



# CPH6531 — PNP Epitaxial Planar Silicon Transistor

## DC / DC Converter Applications

### Applications

- Relay drivers, lamp drivers, motor drivers, flash

### Features

- Composite type with two PNP transistors contained in one package facilitating high-density mounting
- The two chips contained are equivalent to the CPH3116
- Ultrasmall package permitting applied sets to be small and slim

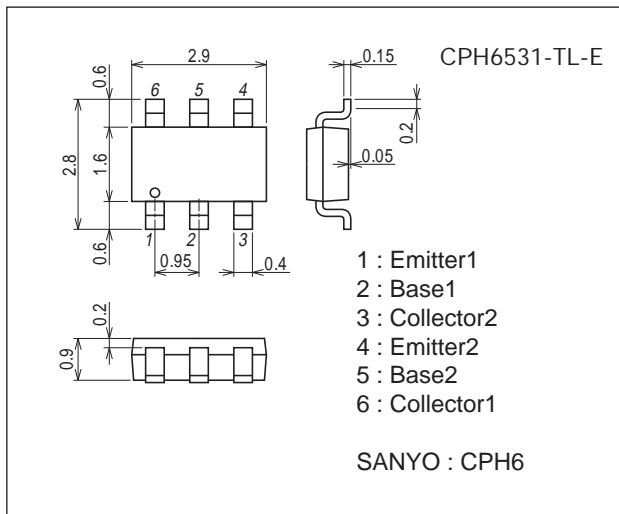
### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-50	V
Collector-to-Emitter Voltage	VCES		-50	V
Collector-to-Emitter Voltage	VCEO		-50	V
Emitter-to-Base Voltage	VEBO		-5	V
Collector Current	IC		-1.0	A
Collector Current (Pulse)	ICP		-2	A
Base Current	IB		-200	mA
Collector Dissipation	PC	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm) 1unit	0.9	W
Total Power Dissipation	PT	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm)	1.1	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Package Dimensions

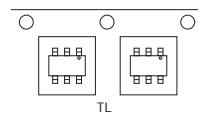
unit : mm (typ)  
7018A-006



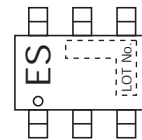
### Product & Package Information

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

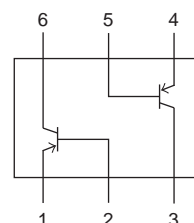
### Packing Type: TL



### Marking



### Electrical Connection

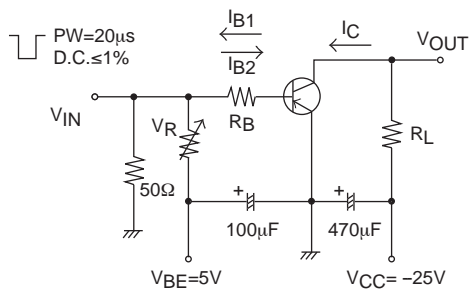


# CPH6531

## 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	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-0.1	$\mu\text{A}$
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	$C_{ob}$	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		9		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -500\text{mA}, I_B = -10\text{mA}$		-230	-380	mV
	$V_{CE(sat)2}$	$I_C = -300\text{mA}, I_B = -6\text{mA}$		-125	-200	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -10\text{mA}$		-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			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -100\mu\text{A}, R_{BE} = 0\Omega$	-50			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.		35		ns
Storage Time	$t_{stg}$			170		ns
Fall Time	$t_f$			30		ns

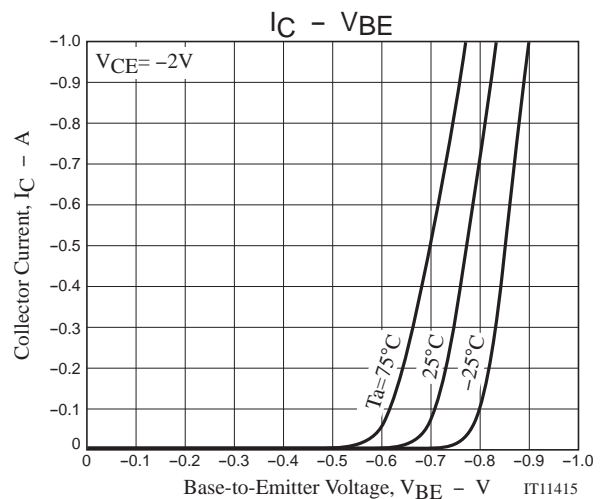
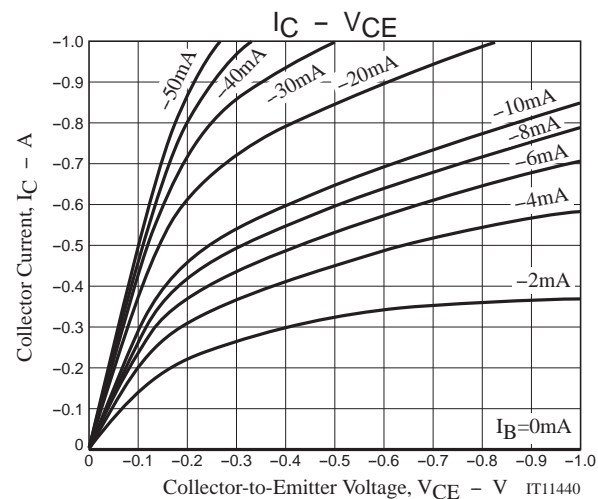
## Switching Time Test Circuit

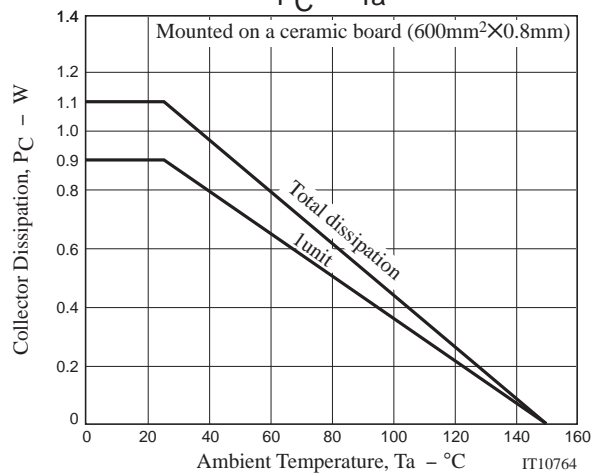
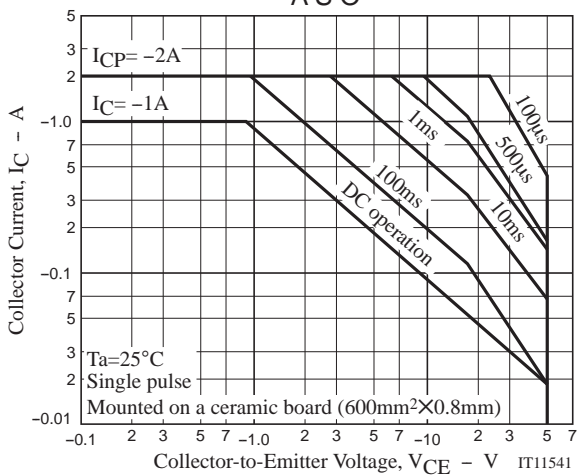
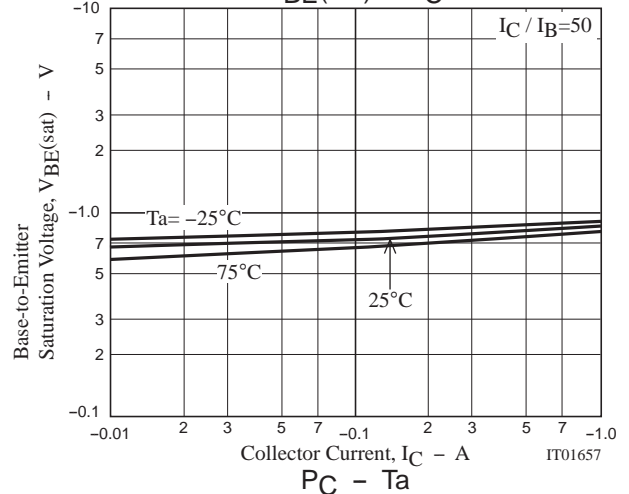
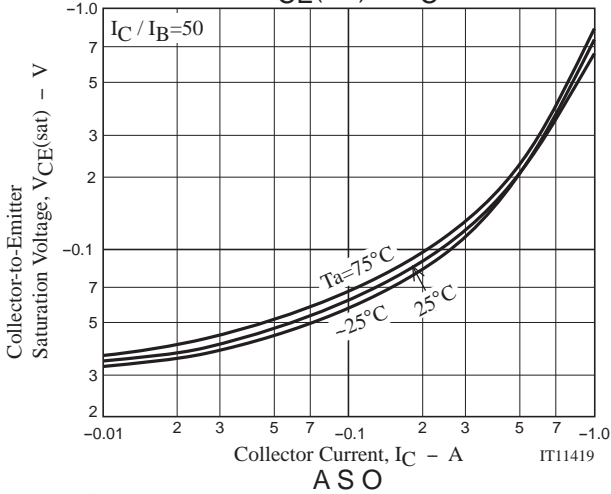
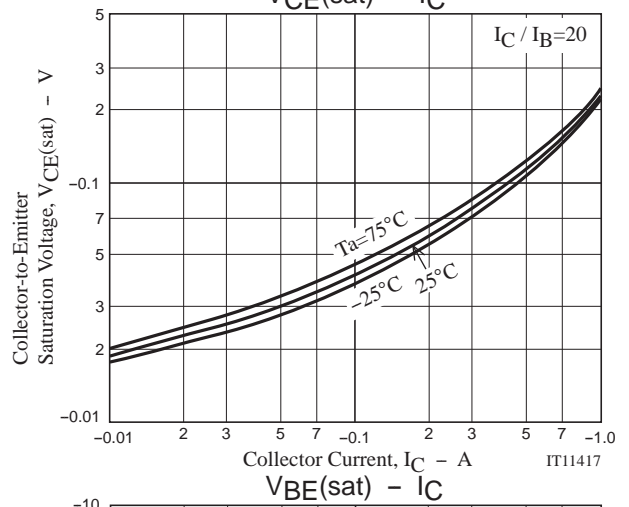
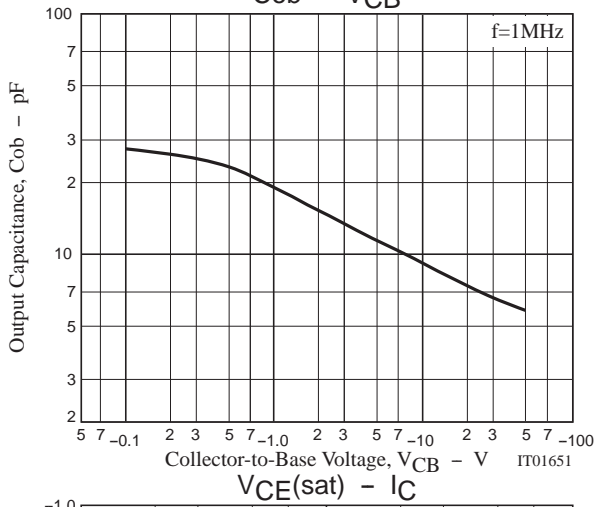
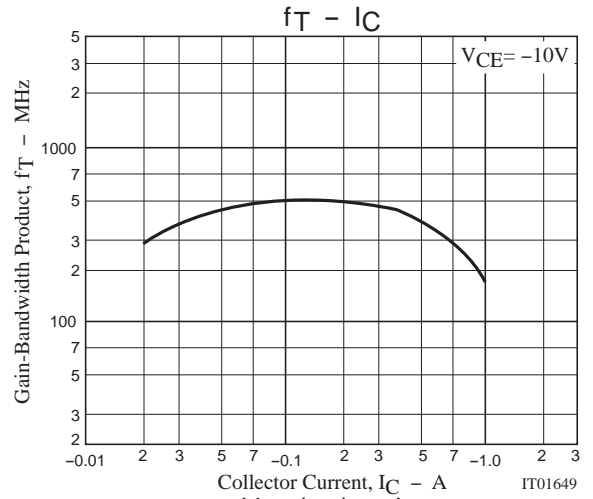
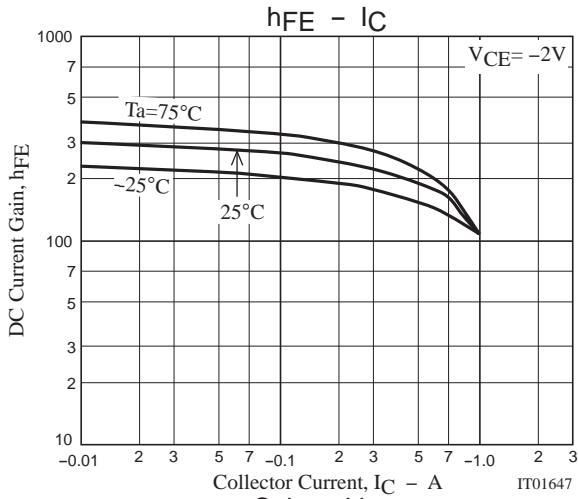


$$20I_{B1} = -20I_{B2} = I_C = -500\text{mA}$$

## Ordering Information

Device	Package	Shipping	memo
CPH6531-TL-E	CPH6	3,000pcs./reel	Pb Free





Embossed Taping Specification

CPH6531-TL-E

1. Packing Format

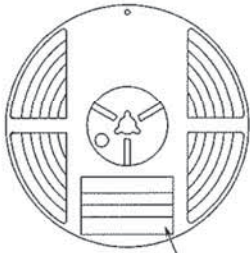
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH6	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label  
(unit:mm)

Outer box label

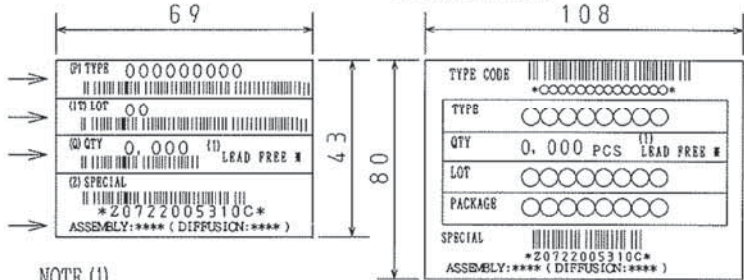
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

Packing method



Reel label

Type No.  
LOT No.  
Quantity  
Origin



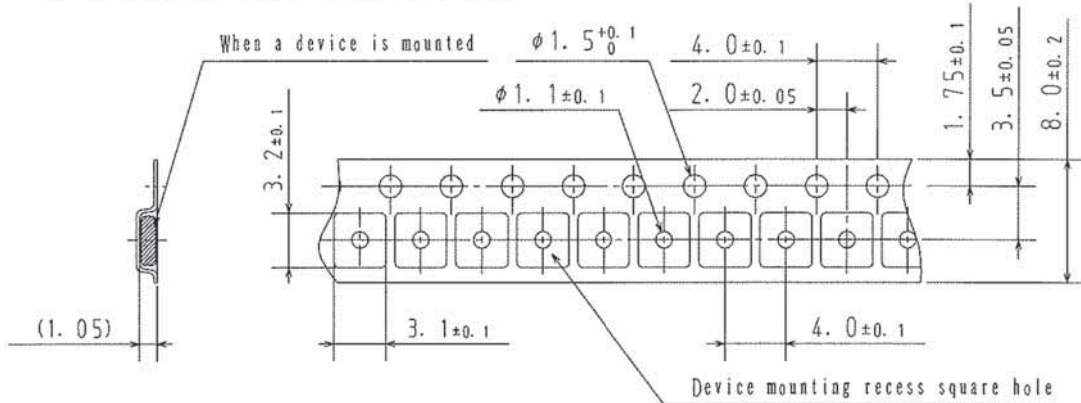
NOTE (1)

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

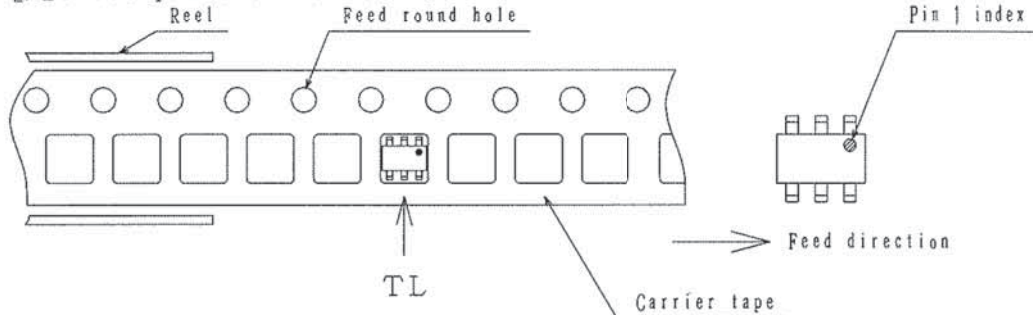
2. Taping configuration

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



Device mounting recess square hole

2-2. Device placement direction

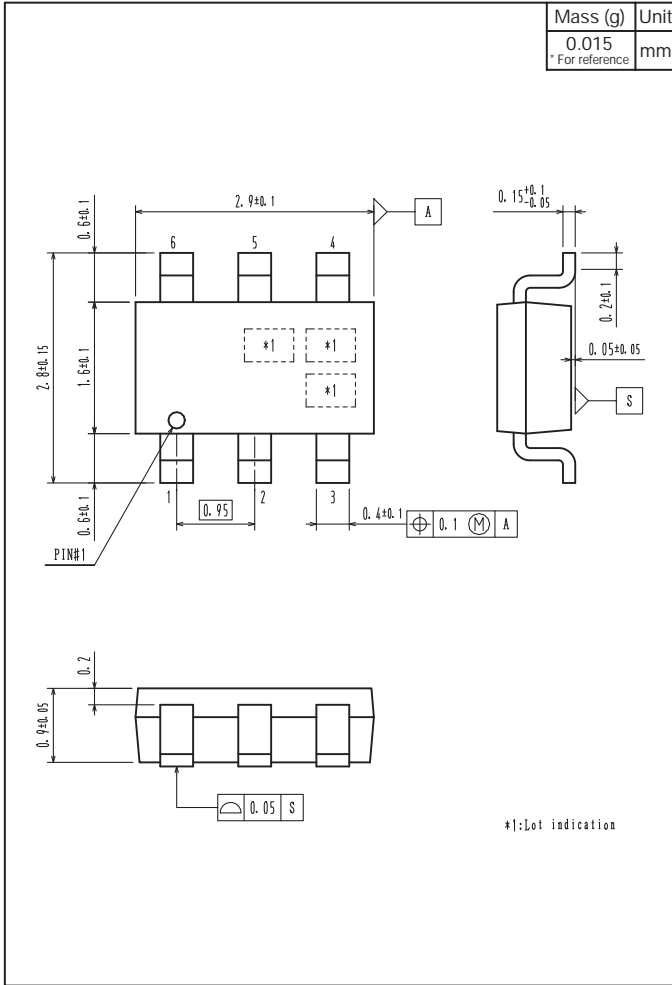


Those with pin 1 index on the feed hole side.....TL

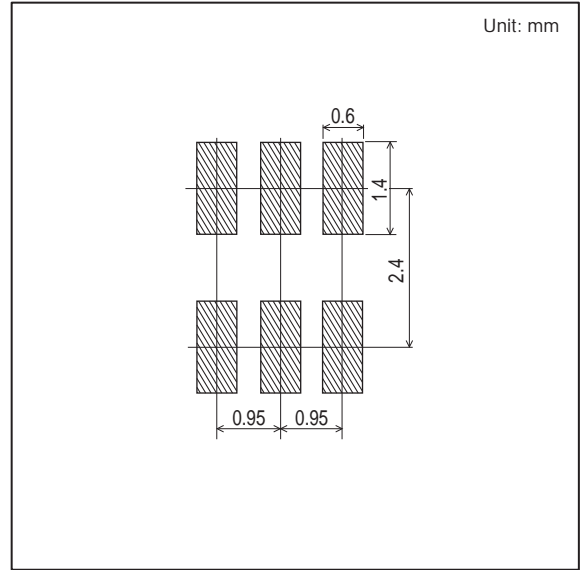
# CPH6531

## Outline Drawing

CPH6531-TL-E



## Land Pattern Example



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