



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6121 — PNP Epitaxial Planar Silicon Transistor DC / DC Converter Amplifier

Applications

- Relay drivers, lamp drivers, motor drivers, line switch

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
- Large current capacity
- High speed switching
- Halogen free compliance

Specifications

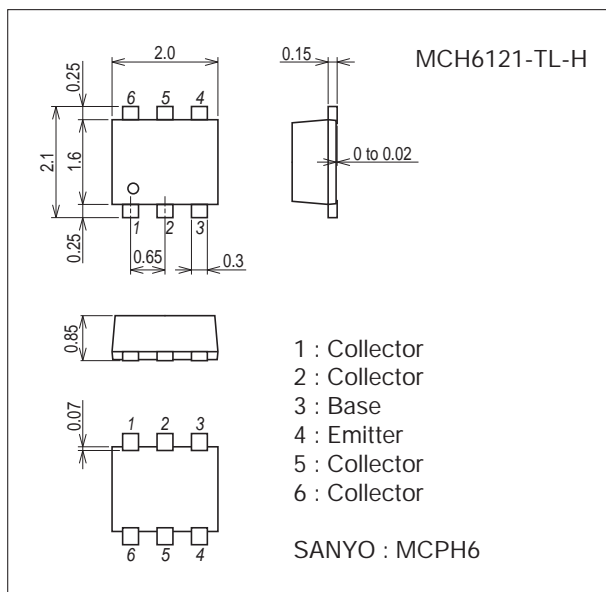
Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|--------|---|-------------|------|
| Collector-to-Base Voltage | VCBO | | -15 | V |
| Collector-to-Emitter Voltage | VCEO | | -12 | V |
| Emitter-to-Base Voltage | VEBO | | -5 | V |
| Collector Current | IC | | -3 | A |
| Collector Current (Pulse) | ICP | | -5 | A |
| Base Current | IB | | -600 | mA |
| Collector Dissipation | PC | 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)

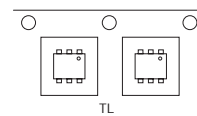
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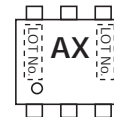
Product & Package Information

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

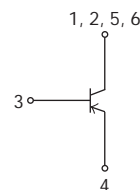
Packing Type : TL



Marking



Electrical Connection

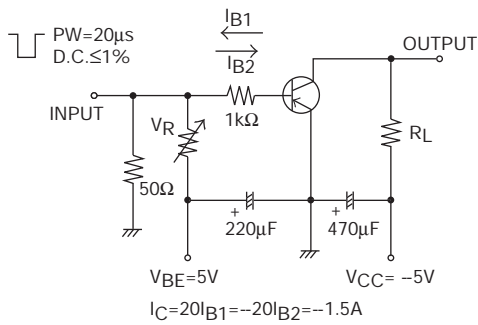


MCH6121

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

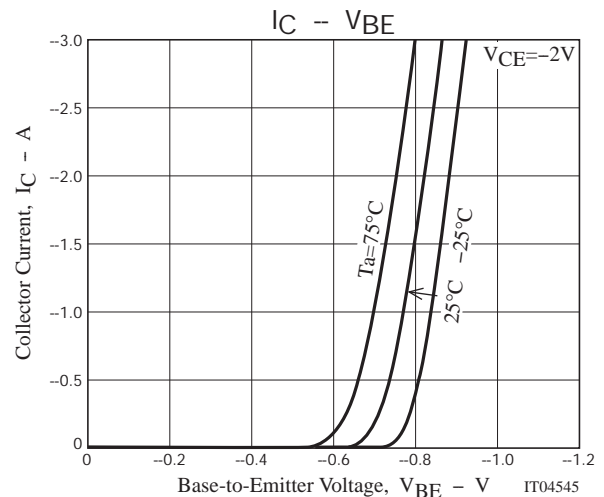
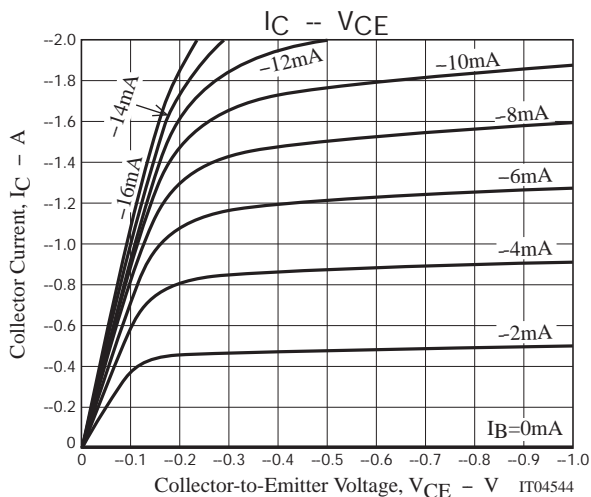
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|--|---------|-------|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = -12\text{V}, I_E = 0\text{A}$ | | | -0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = -4\text{V}, I_C = 0\text{A}$ | | | -0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = -2\text{V}, I_C = -500\text{mA}$ | 200 | | 560 | |
| Gain-Bandwidth Product | f_T | $V_{CE} = -2\text{V}, I_C = -500\text{mA}$ | | 380 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = -10\text{V}, f = 1\text{MHz}$ | | 40 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -1.5\text{A}, I_B = -30\text{mA}$ | | -110 | -165 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = -1.5\text{A}, I_B = -30\text{mA}$ | | -0.85 | -1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu\text{A}, I_E = 0\text{A}$ | -15 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1\text{mA}, R_{BE} = \infty$ | -12 | | | 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. | | 30 | | ns |
| Storage Time | t_{stg} | | | 90 | | ns |
| Fall Time | t_f | | | 14 | | ns |

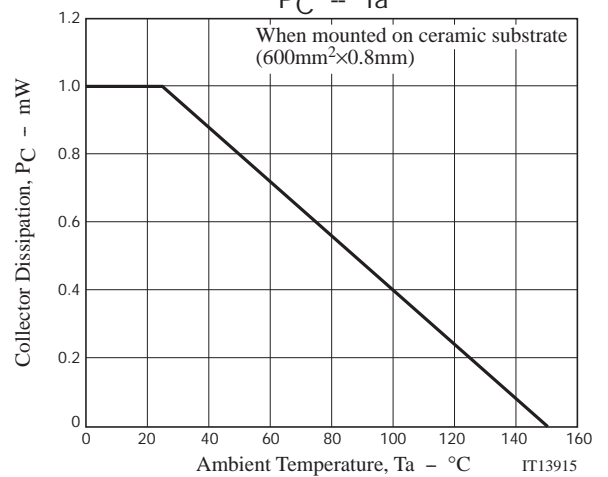
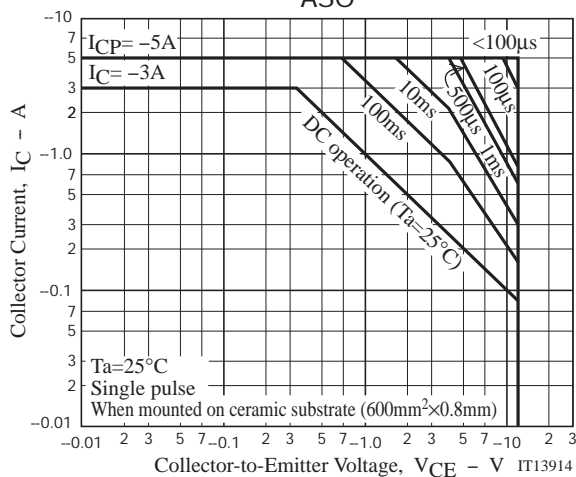
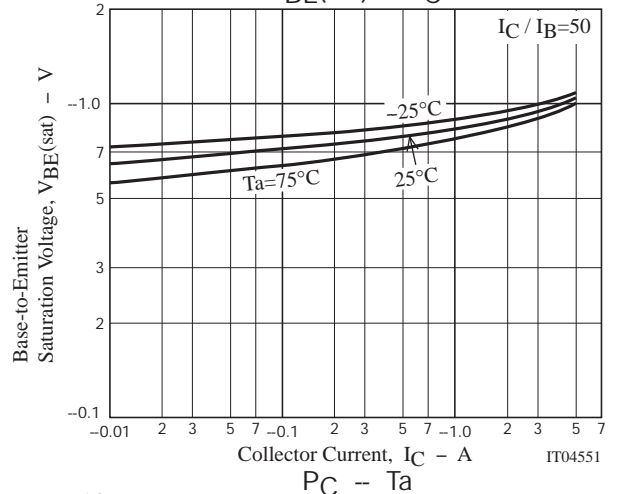
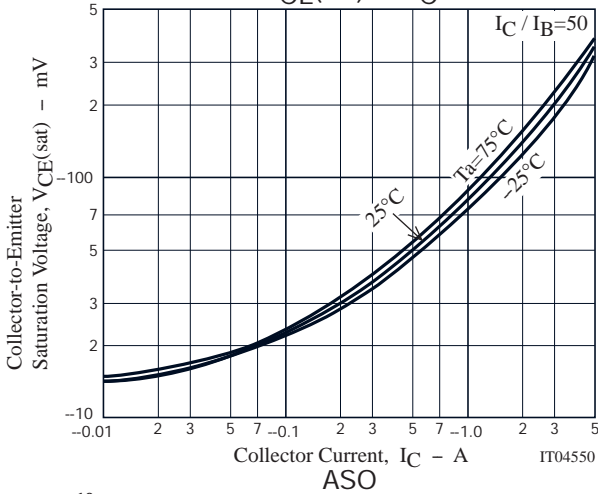
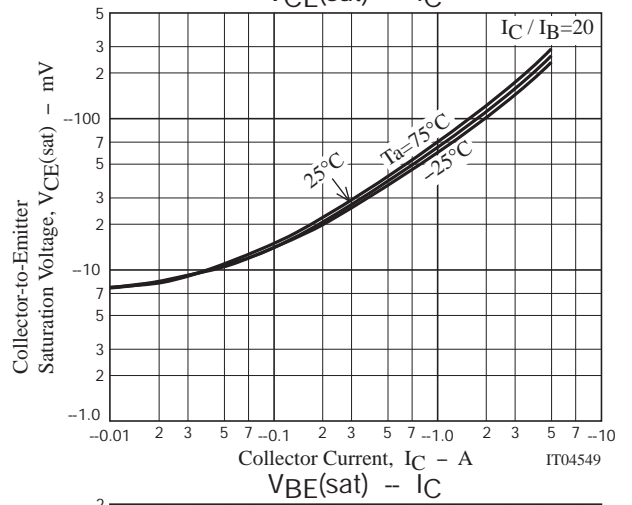
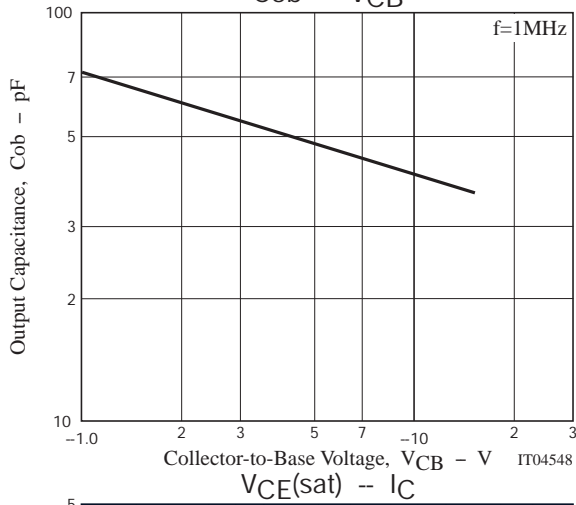
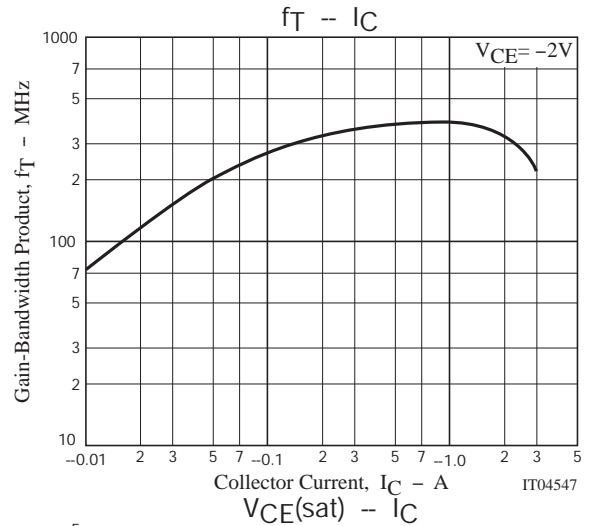
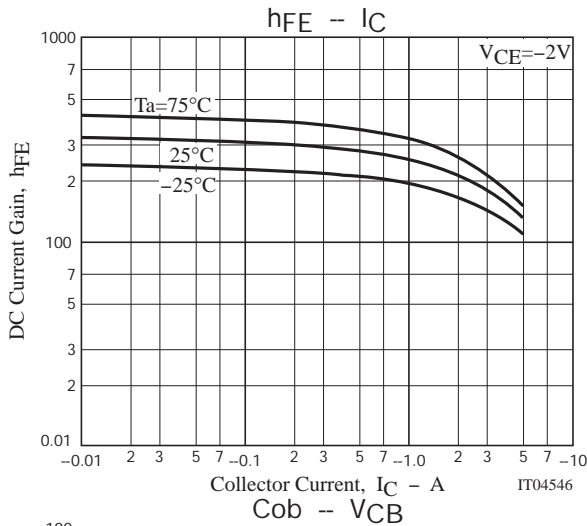
Switching Time Test Circuit



Ordering Information

| Device | Package | Shipping | memo |
|--------------|---------|----------------|--------------------------|
| MCH6121-TL-H | MCPH6 | 3,000pcs./reel | Pb Free and Halogen Free |





MCH6121

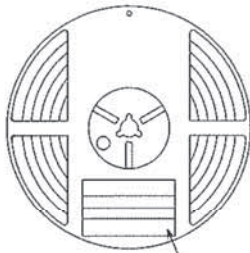
Embossed Taping Specification

MCH6121-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 |

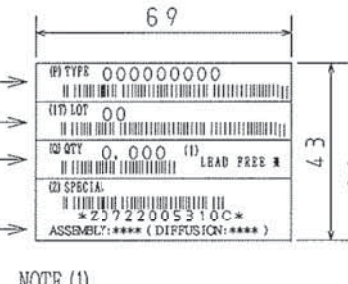
Packing method



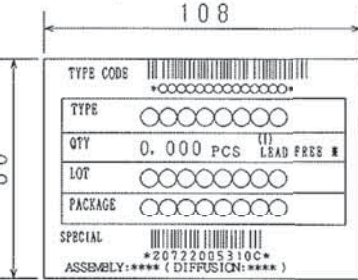
Reel label

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.)



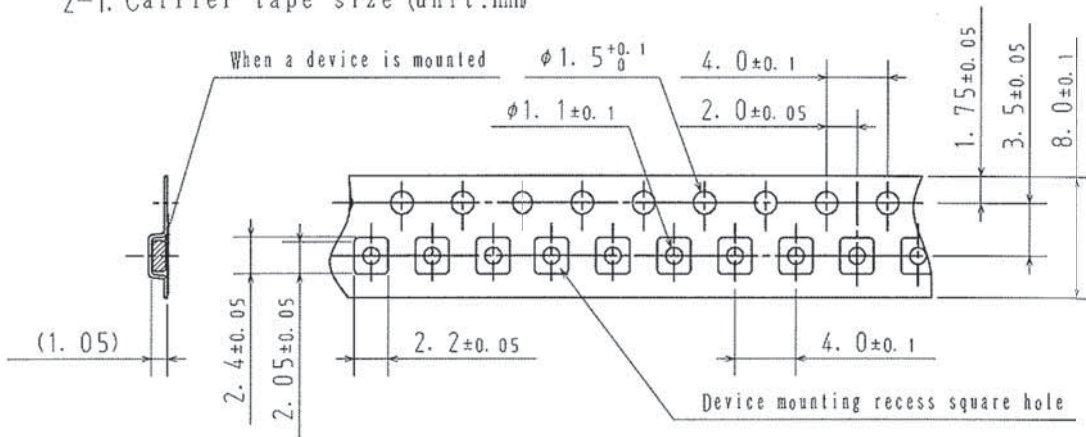
NOTE (1)

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

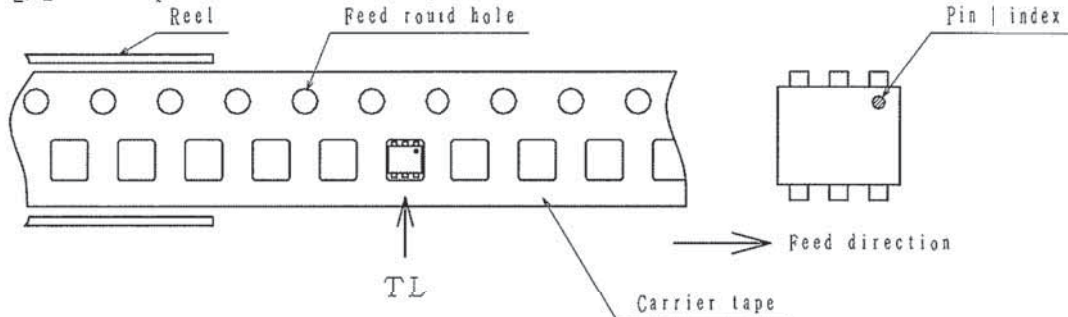
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

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

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