



CPH5504

Bipolar Transistor 50V, 3A, Low $V_{CE(sat)}$ NPN Dual CPH5

ON Semiconductor®

<http://onsemi.com>

Applications

- DC-DC converter, relay drivers, lamp drivers, motor drivers, flash

Features

- Composite type with 2 NPN transistors in one package facilitating high-density mounting
- The CPH5504 is composed of 2 chips each equivalent to the CPH3205
- Ultrasmall package facilitates miniaturization in end products. (mounting height : 0.9mm)

Specifications

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

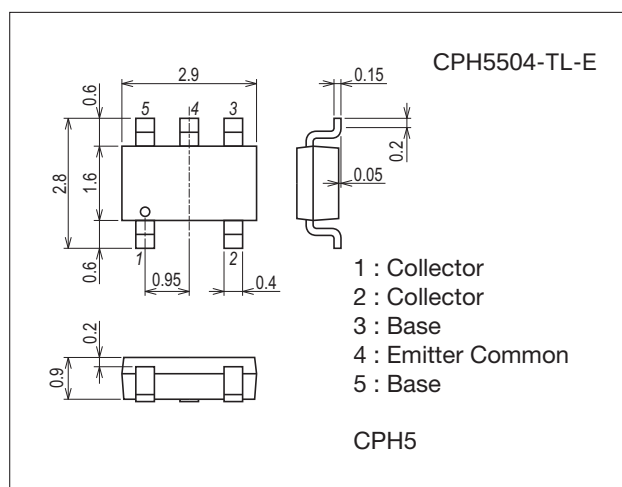
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		100	V
Collector-to-Emitter Voltage	V_{CES}		100	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}		6	A
Base Current	I_B		600	mA
Collector Dissipation	P_C	Mounted on a ceramic board (600mm ² ×0.8mm)	0.9	W
Total Power Dissipation	P_T	Mounted on a ceramic board (600mm ² ×0.8mm)	1.2	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

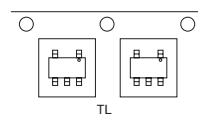
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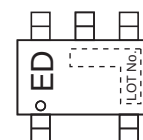
Product & Package Information

- Package : CPH5
- JEITA, JEDEC : SC-74A, SOT-25
- Minimum Packing Quantity : 3,000 pcs./reel

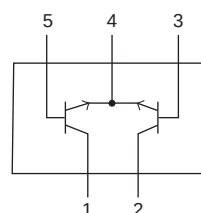
Packing Type : TL



Marking



Electrical Connection

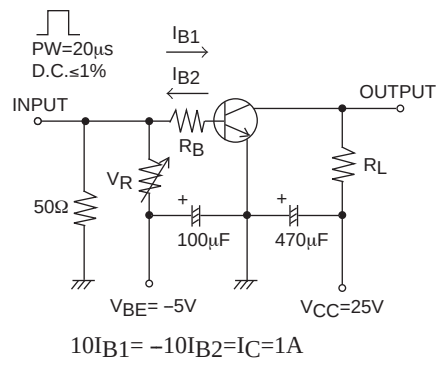


CPH5504

Electrical Characteristics at Ta=25°C

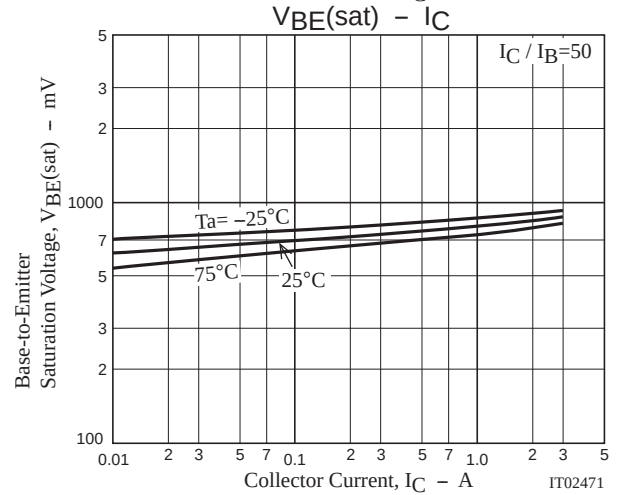
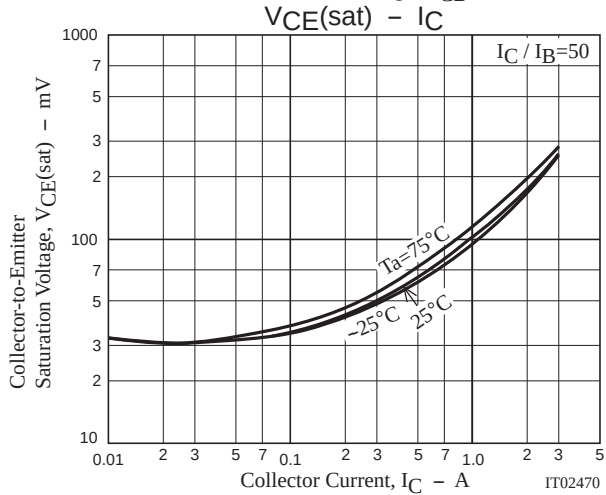
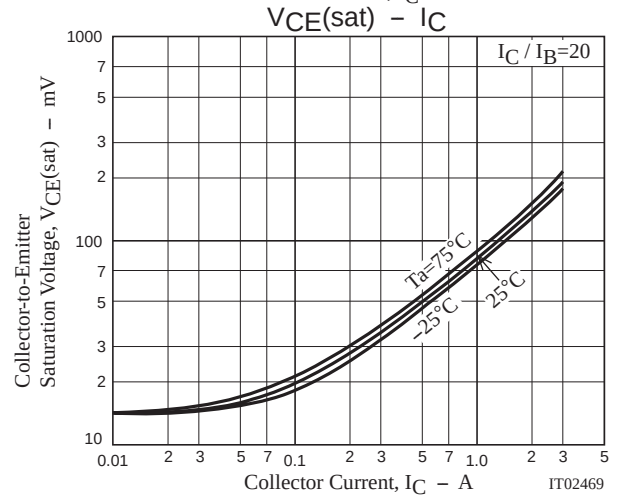
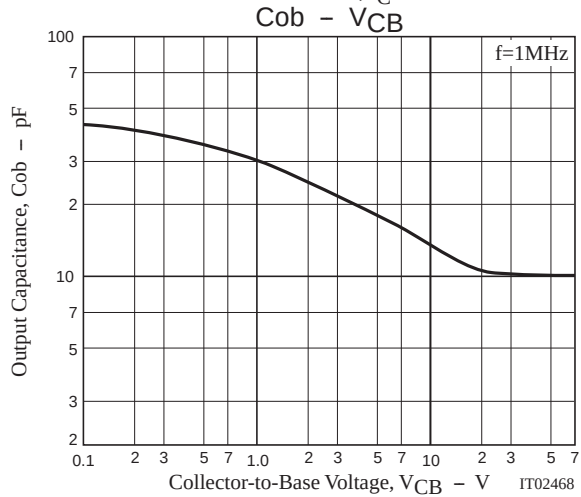
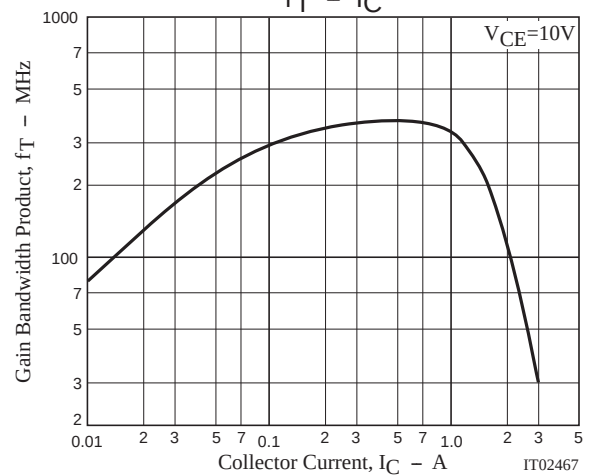
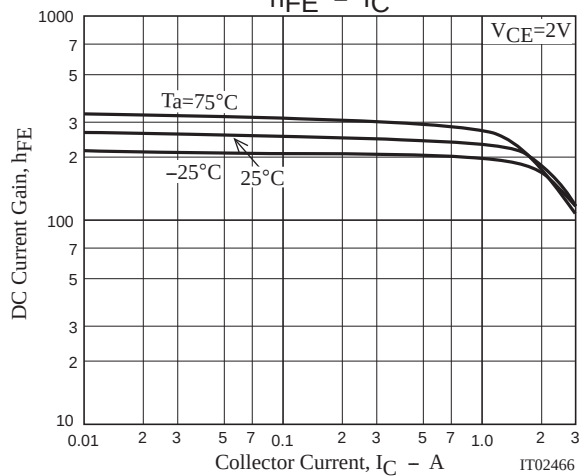
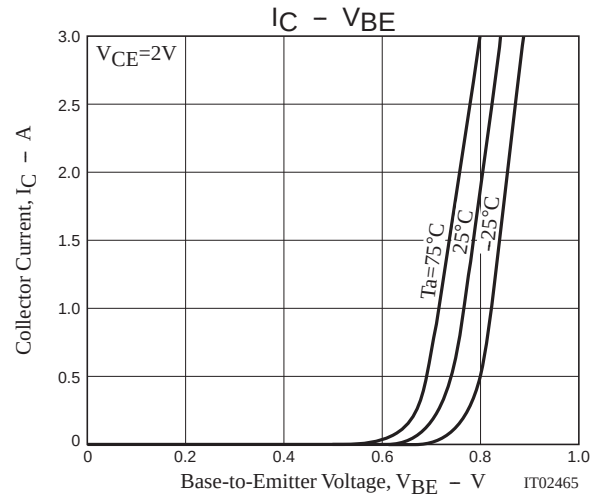
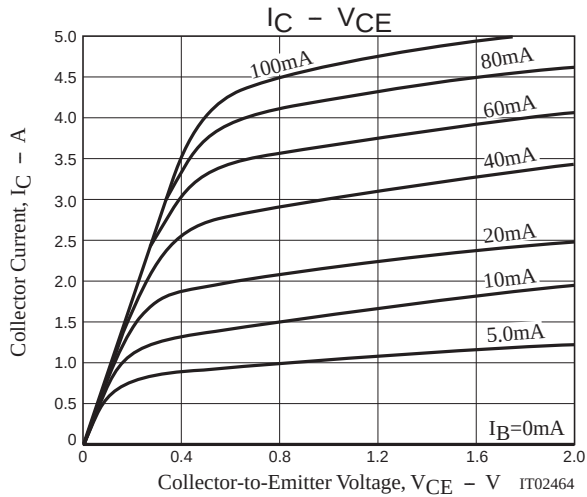
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =40V, I _E =0A			1	μA
Emitter Cutoff Current	IEBO	V _{EB} =4V, I _C =0A			1	μA
DC Current Gain	h _{FE1}	V _{CE} =2V, I _C =100mA	200		560	
	h _{FE2}	V _{CE} =2V, I _C =3A	70			
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =500mA		380		MHz
Output Capacitance	Cob	V _{CB} =10V, f=1MHz		13		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =1A, I _B =50mA		80	120	mV
		I _C =2A, I _B =100mA		140	210	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =2A, I _B =100mA		0.88	1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I _C =10μA, I _E =0A	100			V
Collector-to-Base Breakdown Voltage	V(BR)CES	I _C =100μA, R _{BE} =0Ω	100			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =1mA, R _{BE} =∞	50			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	I _E =10μA, I _C =0A	6			V
Turn-On Time	t _{on}	See specified Test Circuit.		35		ns
Storage Time	t _{stg}			300		ns
Fall Time	t _f			22		ns

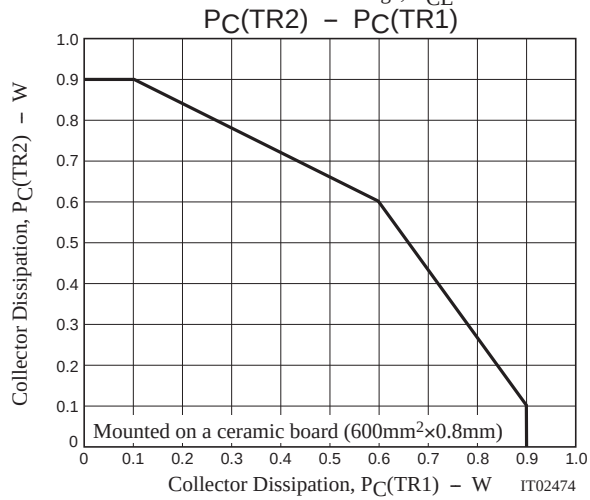
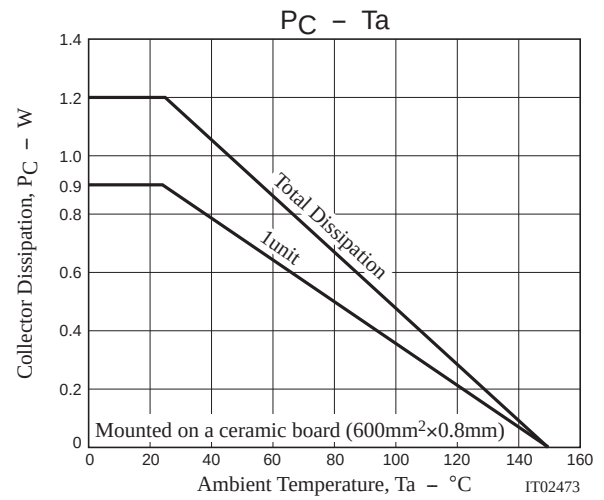
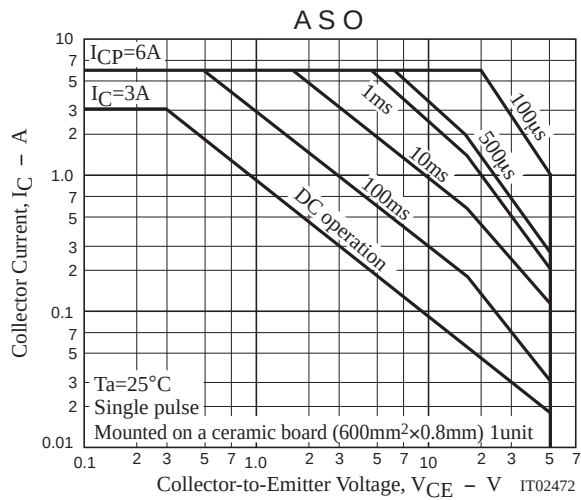
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
CPH5504-TL-E	CPH5	3,000pcs./reel	Pb Free





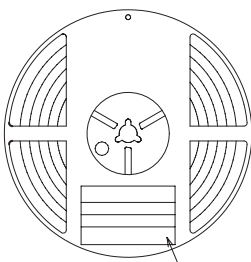
Embossed Taping Specification

CPH5504-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)
CPH5	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

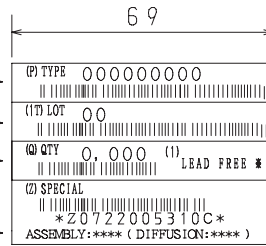
Packing method



Reel label

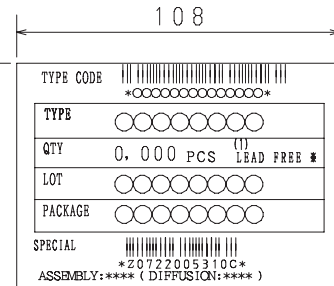
Type No.
LOT No.
Quantity
Origin

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.



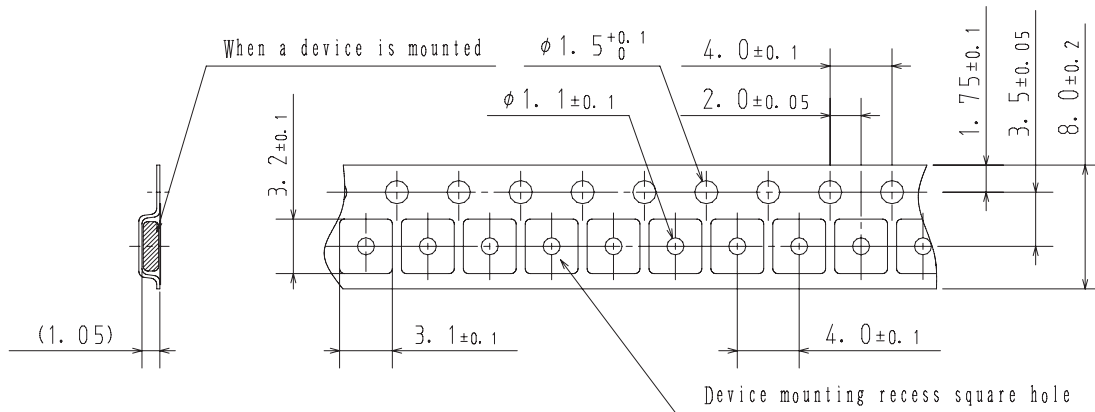
NOTE (1)

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

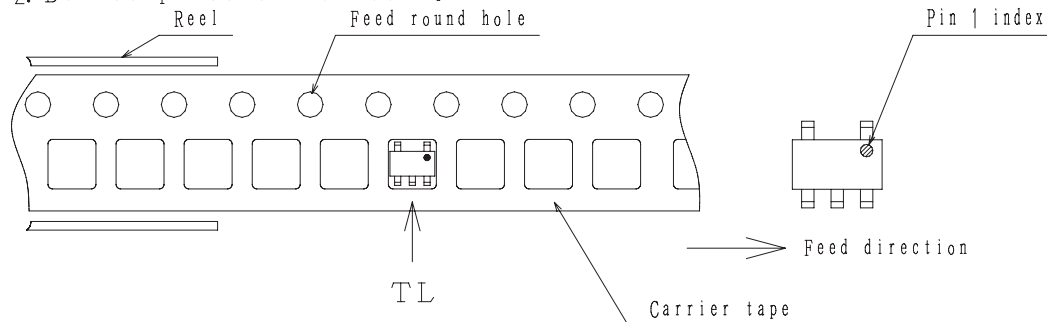
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

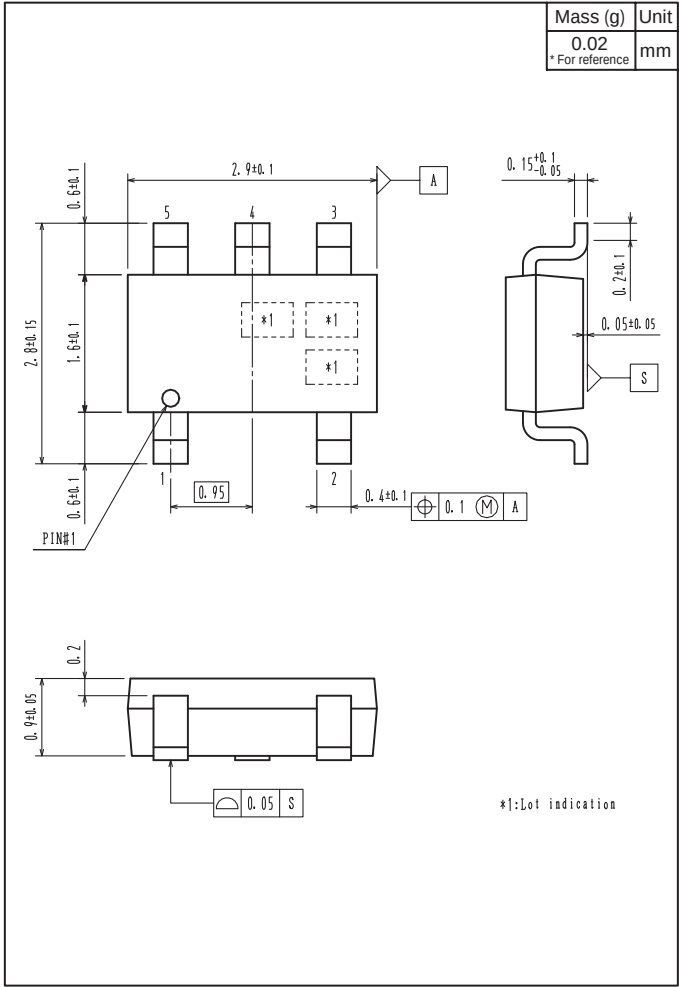


2-2. Device placement direction

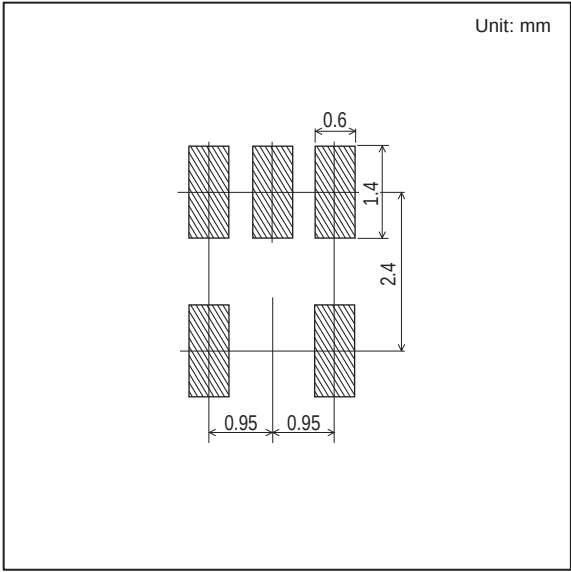


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
CPH5504-TL-E



Land Pattern Example



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