



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

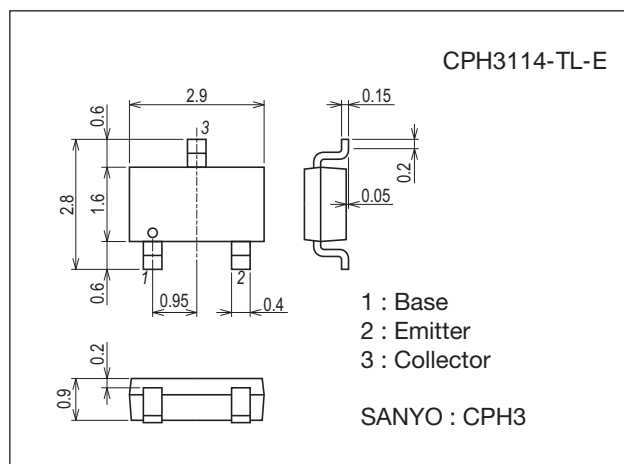
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-15	V
Collector-to-Emitter Voltage	VCEO		-15	V
Emitter-to-Base Voltage	VEBO		-5	V
Collector Current	IC		-1.5	A
Collector Current (Pulse)	ICP		-3	A
Base Current	IB		-300	mA
Collector Dissipation	PC	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm)	0.9	W
Junction Temperature	TJ		150	°C
Storage Temperature	Tstg		-55 to +150	°C

#### Package Dimensions

unit : mm (typ)

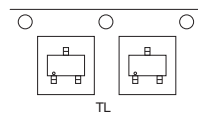
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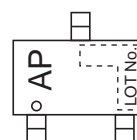
#### Product & Package Information

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

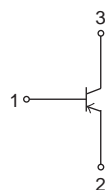
#### Packing Type: TL



#### Marking



#### Electrical Connection

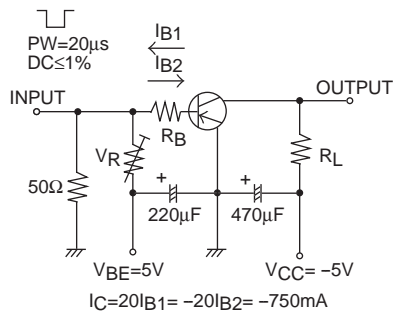


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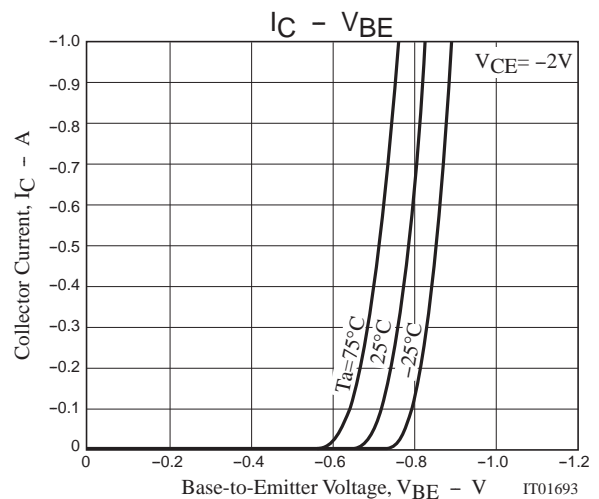
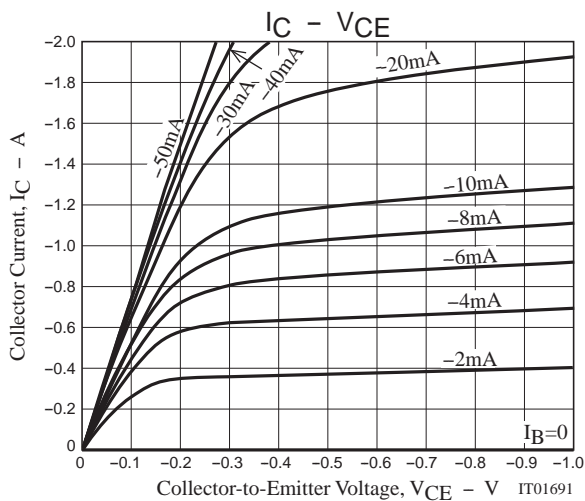
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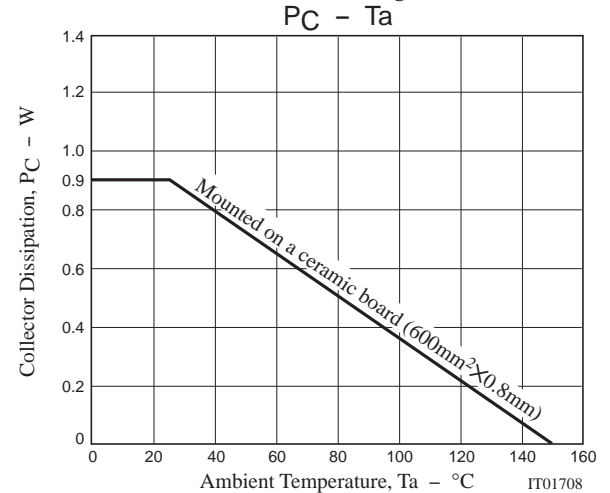
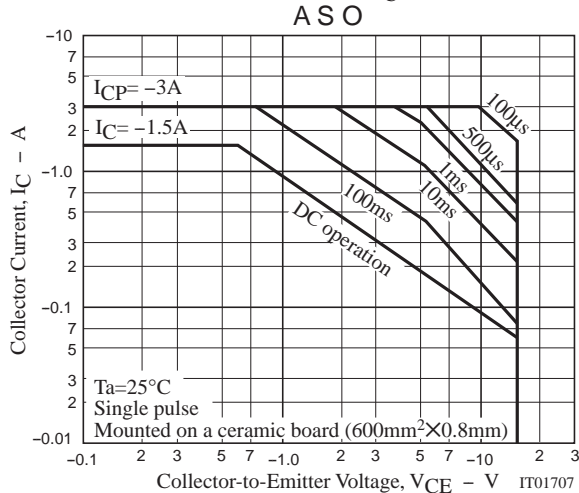
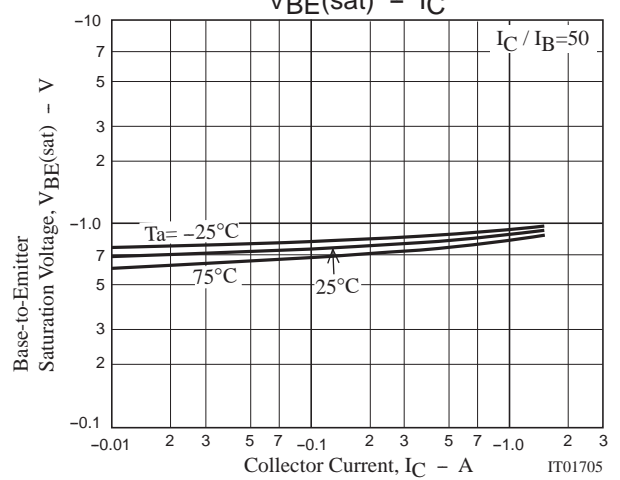
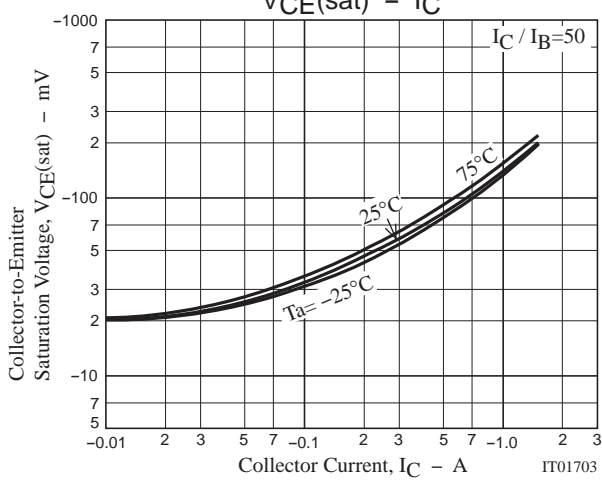
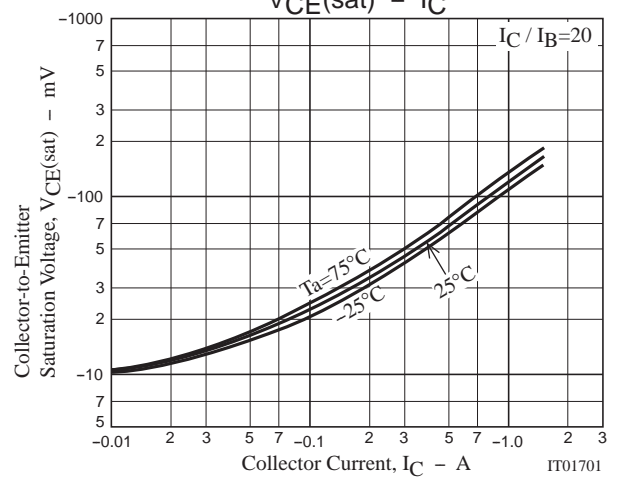
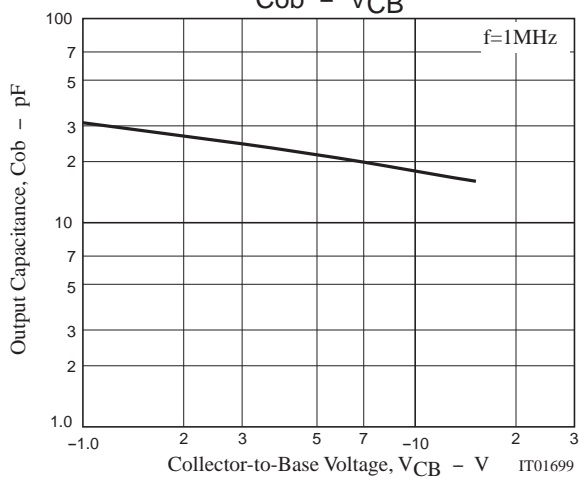
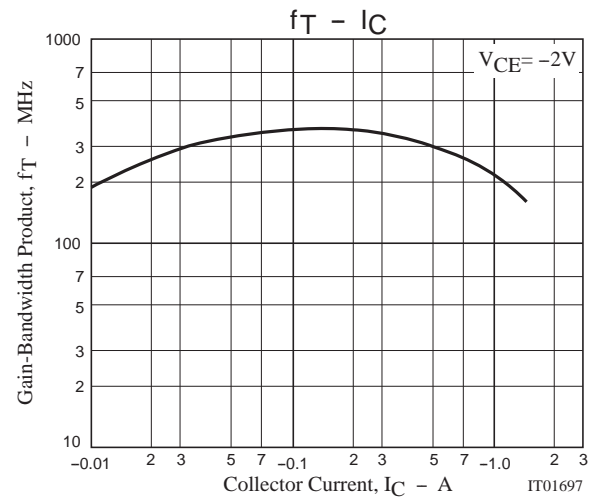
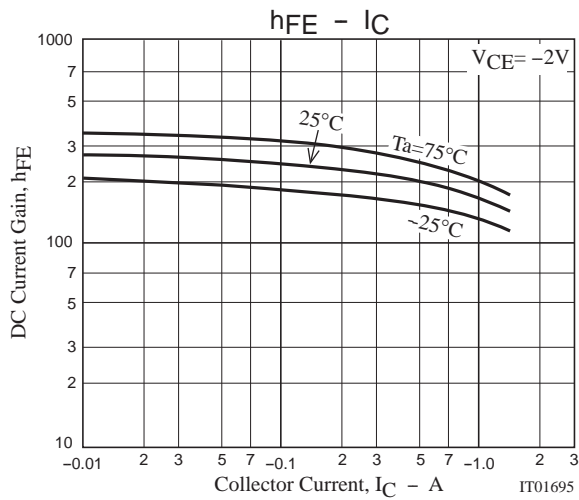
**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

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





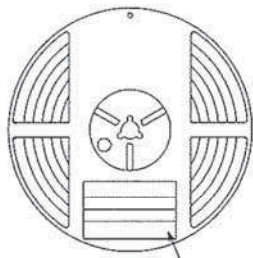
## Embossed Taping Specification

CPH3114-TL-E

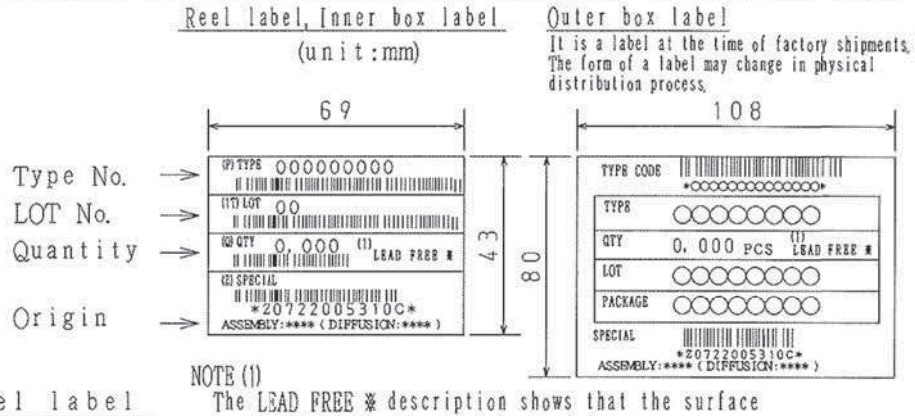
## 1. Packing Format

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

## Packing method

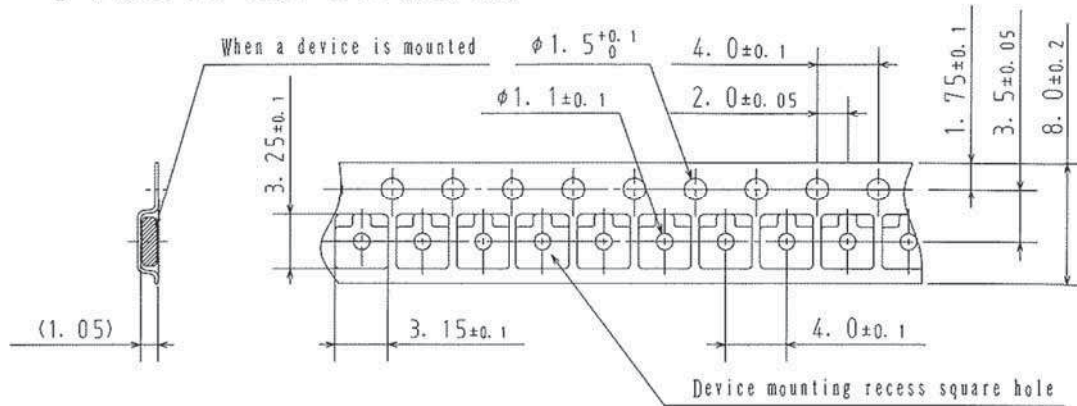


Reel label

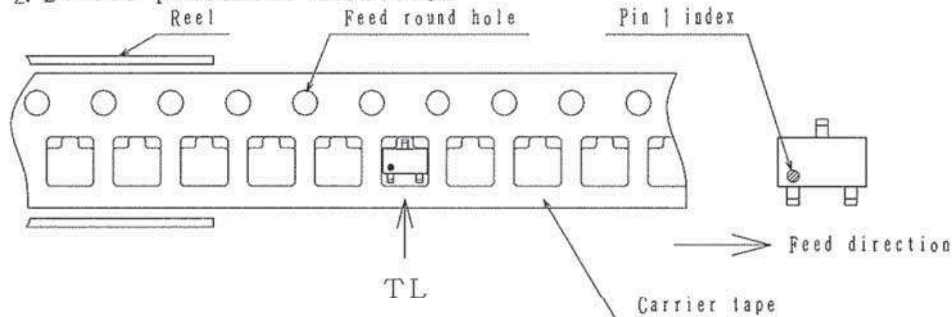


## 2. Taping configuration

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



## 2-2. Device placement direction



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



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