



# CPH6539 — NPN Epitaxial Planar Silicon Transistor

## DC / DC Converter Applications

### Features

- Small-sized package with two NPN transistors (CPH3215 equivalency) contained in one package
- $V_{CE0}=30V$ ,  $I_C=1.5A$
- Low Collector-to-Emitter Saturation Voltage  $V_{CE(sat)}=0.16V(\text{typ.})@I_C=0.75A$
- High-speed switching  $t_f=30ns(\text{typ.})@I_C=0.75A$
- Halogen free Compliance

### Specifications

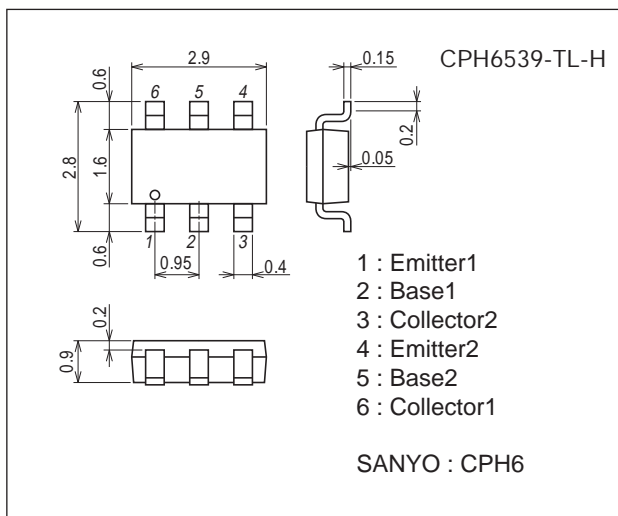
Absolute Maximum Ratings at  $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		40	V
Collector-to-Emitter Voltage	$V_{CEO}$		30	V
Emitter-to-Base Voltage	$V_{EBO}$		5	V
Collector Current	$I_C$		1.5	A
Collector Current (Pulse)	$I_{CP}$		3	A
Base Current	$I_B$		300	mA
Collector Dissipation	$P_C$	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm)	0.9	W
Total Power Dissipation	$P_T$	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm)	1.2	W
Junction Temperature	$T_j$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

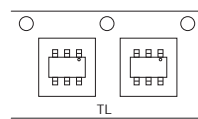
7018A-006



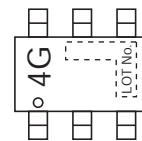
### Product & Package Information

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

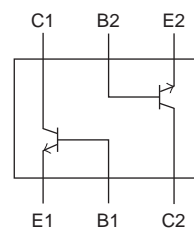
### Packing Type: TL



### Marking



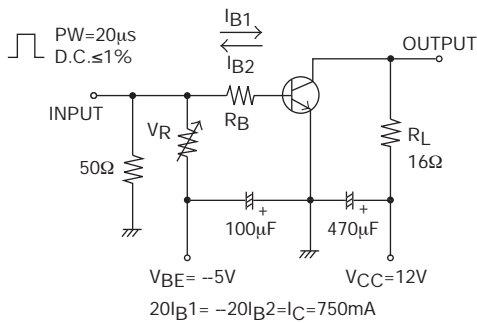
### Electrical Connection



Electrical Characteristics at Ta=25°C

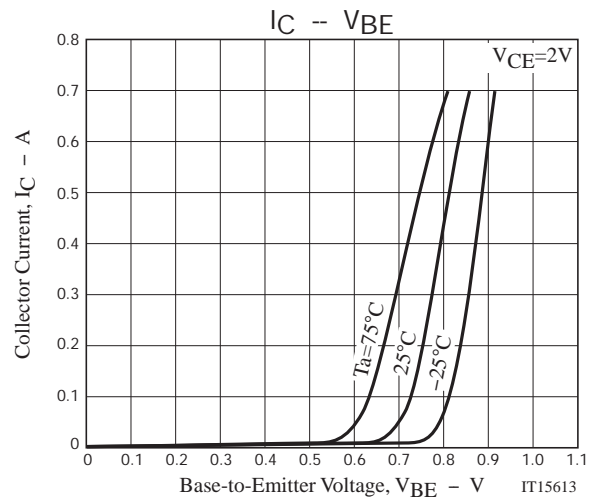
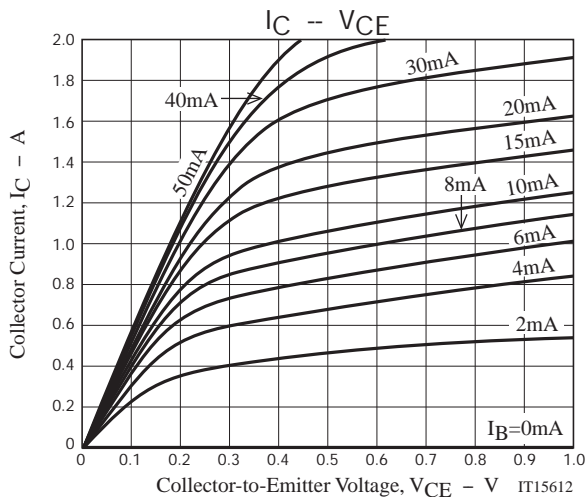
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =30V, I <sub>E</sub> =0A			0.1	μA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =4V, I <sub>C</sub> =0A			0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =100mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =300mA		500		MHz
Output Capacitance	Cob	V <sub>CB</sub> =10V, f=1MHz		8		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =750mA, I <sub>B</sub> =15mA		160	250	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =750mA, I <sub>B</sub> =15mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0A	40			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	30			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0A	5			V
Turn-On Time	t <sub>on</sub>	See specified Test Circuit.		35		ns
Storage Time	t <sub>stg</sub>			205		ns
Fall Time	t <sub>f</sub>			30		ns

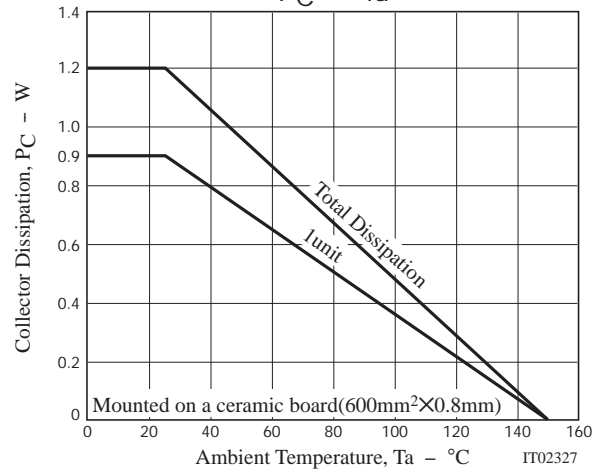
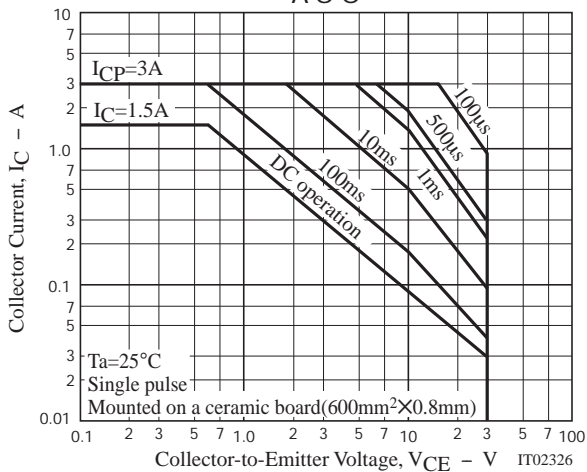
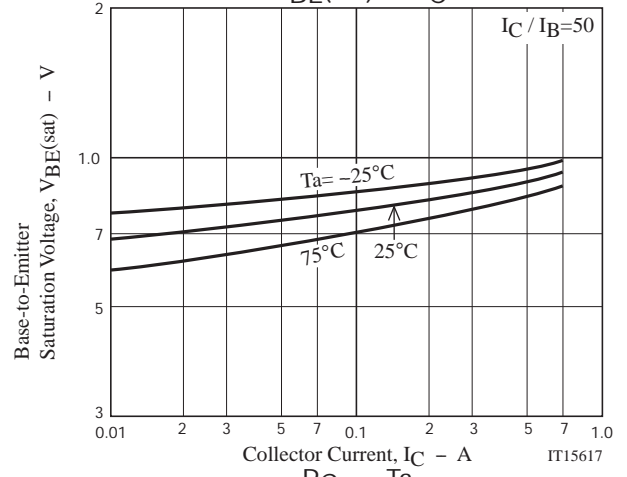
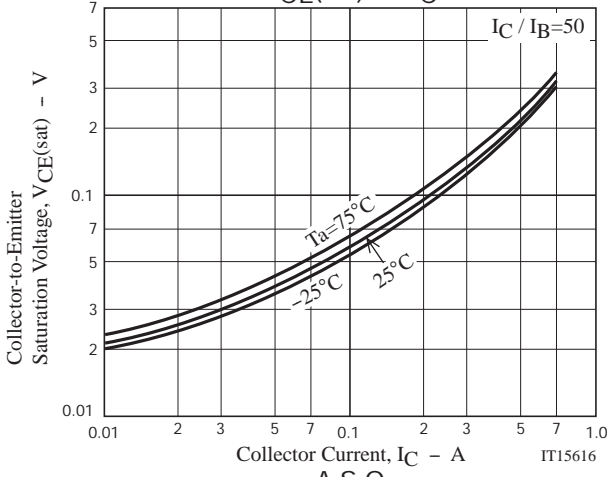
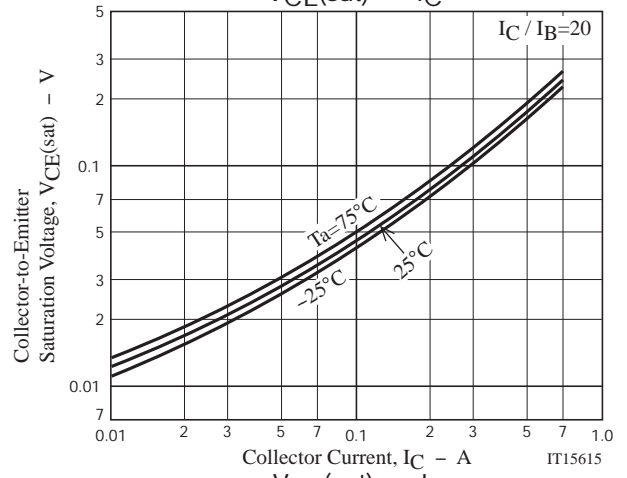
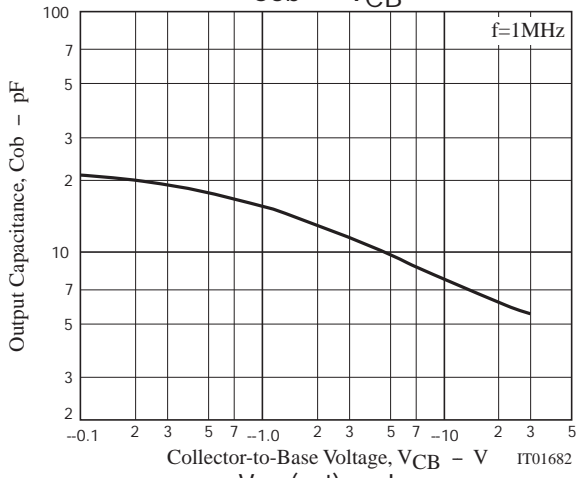
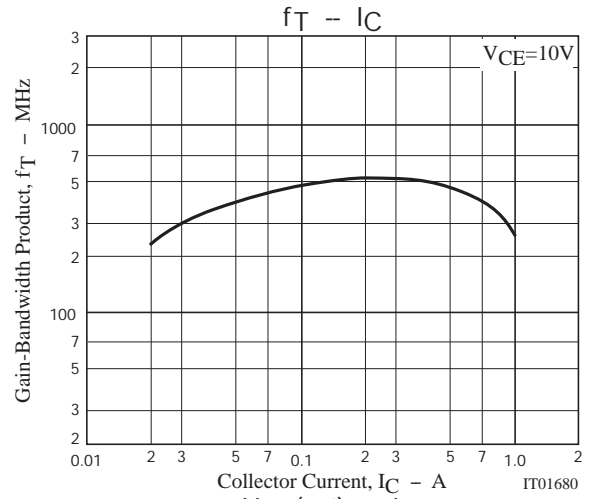
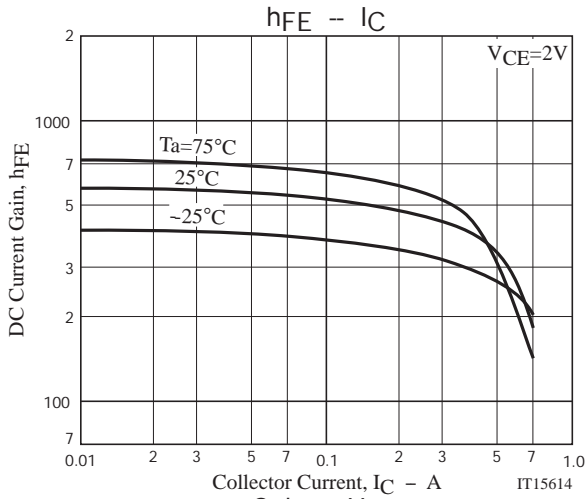
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
CPH6539-TL-H	CPH6	3,000pcs./reel	Pb Free and Halogen Free



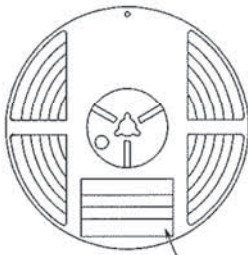


Embossed Taping Specification  
CPH6539-TL-H

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

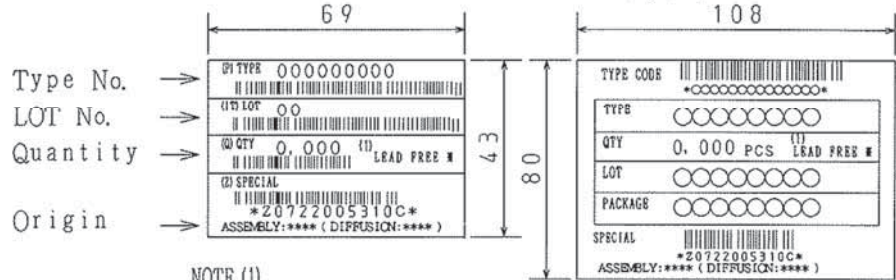


Reel label

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.



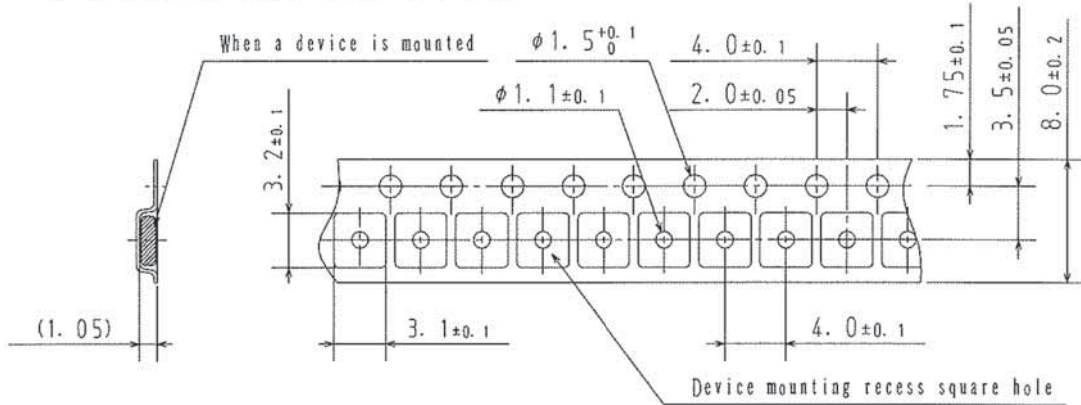
NOTE (1)

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

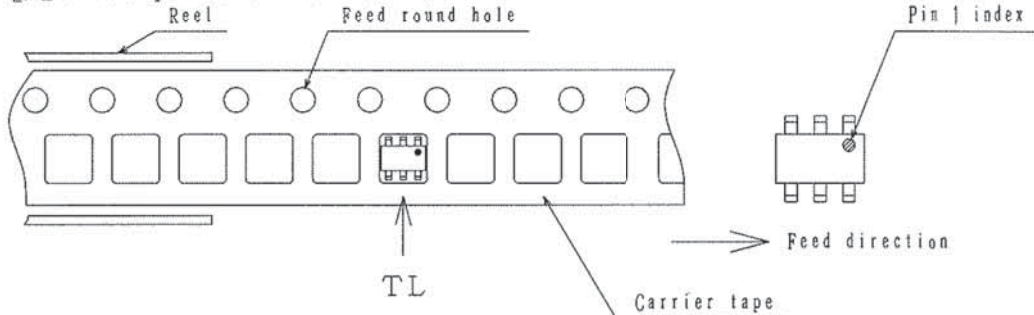
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



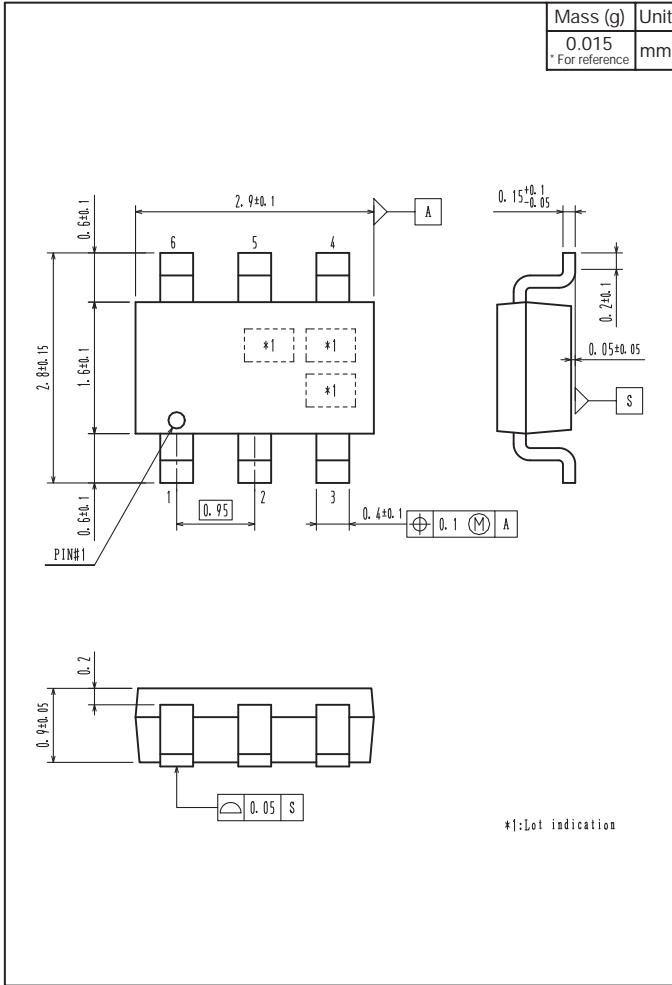
2-2. Device placement direction



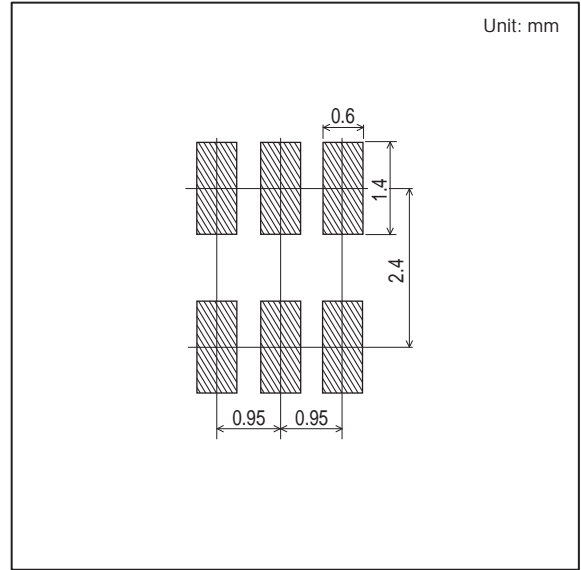
Those with pin 1 index on the feed hole side.....TL

# CPH6539

## Outline Drawing CPH6539-TL-H



## Land Pattern Example



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