



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## CPH3114 — PNP Epitaxial Planar Silicon Transistor DC / DC Converter Applications

### Applications

- Relay drivers, lamp drivers, motor drivers, flash

### Features

- Adoption of MBIT processes
- Large current capacity
- Low collector-to-emitter saturation voltage
- High-speed switching
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm)
- High allowable power dissipation

### Specifications

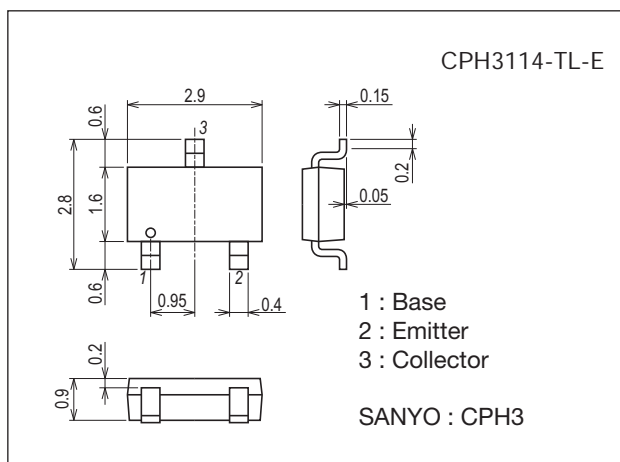
#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-15	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-15	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-5	V
Collector Current	I <sub>C</sub>		-1.5	A
Collector Current (Pulse)	I <sub>CP</sub>		-3	A
Base Current	I <sub>B</sub>		-300	mA
Collector Dissipation	P <sub>C</sub>	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm)	0.9	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

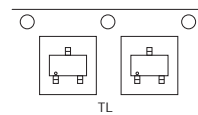
7015A-003



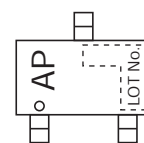
### Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

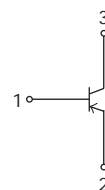
### Packing Type: TL



### Marking



### Electrical Connection



**SANYO Semiconductor Co., Ltd.**

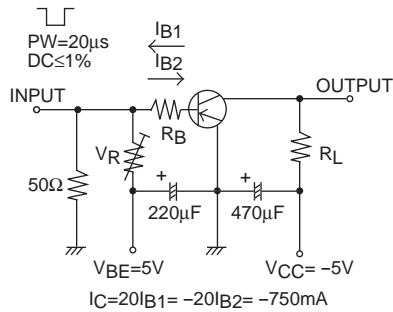
<http://www.sanyosemi.com/en/network/>

# CPH3114

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

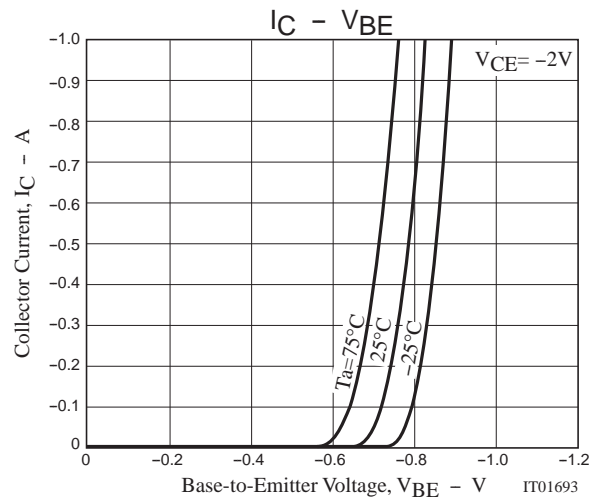
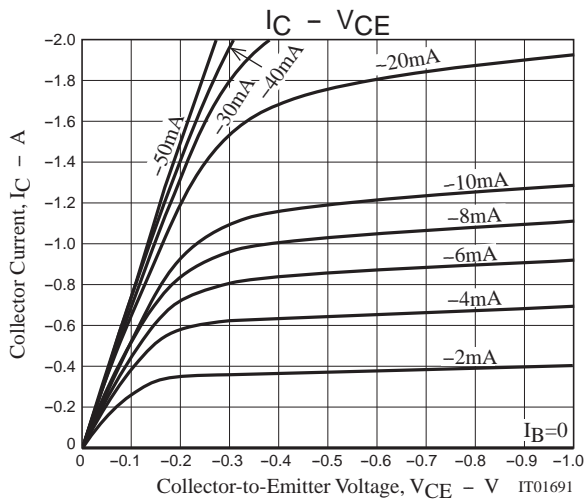
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -12\text{V}, I_E = 0\text{A}$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = -2\text{V}, I_C = -100\text{mA}$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE} = -2\text{V}, I_C = -300\text{mA}$		350		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		17		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -750\text{mA}, I_B = -15\text{mA}$		-120	-180	mV
	$V_{CE(sat)2}$	$I_C = -1.5\text{mA}, I_B = -30\text{mA}$		-210	-320	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -750\text{mA}, I_B = -15\text{mA}$		-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	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-15			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.		50		ns
Storage Time	$t_{stg}$			90		ns
Fall Time	$t_f$			15		ns

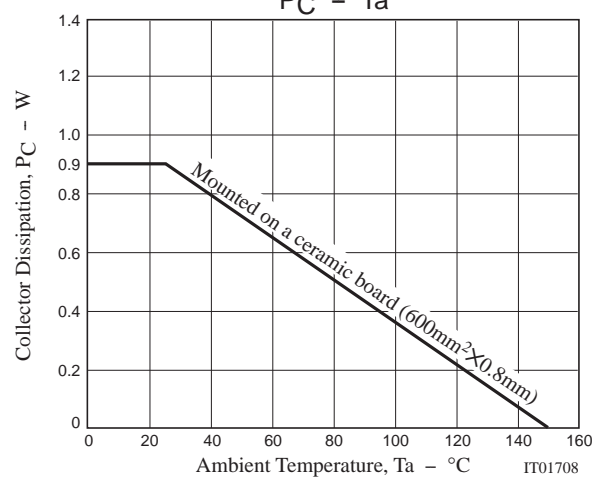
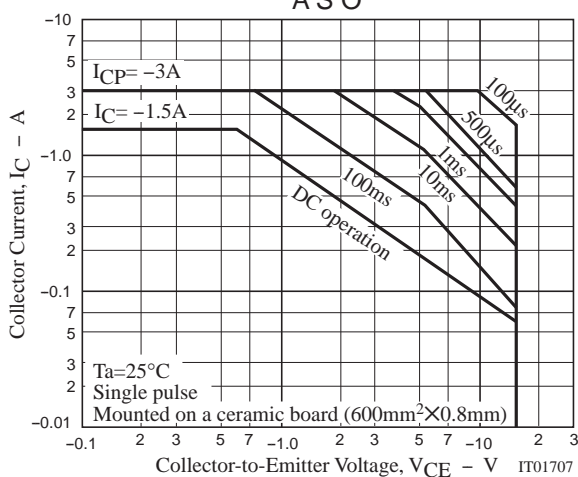
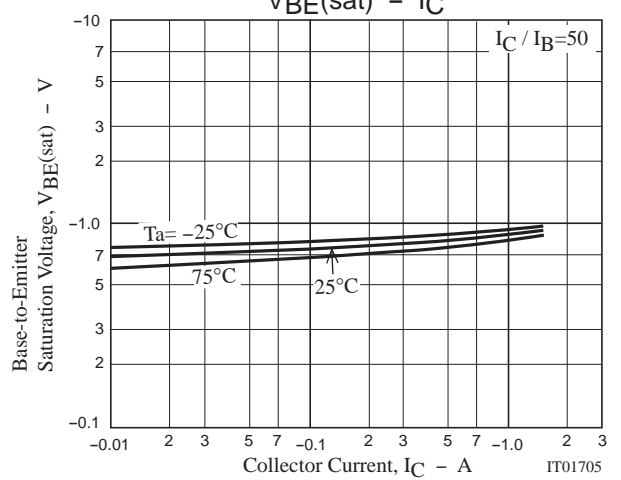
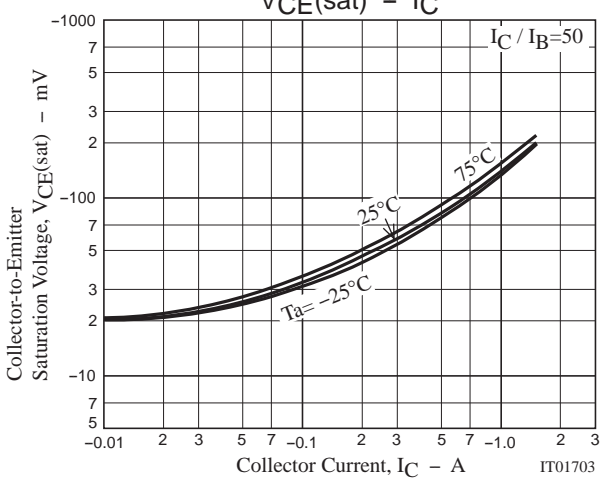
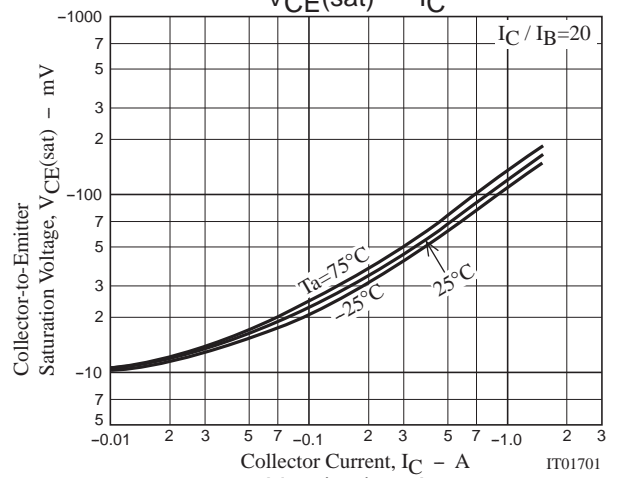
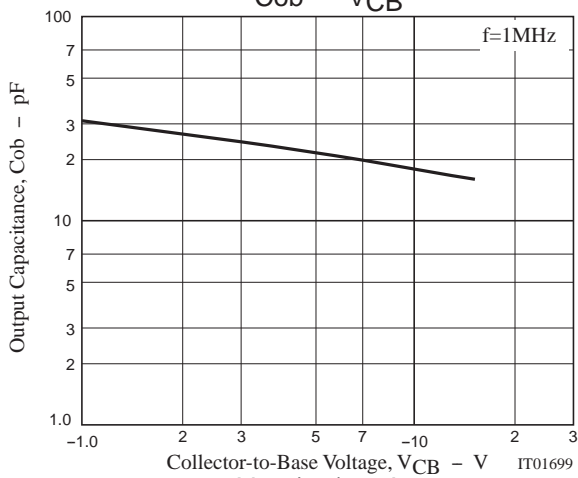
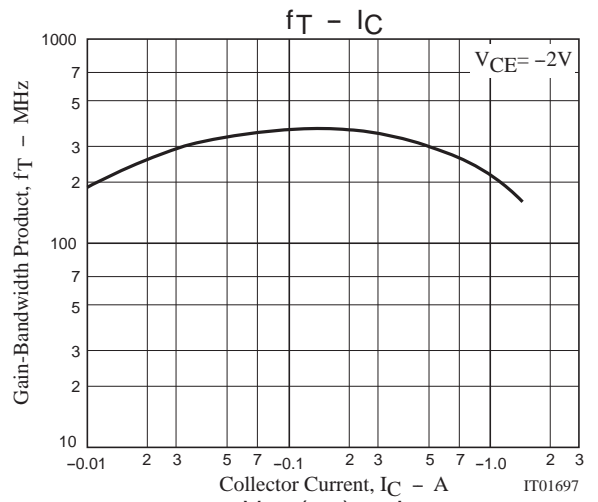
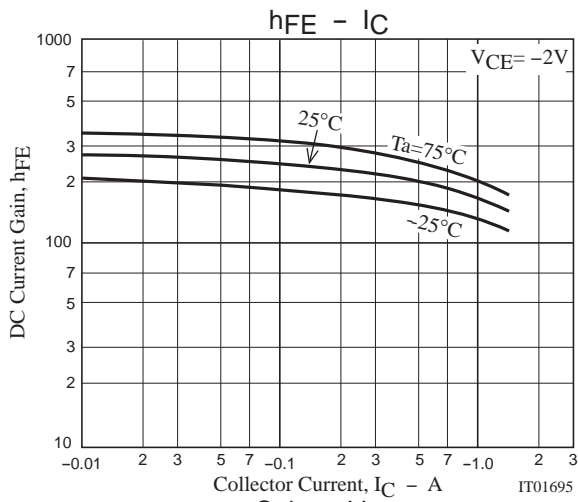
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
CPH3114-TL-E	CPH3	3,000pcs./reel	Pb Free





Embossed Taping Specification

CPH3114-TL-E

1. Packing Format

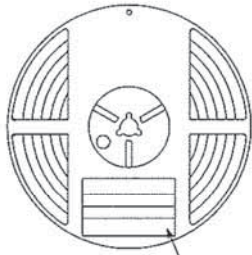
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH3	CPH3	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label  
(unit:mm)

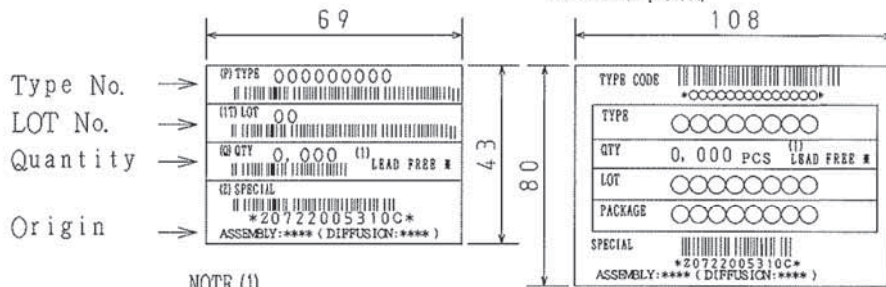
Outer box label

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



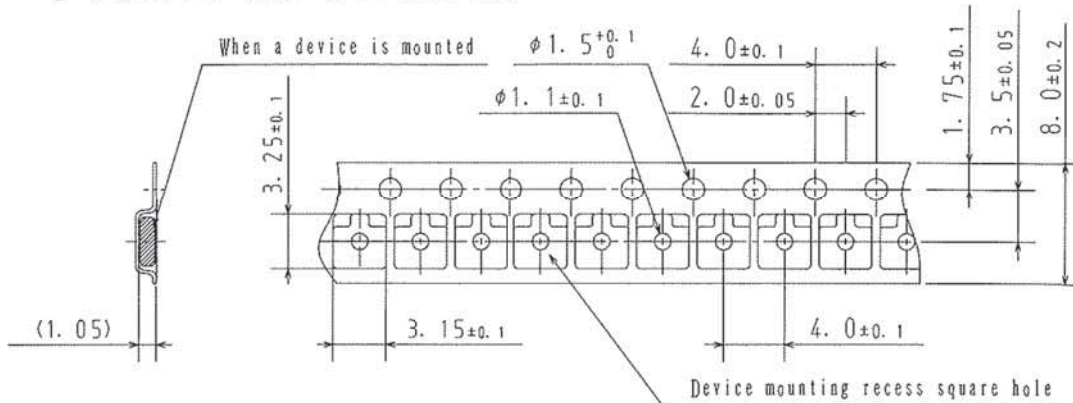
NOTE (1)

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

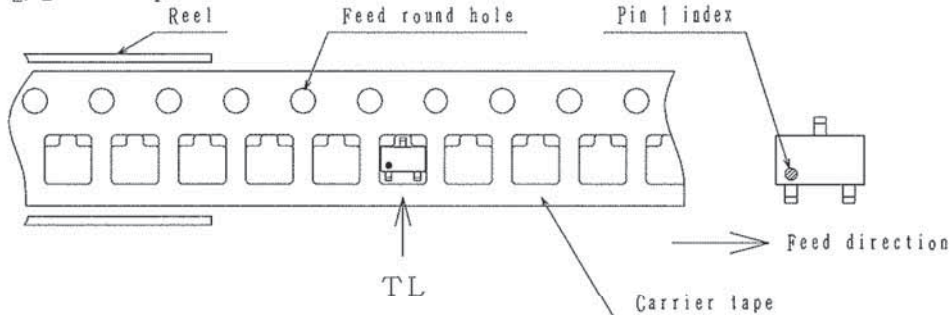
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

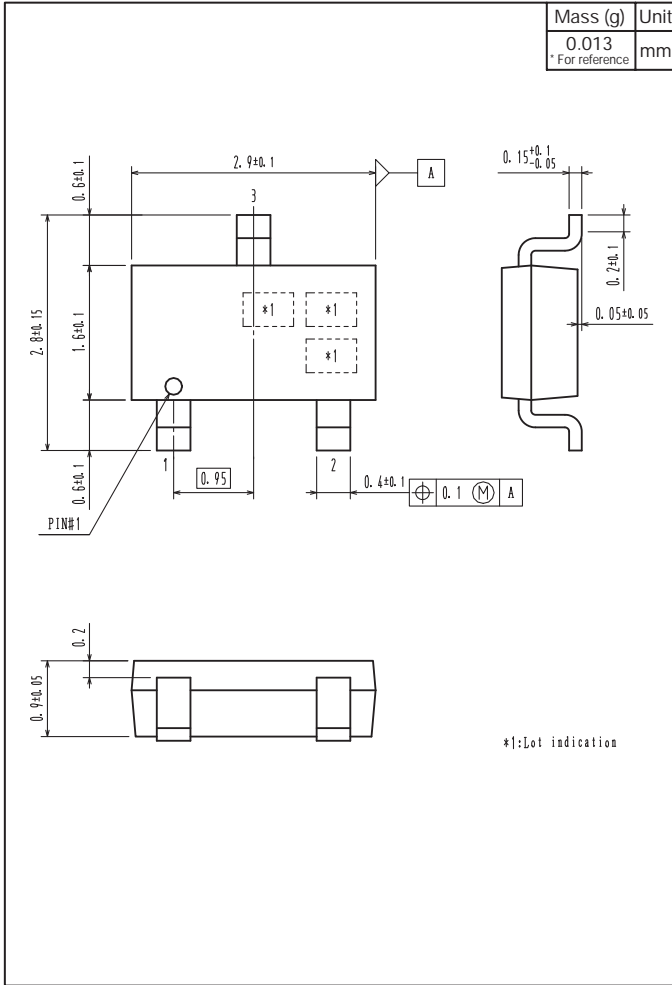


Those with one electrode terminal on the feed hole side.....TL

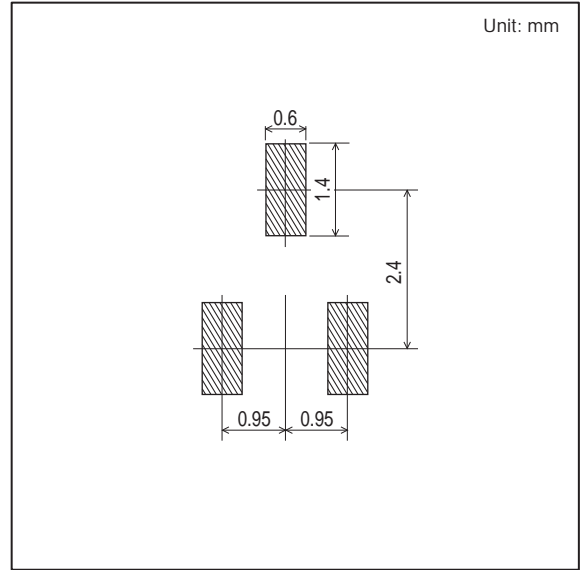
# CPH3114

## Outline Drawing

CPH3114-TL-E



## Land Pattern Example



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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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