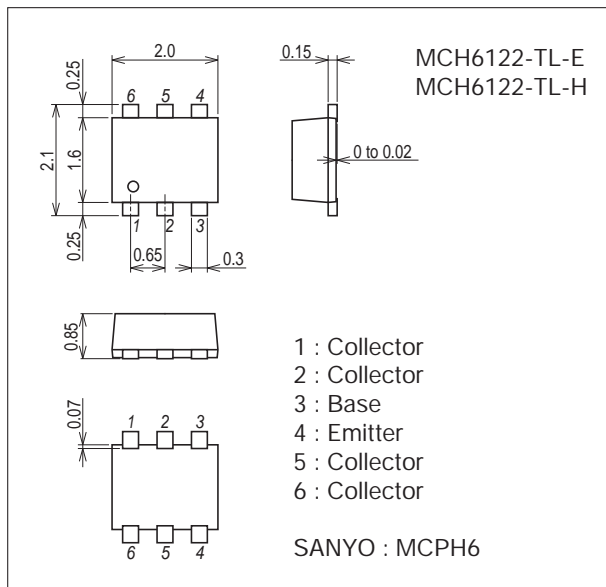
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-30	V
Collector-to-Emitter Voltage	V <sub>CE0</sub>		-30	V
Emitter-to-Base Voltage	V <sub>EB0</sub>		-5	V
Collector Current	I <sub>C</sub>		-3	A
Collector Current (Pulse)	I <sub>CP</sub>		-5	A
Base Current	I <sub>B</sub>		-600	mA
Collector Dissipation	P <sub>C</sub>	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm)	1	W
Junction Temperature	T <sub>j</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

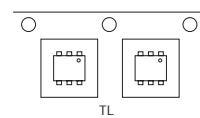
7022A-007



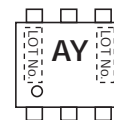
### Product & Package Information

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

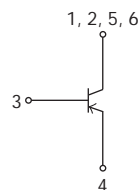
### Packing Type : TL



### Marking



### Electrical Connection

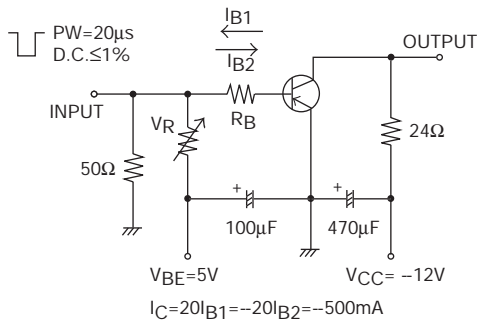


# MCH6122

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

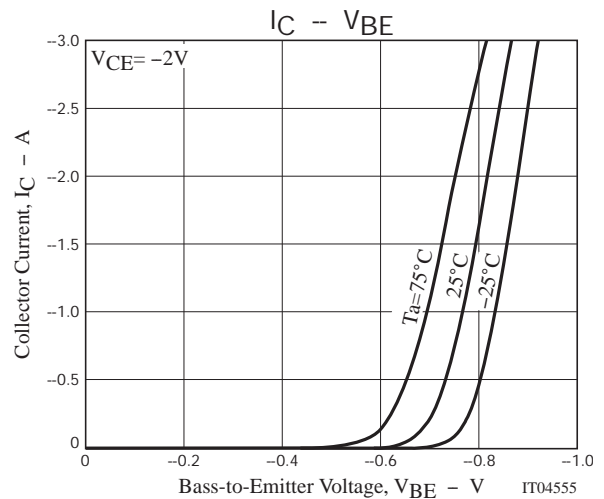
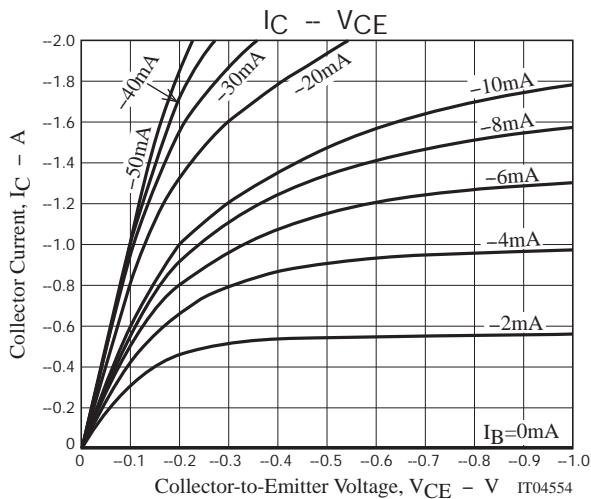
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -30\text{V}, I_E = 0\text{A}$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-0.1	$\mu\text{A}$
Collector Cutoff Current	$I_{ECO}$	$V_{EC} = -4.5\text{V}, I_B = 0\text{A}$			-1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$		400		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		25		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -1.5\text{A}, I_B = -30\text{mA}$		-180	-270	mV
	$V_{CE(sat)2}$	$I_C = -1.5\text{A}, I_B = -75\text{mA}$		-120	-180	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1.5\text{A}, I_B = -30\text{mA}$		-0.83	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-5			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		50		ns
Storage Time	$t_{stg}$			270		ns
Fall Time	$t_f$			27		ns

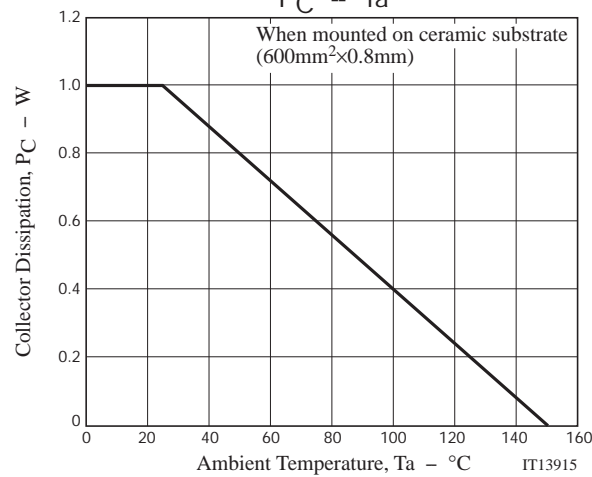
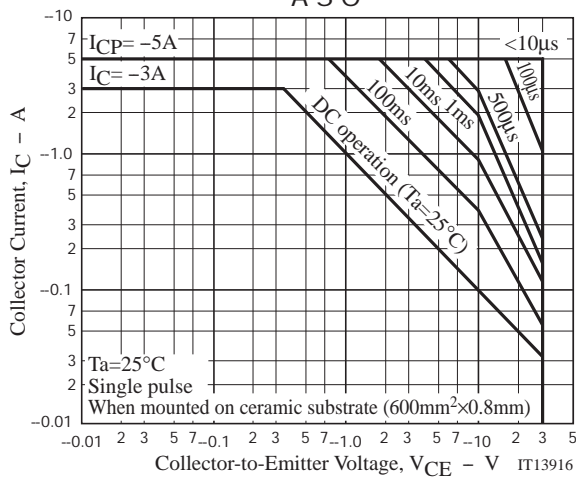
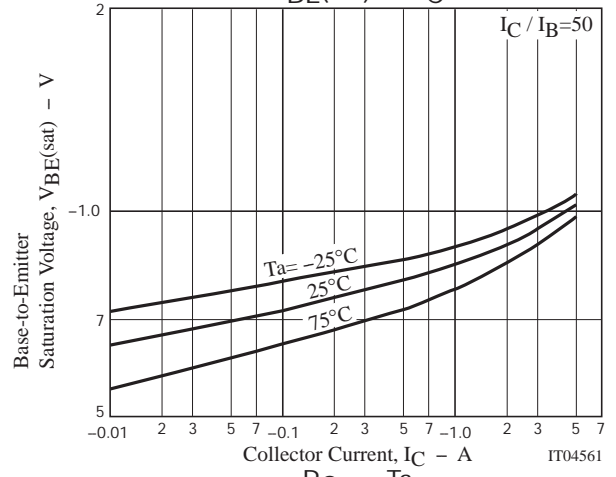
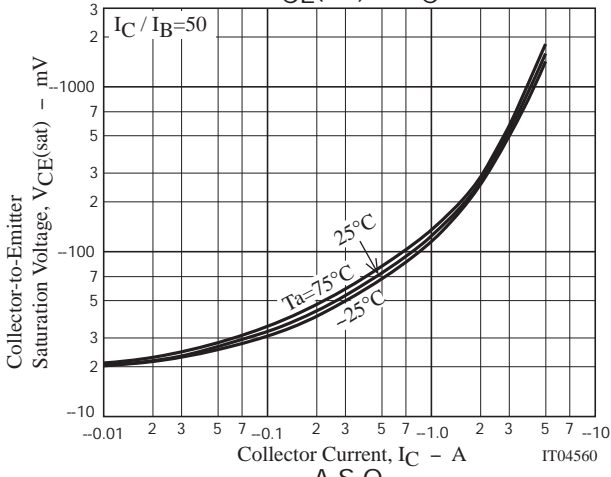
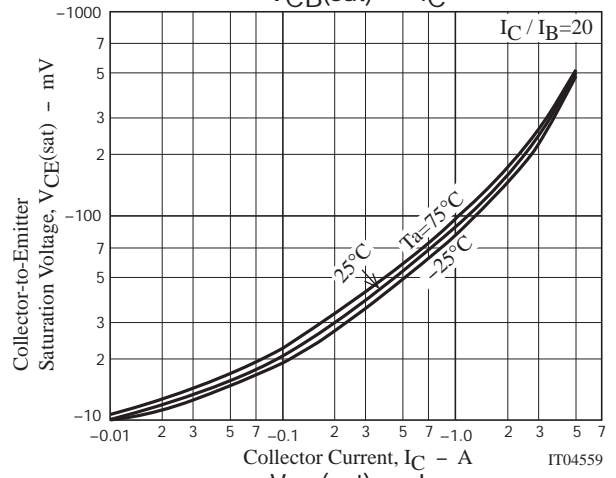
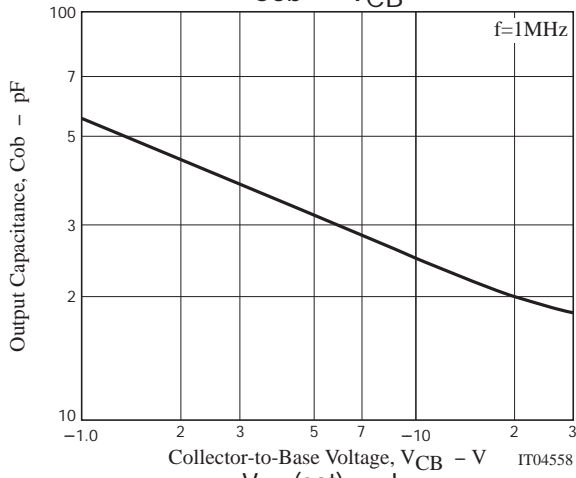
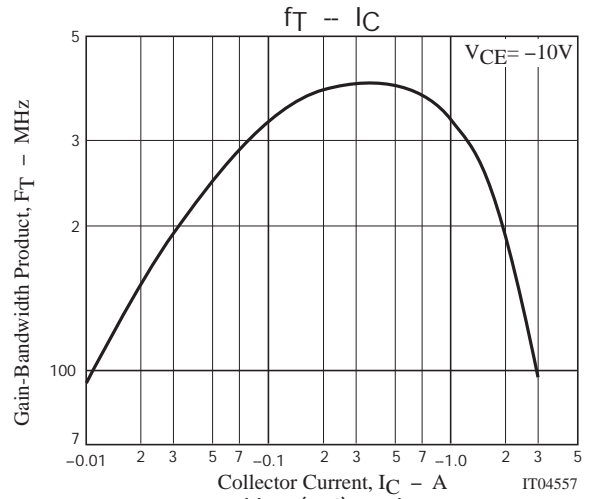
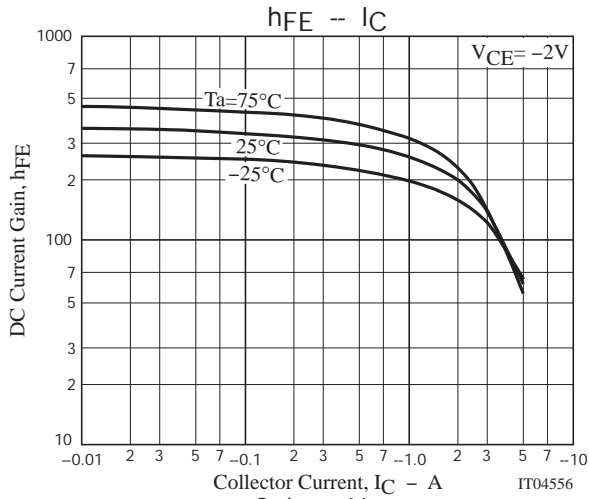
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
MCH6122-TL-E	MCPH6	3,000pcs./reel	Pb Free
MCH6122-TL-H	MCPH6	3,000pcs./reel	Pb Free and Halogen Free





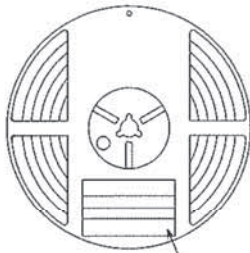
Embossed Taping Specification

MCH6122-TL-E, MCH6122-TL-H

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

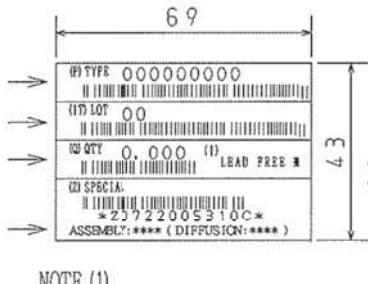
Packing method



Type No.  
LOT No.  
Quantity  
Origin

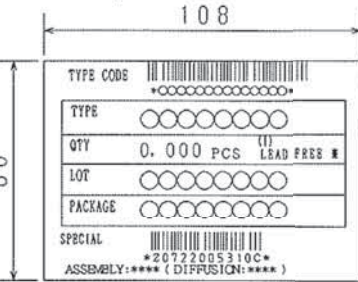
Reel label

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.)



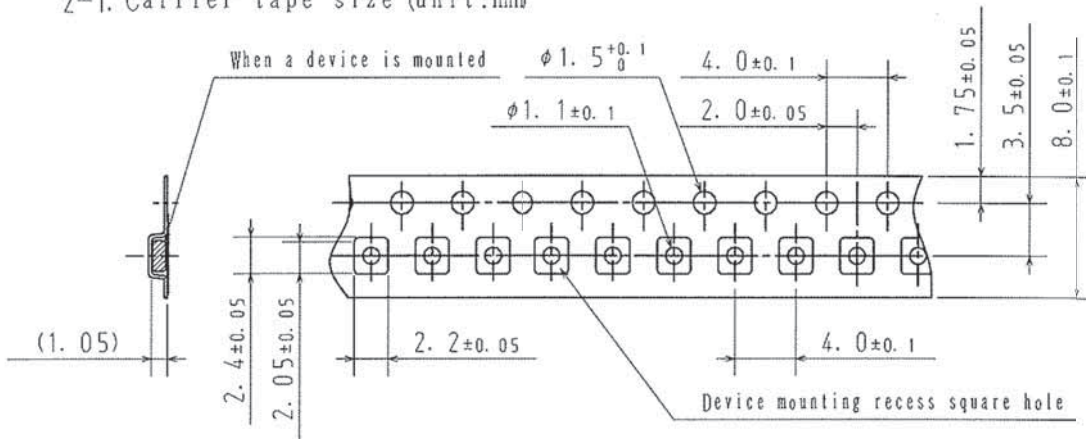
NOTE (1)

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

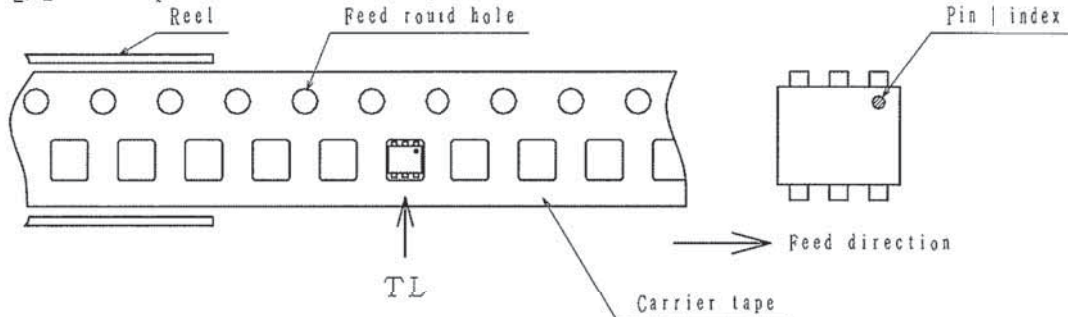
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

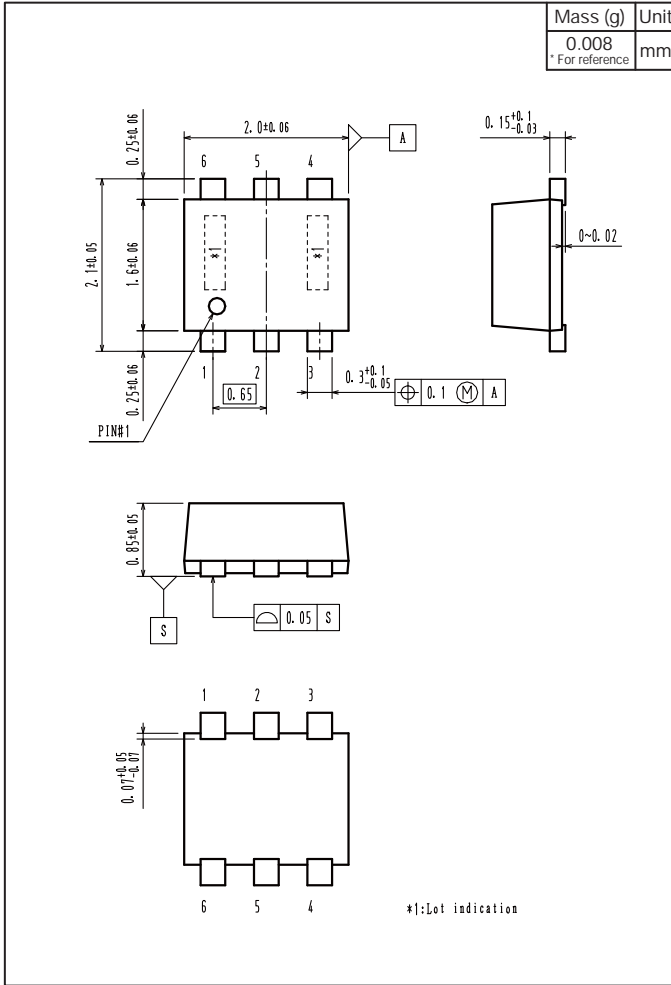


Those with pin | index on the feed hole side.....TL

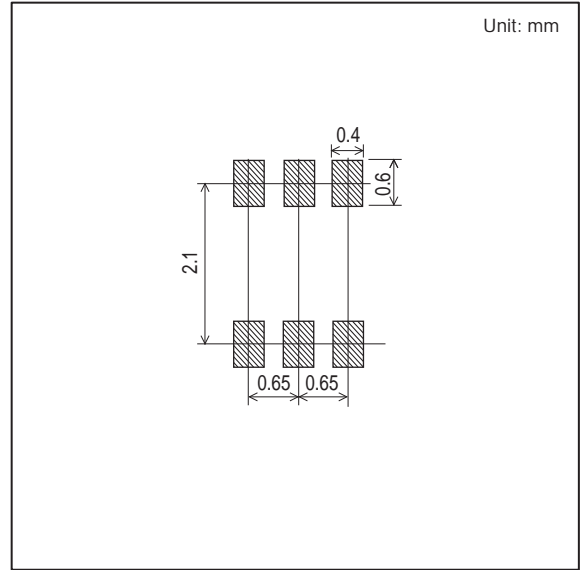
# MCH6122

## Outline Drawing

MCH6122-TL-E, MCH6122-TL-H



## Land Pattern Example



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