



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

CPH5517 — PNP/NPN Epitaxial Planar Silicon Transistors High-Current Switching Applications

Applications

- relay drivers, lamp drivers, motor drivers

Features

- Composite type with a PNP/NPN transistor contained in package, facilitating high-density mounting
- The CPH5517 consists of two chips which are equivalent to the CPH3116 and the CPH3216, respectively
- Ultrasmall package permitting applied sets to be small and slim (mounting height : 0.9mm)

Specifications () : PNP

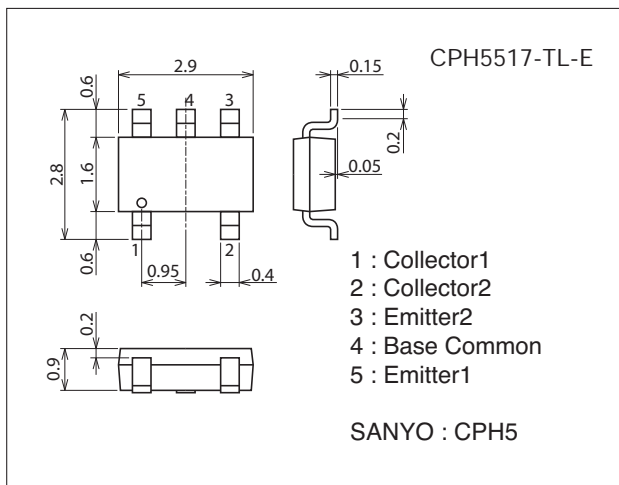
Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|------------------|--|-------------|------|
| Collector-to-Base Voltage | V _{CBO} | | (-50)60 | V |
| Collector-to-Emitter Voltage | V _{CEO} | | (-50) | V |
| Emitter-to-Base Voltage | V _{EBO} | | (-5) | V |
| Collector Current | I _C | | (-1.0) | A |
| Collector Current (Pulse) | I _{CP} | | (-3) | A |
| Base Current | I _B | | (-200) | mA |
| Collector Dissipation | P _C | Mounted on a ceramic board (600mm ² ×0.8mm) 1unit | 0.9 | W |
| Junction Temperature | T _j | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Package Dimensions

unit : mm (typ)

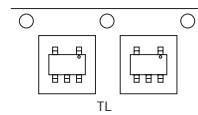
7017A-008



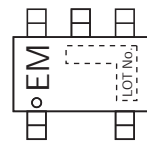
Product & Package Information

- Package : CPH5
- JEITA, JEDEC : SC-74A, SOT-25
- Minimum Packing Quantity : 3,000 pcs./reel

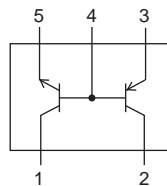
Packing Type : TL



Marking



Electrical Connection

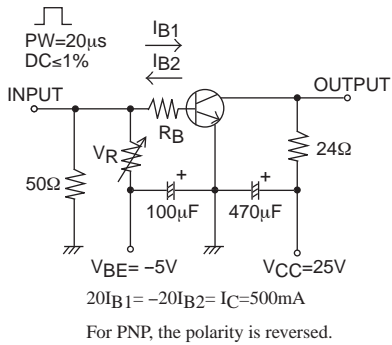


CPH5517

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

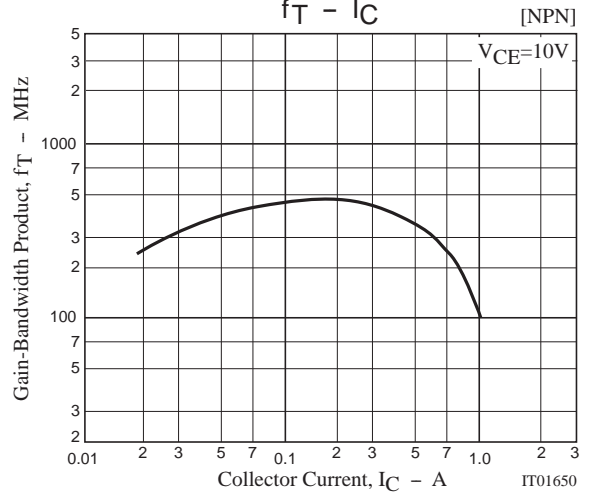
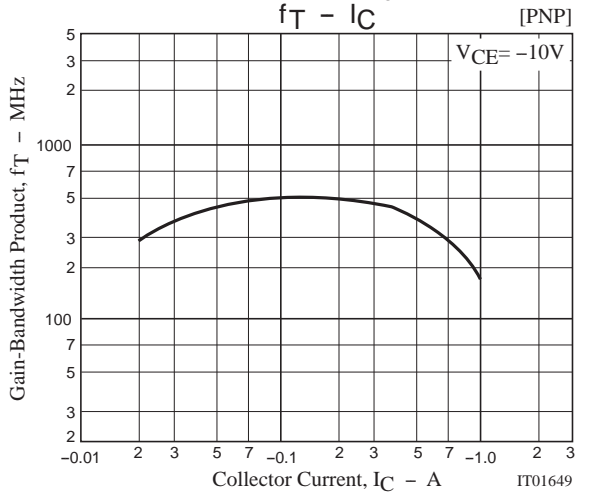
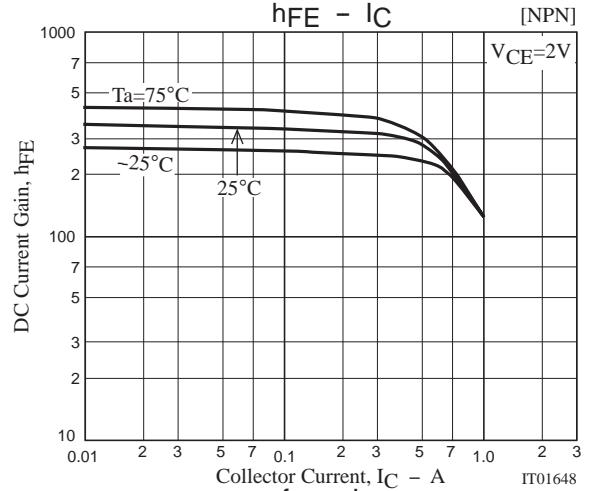
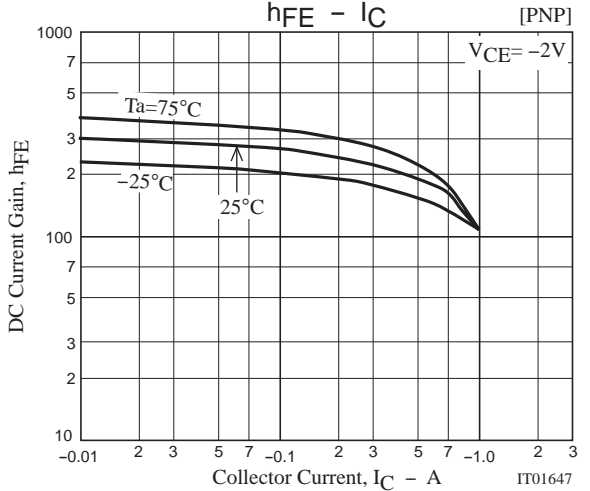
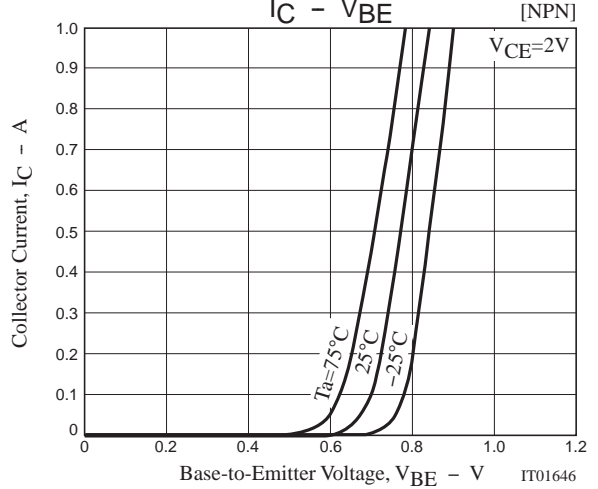
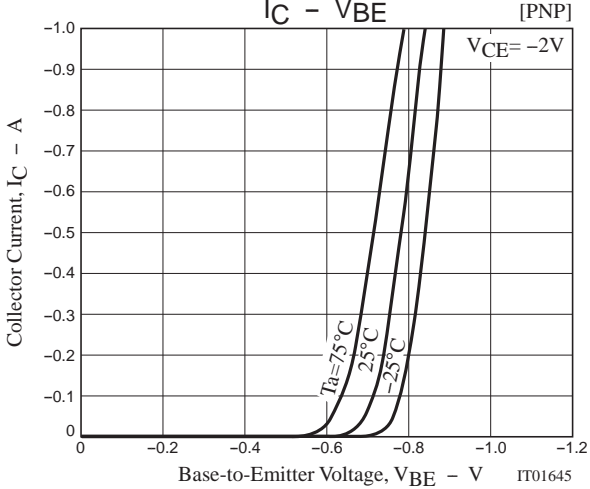
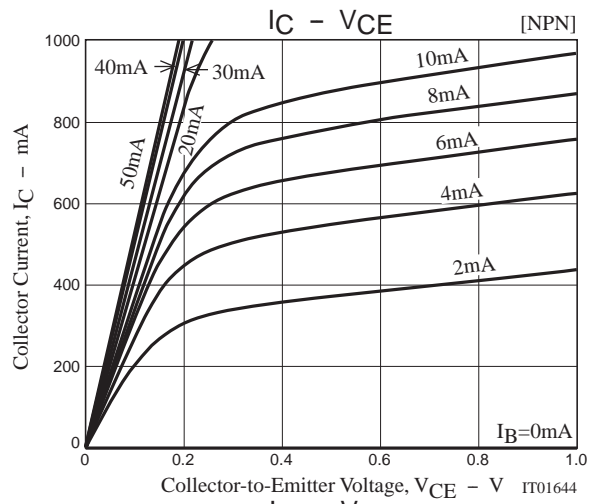
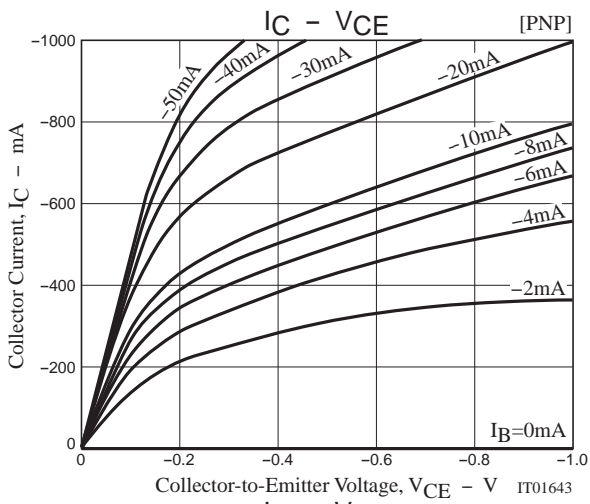
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------------|---|---------|----------|--------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=(-)40\text{V}, I_E=0\text{A}$ | | | (-)0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=(-)4\text{V}, I_C=0\text{A}$ | | | (-)0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=(-)2\text{V}, I_C=(-)100\text{mA}$ | 200 | | 560 | |
| Gain-Bandwidth Product | f_T | $V_{CE}=(-)10\text{V}, I_C=(-)300\text{mA}$ | | 420 | | MHz |
| Output Capacitance | Cob | $V_{CB}=(-)10\text{V}, f=1\text{MHz}$ | | (9)6 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE}(\text{sat})$ | $I_C=(-)500\text{mA}, I_B=(-)10\text{mA}$ | | (-280) | (-430) | mV |
| | | $I_C=(-)300\text{mA}, I_B=(-)6\text{mA}$ | | 130 | 190 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE}(\text{sat})$ | $I_C=(-)500\text{mA}, I_B=(-)10\text{mA}$ | | (-)0.81 | (-)1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=(-)10\mu\text{A}, I_E=0\text{A}$ | (-50)60 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)1\text{mA}, R_{BE}=\infty$ | (-)50 | | | 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. | | (36)38 | | ns |
| Storage Time | t_{stg} | | | (173)332 | | ns |
| Fall Time | t_f | | | (28)40 | | ns |

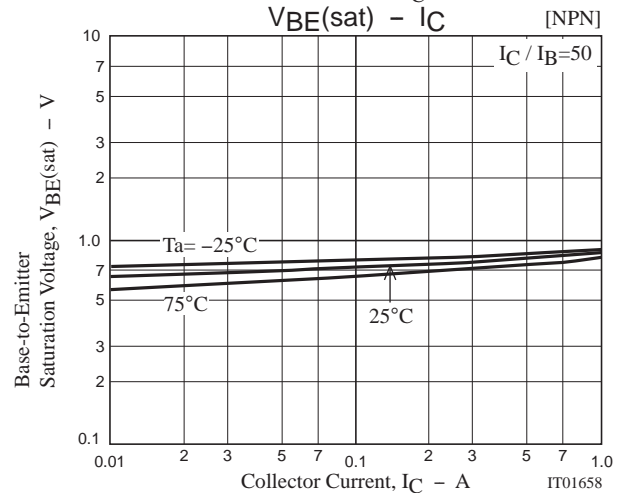
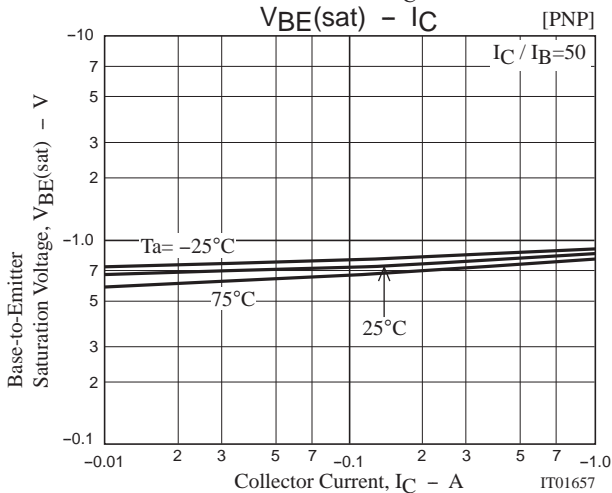
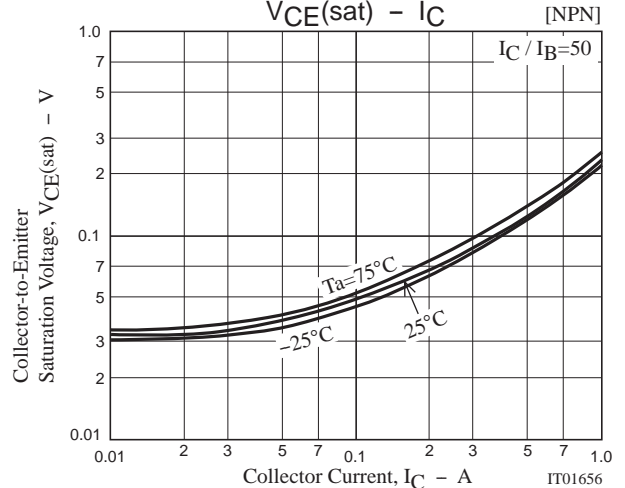
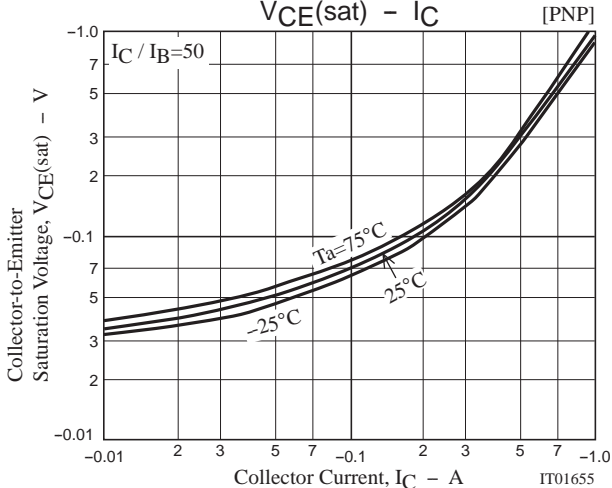
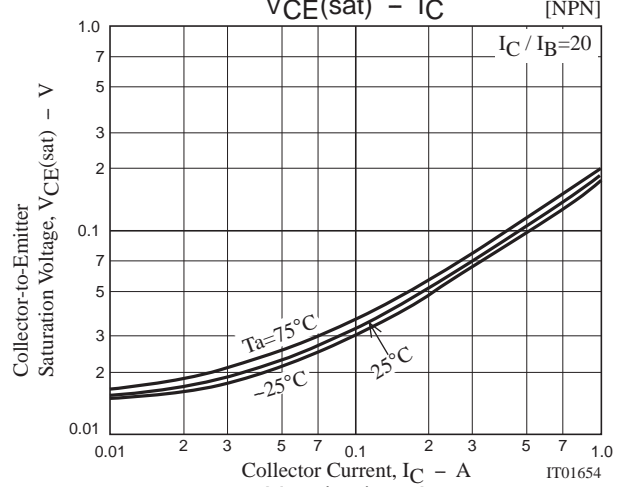
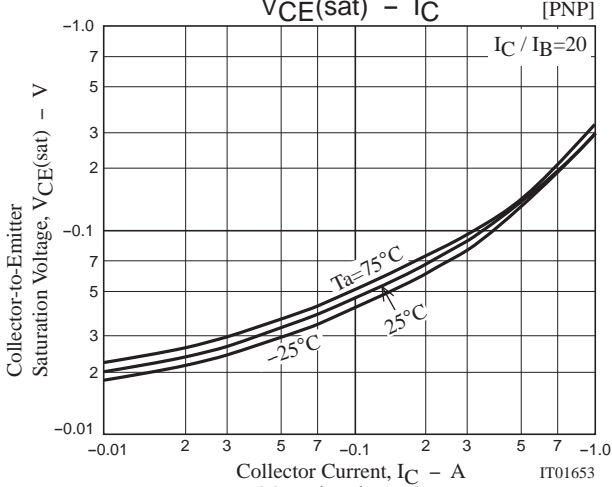
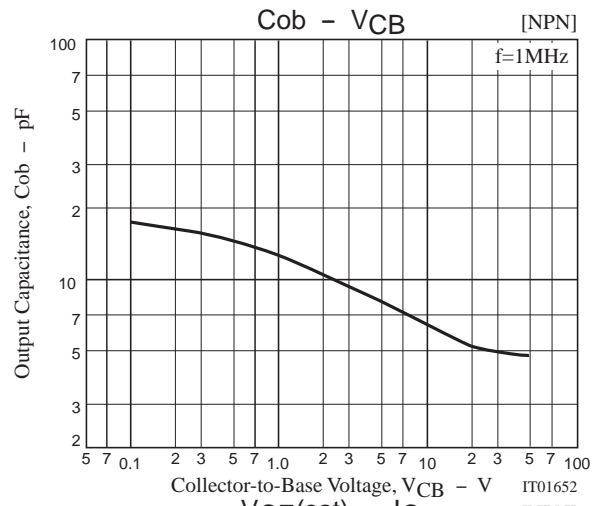
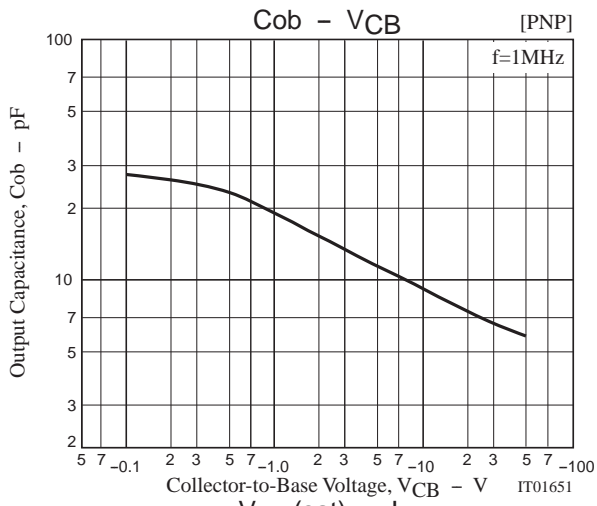
Switching Time Test Circuit

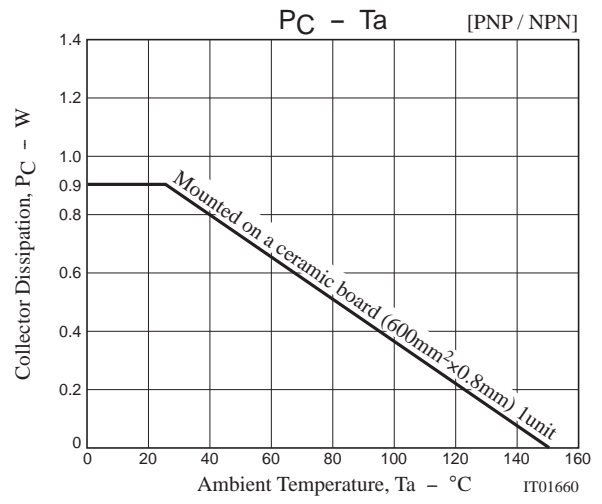
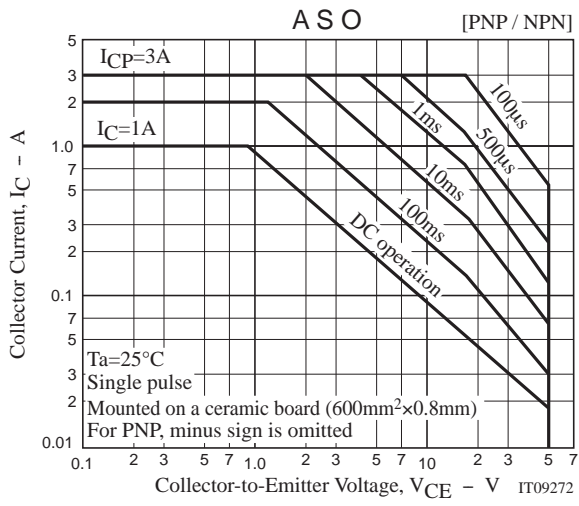


Ordering Information

| Device | Package | Shipping | memo |
|--------------|---------|----------------|---------|
| CPH5517-TL-E | CPH5 | 3,000pcs./reel | Pb Free |







Embossed Taping Specification

CPH5517-TL-E

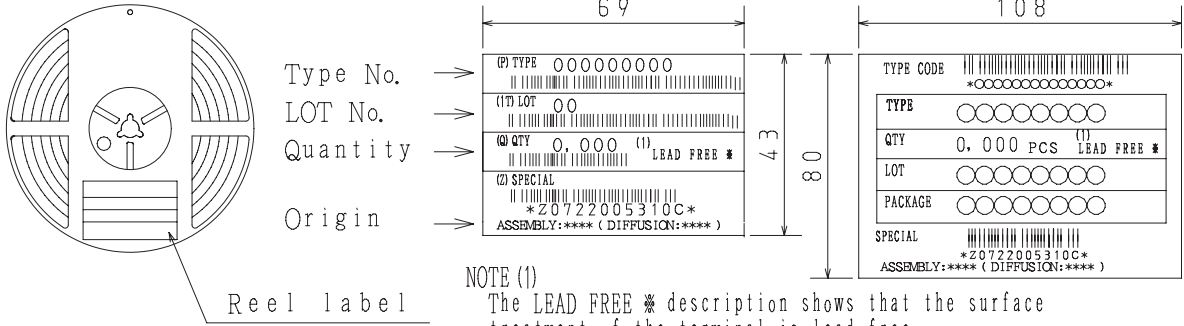
1. Packing Format

| 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) |
| CPH5 | CPH6 | 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, 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.

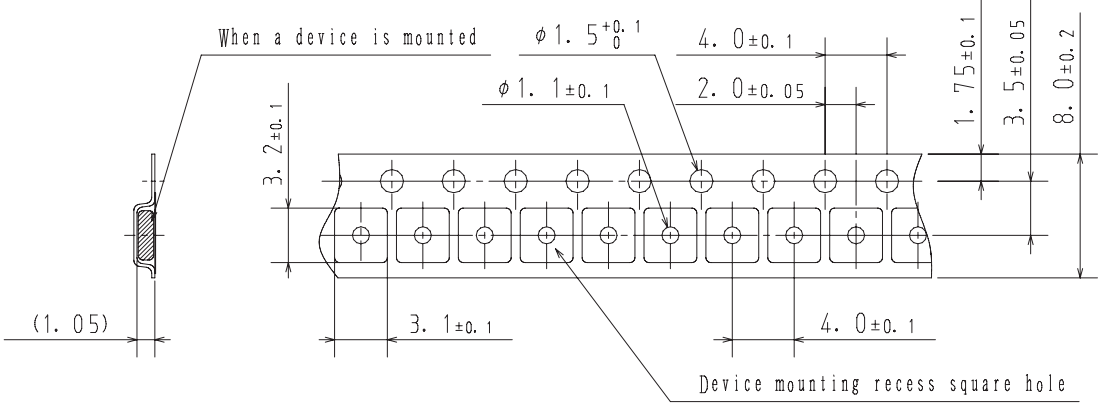


NOTE (1)
The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

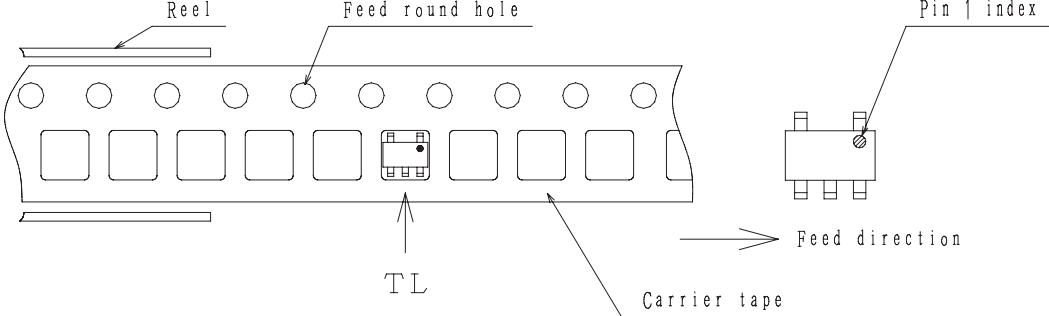
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

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



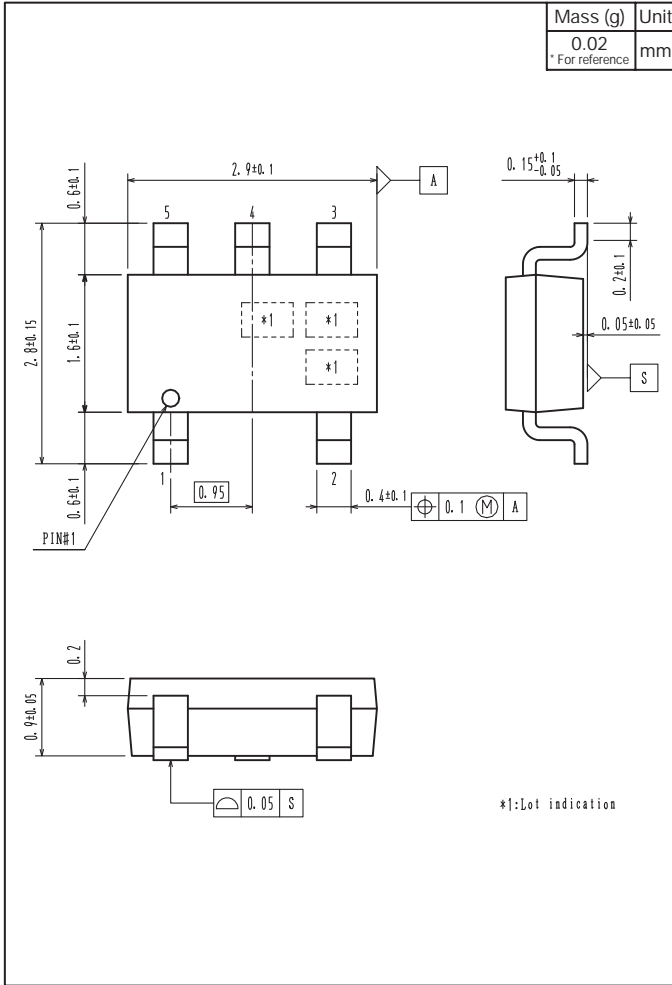
2-2. Device placement direction



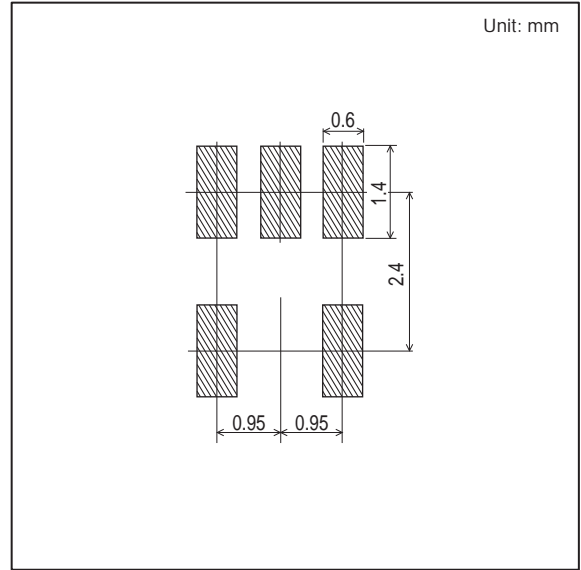
Those with pin 1 index on the feed hole side.....TL

CPH5517

Outline Drawing CPH5517-TL-E



Land Pattern Example



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- Техническая поддержка проекта;
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