



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

PNP Epitaxial Planar Silicon Transistor

CPH6153 — Load Switch Applications

Applications

- Load switch, DC-DC converter, motor drivers, charger

Features

- Adoption of MBIT process
- Large current capacity
- Low collector-to-emitter saturation voltage
- High speed switching
- Ultrasmall-sized package permitting applied sets to be made small and slim (0.9mm)
- High allowable power dissipation
- IECO is guaranteed for preventing reverse flow from the collector to the emitter

Specifications

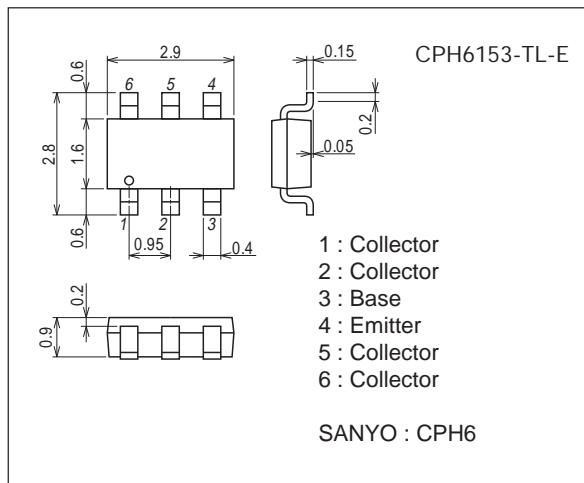
Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|--------|---|-------------|------|
| Collector-to-Base Voltage | VCBO | | -20 | V |
| Collector-to-Emitter Voltage | VCEO | | -20 | 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) | 1.3 | W |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

Package Dimensions

unit : mm (typ)

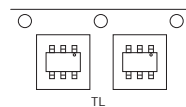
7018A-002



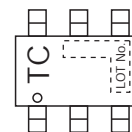
Product & Package Information

- Package : CPH6
- JEITA, JEDEC : SC-74, SOT-26, SOT-457
- Minimum Packing Quantity : 3,000 pcs./reel

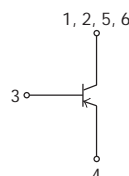
Packing Type: TL



Marking



Electrical Connection



SANYO Semiconductor Co., Ltd.

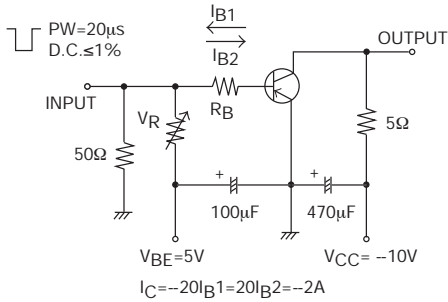
<http://semicon.sanyo.com/en/network>

CPH6153

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

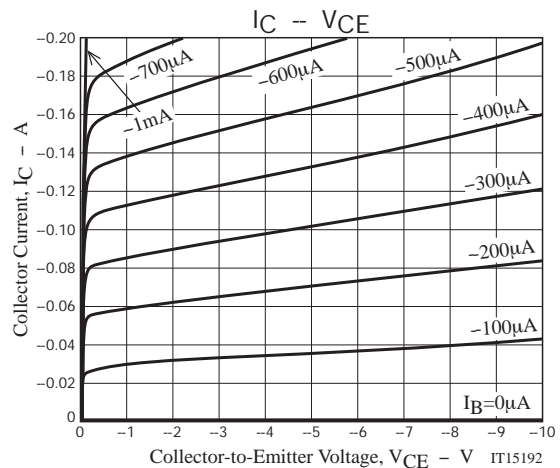
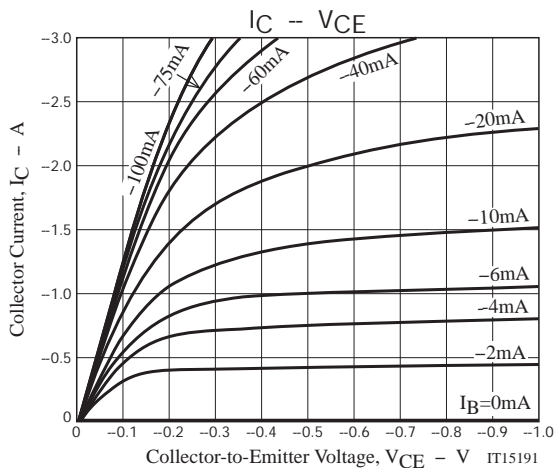
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|---|---------|-------|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = -20\text{V}, I_E = 0\text{A}$ | | | -0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = -4\text{V}, I_C = 0\text{A}$ | | | -0.1 | μA |
| Emitter Cutoff Current | I_{ECO} | $V_{EC} = -4.5\text{V}, I_B = 0\text{A}$ | | | -1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = -2\text{V}, I_C = -100\text{mA}$ | 200 | | 560 | |
| Gain-Bandwidth Product | f_T | $V_{CE} = -10\text{V}, I_C = -300\text{mA}$ | | 400 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = -10\text{V}, f = 1\text{MHz}$ | | 22 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -1.5\text{A}, I_B = -75\text{mA}$ | | -130 | -195 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = -1.5\text{A}, I_B = -75\text{mA}$ | | -0.93 | -1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu\text{A}, I_E = 0\text{A}$ | -20 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1\text{mA}, R_{BE} = \infty$ | -20 | | | 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. | | 35 | | ns |
| Storage Time | t_{stg} | See specified Test Circuit. | | 65 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 12 | | ns |

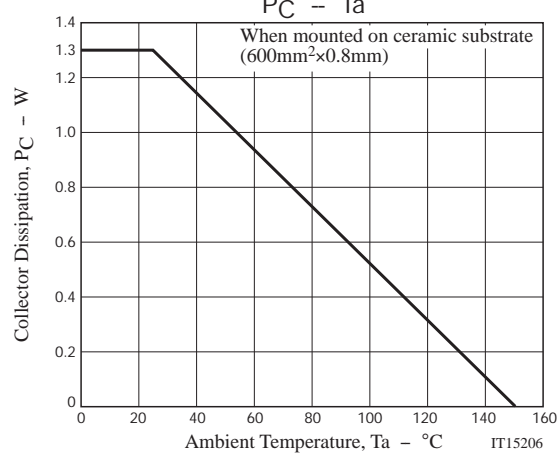
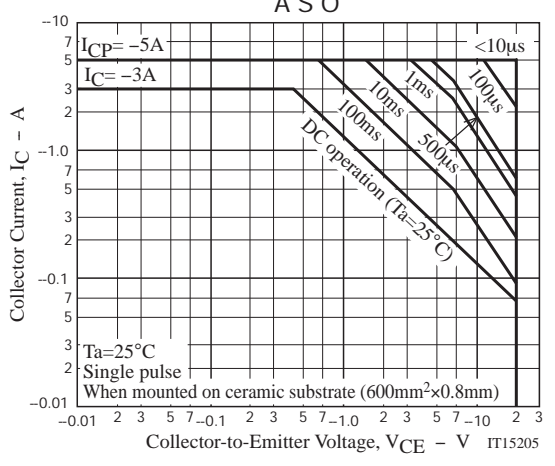
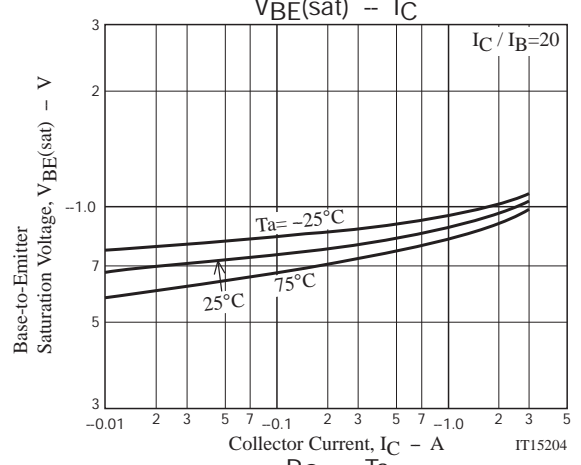
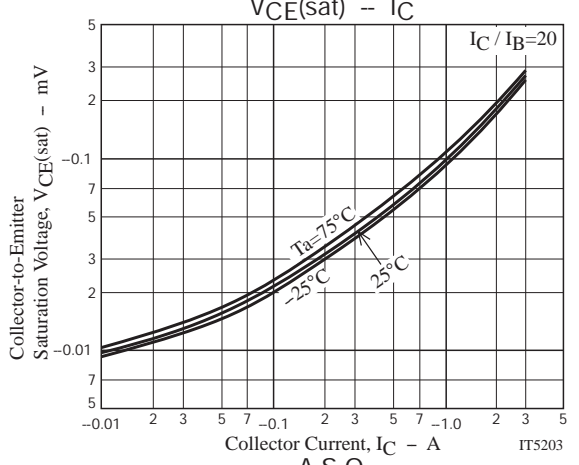
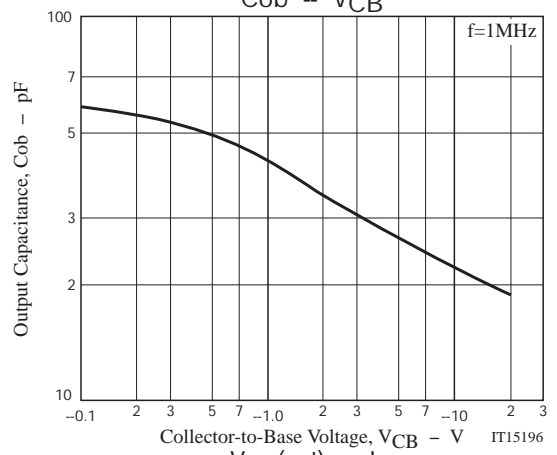
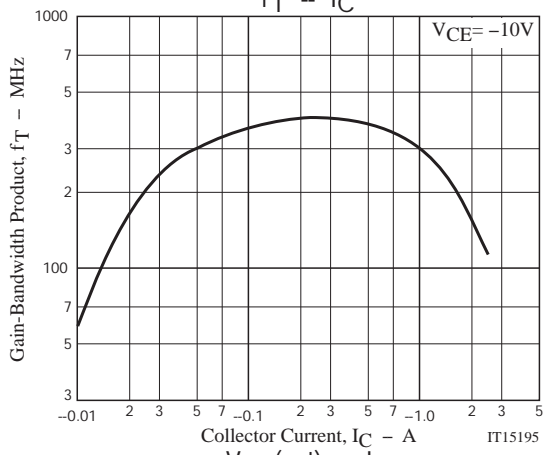
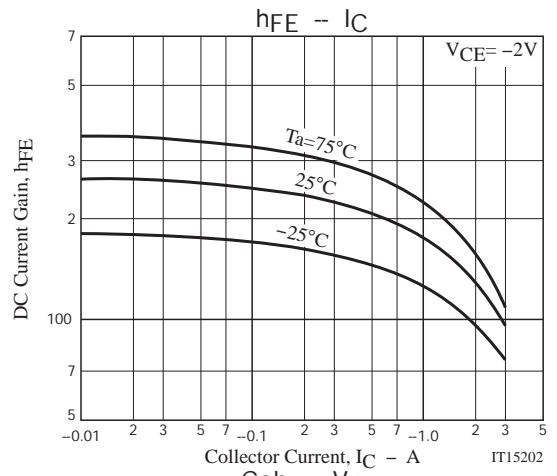
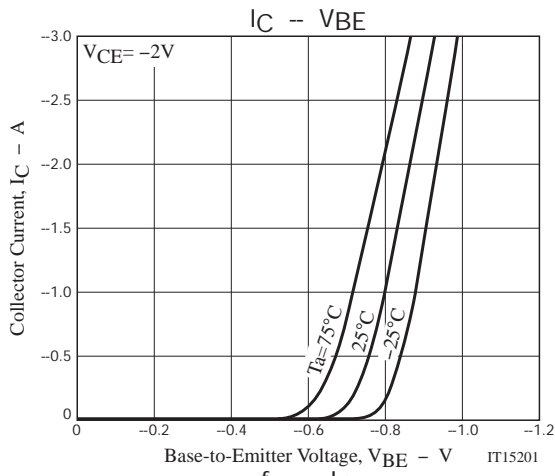
Switching Time Test Circuit



Ordering Information

| Device | Package | Shipping | memo |
|--------------|---------|----------------|---------|
| CPH6153-TL-E | CPH6 | 3,000pcs./reel | Pb Free |



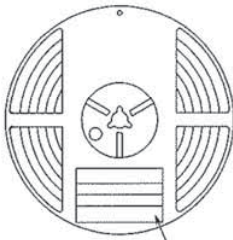


Embossed Taping Specification
CPH6153-TL-E

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) |
| CPH6 | 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

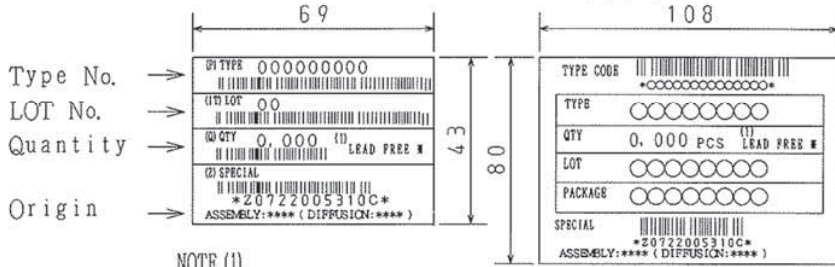


Reel label

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.



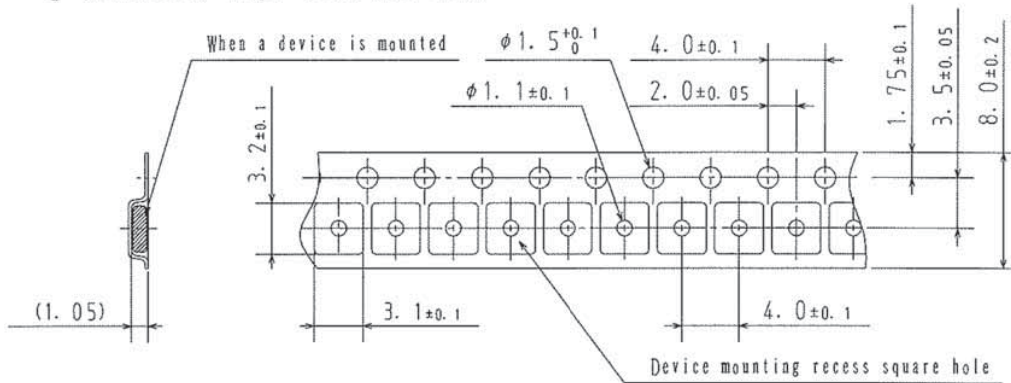
NOTE (1)

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

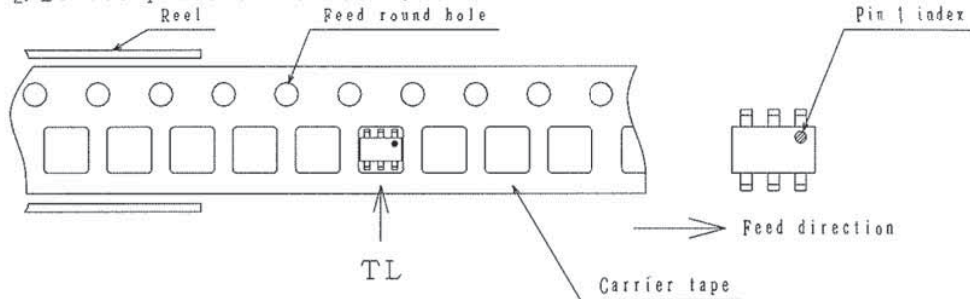
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

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



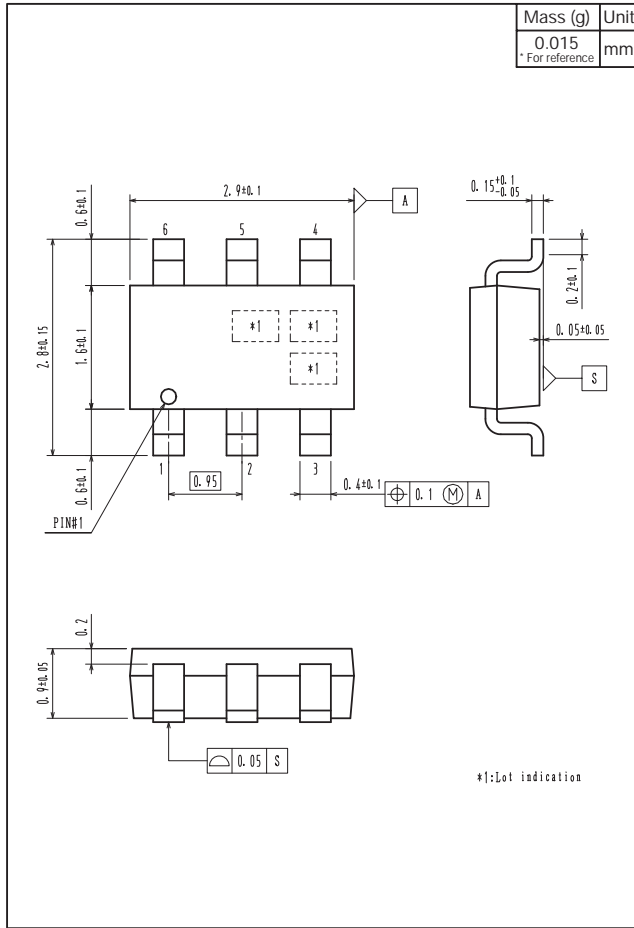
2-2. Device placement direction



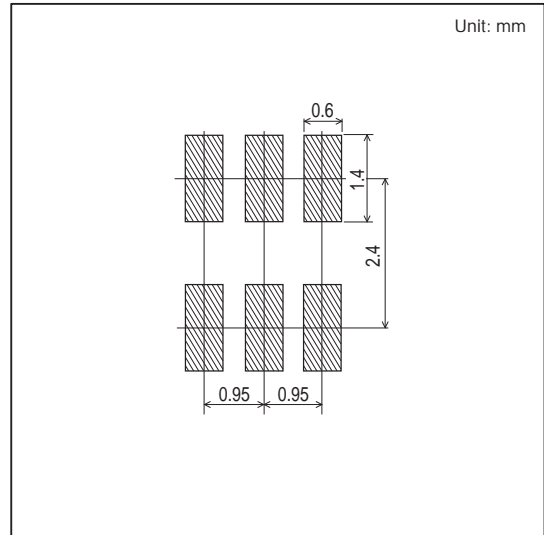
Those with pin 1 index on the feed hole side.....TL

CPH6153

Outline Drawing CPH6153-TL-E



Land Pattern Example



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