Ordering number : ENA1287A

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
- Large current capacity
- High speed switching
- Ultrasmall-sized package permitting applied sets to be made small and slim (0.85mm)
- High allowable power dissipation
- Halogem free compliance

Specifications

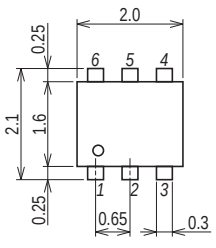
Absolute Maximum Ratings at Ta=25°C

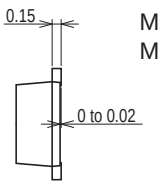
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-30	V
Collector-to-Emitter Voltage	V_{CEO}		-30	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-3	A
Collector Current (Pulse)	I_{CP}		-5	A
Base Current	I_B		-600	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm^2×0.8mm)	1	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Package Dimensions

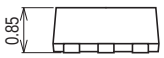
unit : mm (typ)

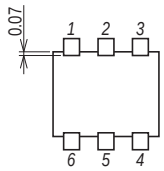
7022A-007





MCH6122-TL-E
MCH6122-TL-H





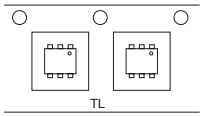
1 : Collector
2 : Collector
3 : Base
4 : Emitter
5 : Collector
6 : Collector

SANYO : MCPH6

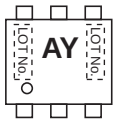
Product & Package Information

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

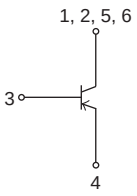
Packing Type : TL



Marking



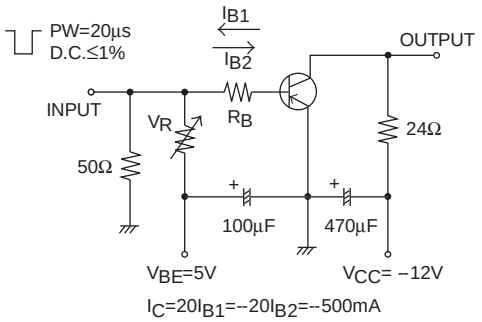
Electrical Connection



Electrical Characteristics at Ta=25°C

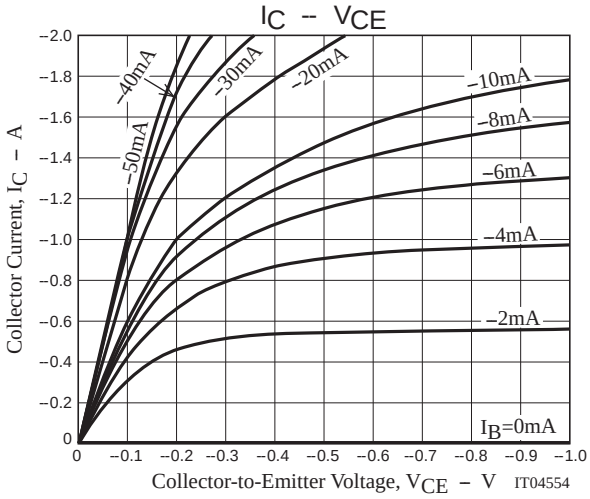
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}= -30V, I_E=0A			-0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}= -4V, I_C=0A			-0.1	μA
Collector Cutoff Current	I_{ECO}	V_{EC}= -4.5V, I_B=0A			-1	μA
DC Current Gain	h_{FE}	V_{CE}= -2V, I_C= -500mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}= -10V, I_C= -500mA		400		MHz
Output Capacitance	Cob	V_{CB}= -10V, f=1MHz		25		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C= -1.5A, I_B= -30mA		-180	-270	mV
	V_{CE}(sat)2	I_C= -1.5A, I_B= -75mA		-120	-180	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C= -1.5A, I_B= -30mA		-0.83	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C= -10μA, I_E=0A	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C= -1mA, R_{BE}=∞	-30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E= -10μA, I_C=0A	-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

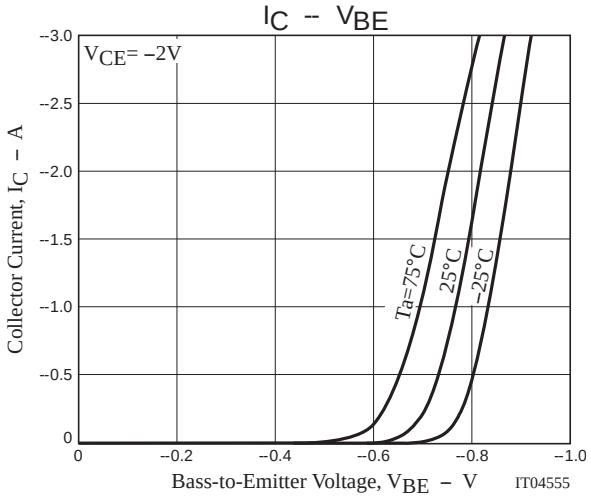
Switching Time Test Circuit

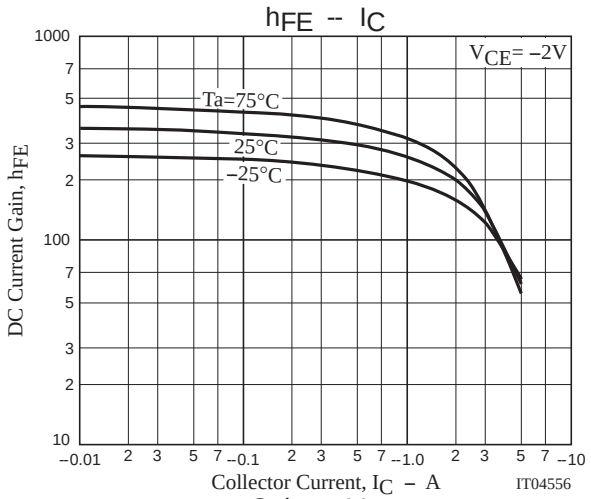


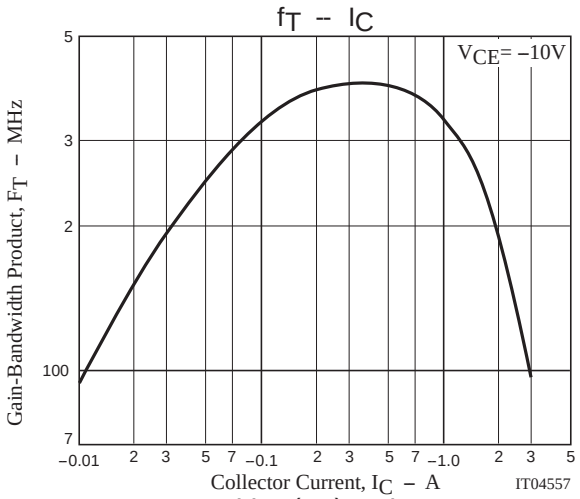
Ordering Information

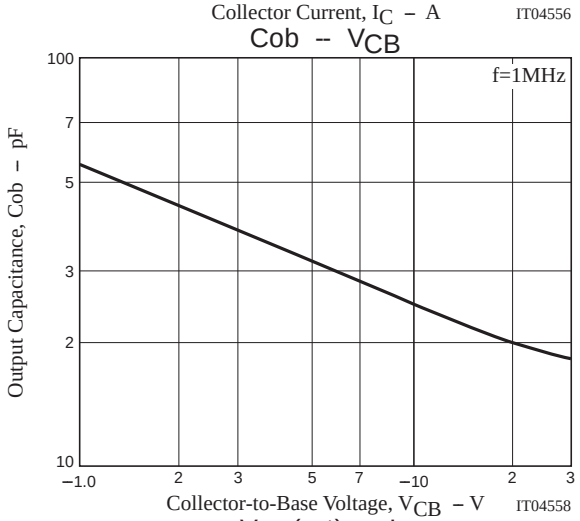
Device	Package	Shipping	memo
MCH6122-TL-E	MCPH6	3,000pcs./reel	Pb Free
MCH6122-TL-H	MCPH6	3,000pcs./reel	Pb Free and Halogen Free

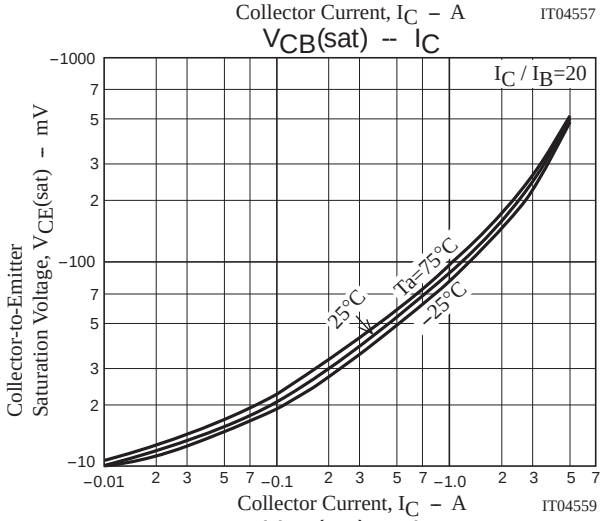


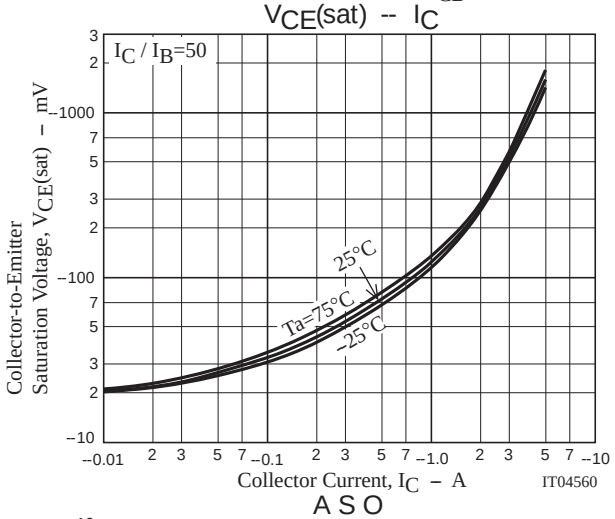


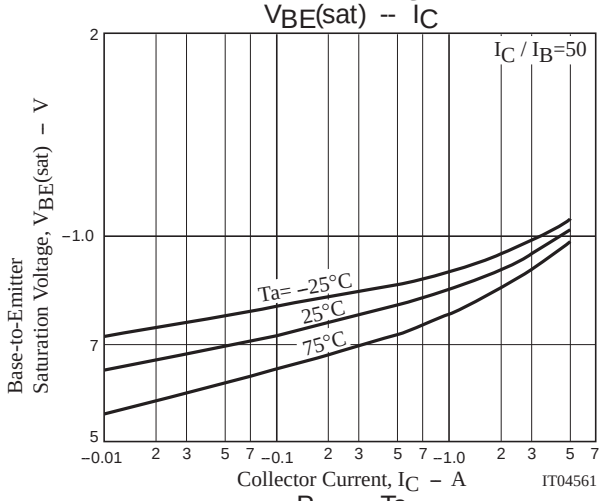

hFE -- IC
VCE= −2V
Ta=75°C
25°C
−25°C
DC Current Gain, hFE
Collector Current, IC − A
IT04556

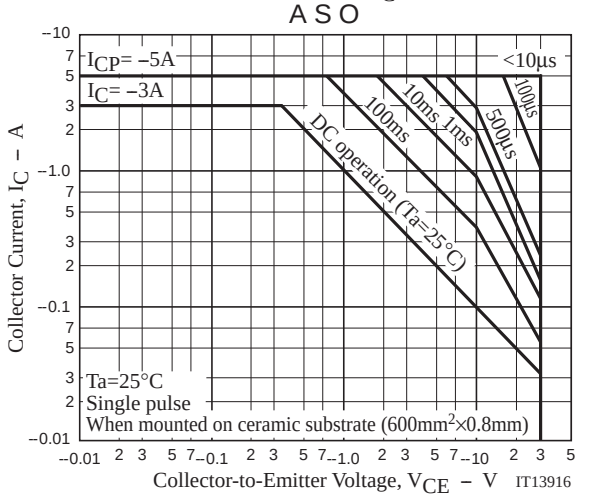

fT -- IC
VCE= −10V
Gain-Bandwidth Product, FT − MHz
Collector Current, IC − A
IT04557

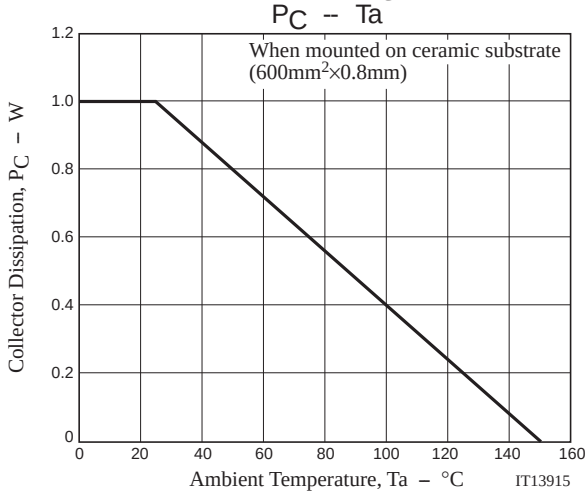

Cob -- VCB
f=1MHz
Output Capacitance, Cob − pF
Collector-to-Base Voltage, VCB − V
IT04558


VCB(sat) -- IC
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) − mV
25°C
Ta=75°C
−25°C
Collector Current, IC − A
IT04559


VCE(sat) -- IC
IC / IB=50
Collector-to-Emitter Saturation Voltage, VCE(sat) − mV
25°C
Ta=75°C
−25°C
Collector Current, IC − A
IT04560


VBE(sat) -- IC
IC / IB=50
Base-to-Emitter Saturation Voltage, VBE(sat) − V
Ta= −25°C
25°C
75°C
Collector Current, IC − A
IT04561


A S O
ICP= −5A
IC= −3A
<10µs
10µs
100µs
1ms
10ms
100ms
DC operation (Ta=25°C)
Ta=25°C
Single pulse
When mounted on ceramic substrate (600mm2×0.8mm)
Collector Current, IC − A
Collector-to-Emitter Voltage, VCE − V
IT13916


PC -- Ta
When mounted on ceramic substrate
(600mm2×0.8mm)
Collector Dissipation, PC − W
Ambient Temperature, Ta − °C
IT13915

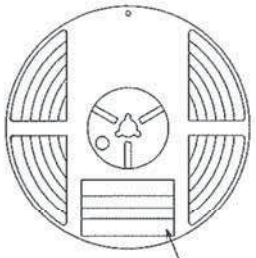
Embossed Taping Specification

MCH6122-TL-E, MCH6122-TL-H

1. Packing Format

Package Name	Carrier Tape Type	Maximun 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

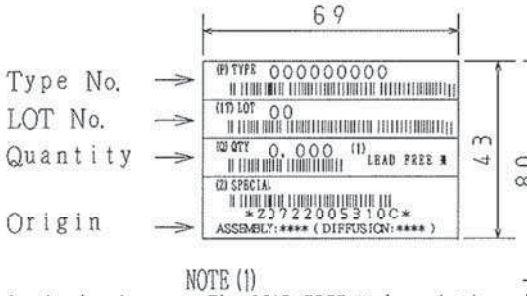
Packing method



Reel label

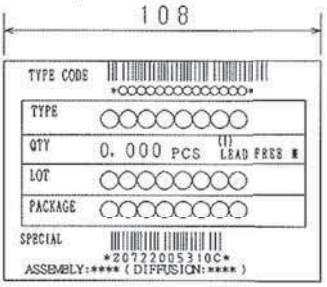
Reel label, Inner box label

(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.



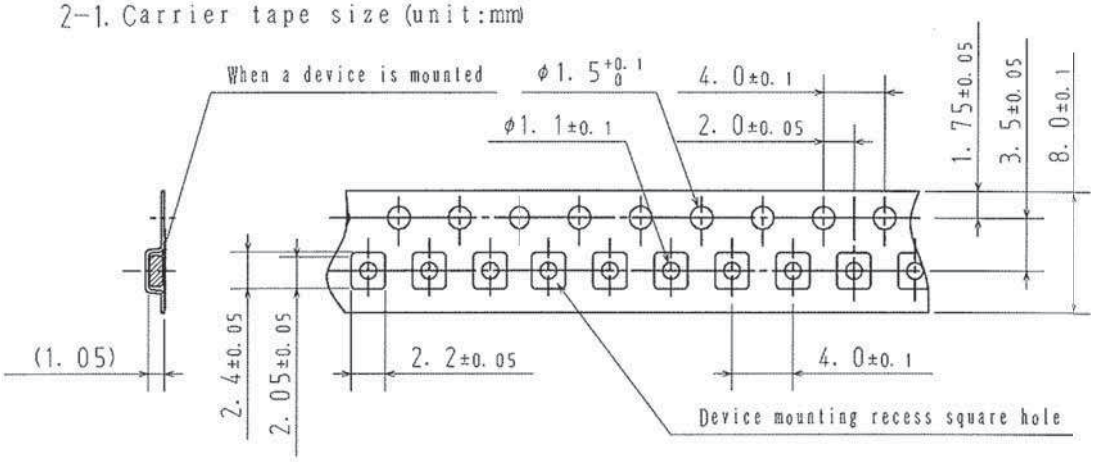
NOTE (1)

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

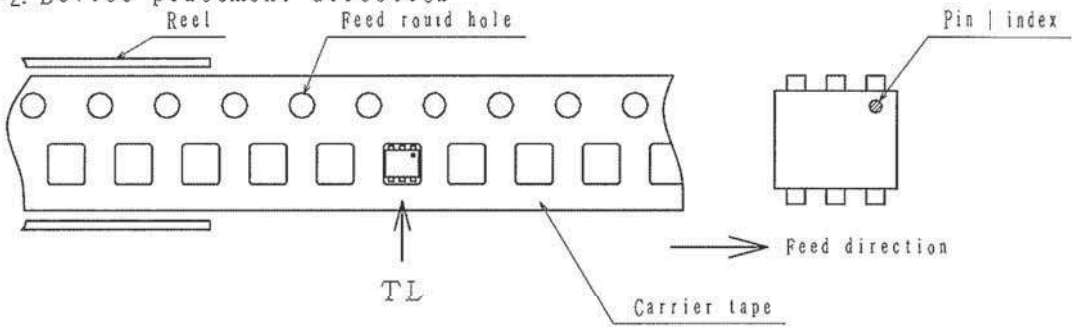
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



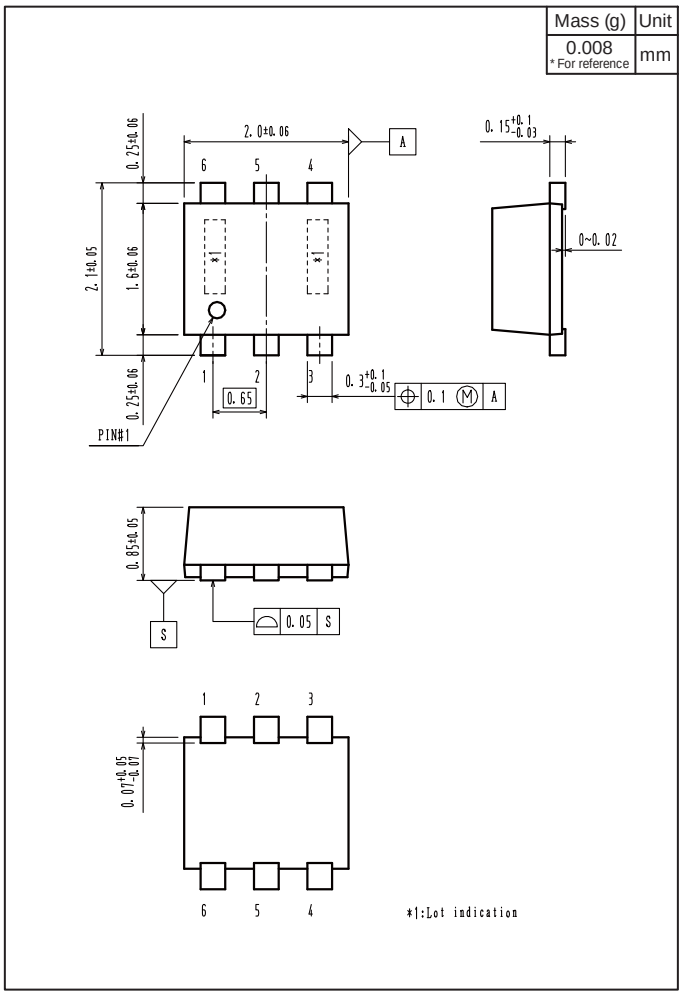
2-2. Device placement direction



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

Outline Drawing

MCH6122-TL-E, MCH6122-TL-H



Land Pattern Example