



CPH6538

Bipolar Transistor 30V, 0.7A, Low $V_{CE(sat)}$ NPN Dual CPH6

ON Semiconductor®

<http://onsemi.com>

Features

- Small-sized package with two NPN transistors (30C02CH equivalency) contained in one package
- $V_{CEO}=30V$, $I_C=0.7A$
- Low Collector-to-Emitter Saturation Voltage $V_{CE(sat)}=85mV(\text{typ.})@I_C=0.2A$
- High-speed switching $t_f=40ns(\text{typ.})@I_C=0.3A$
- Halogen free Compliance

Specifications

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

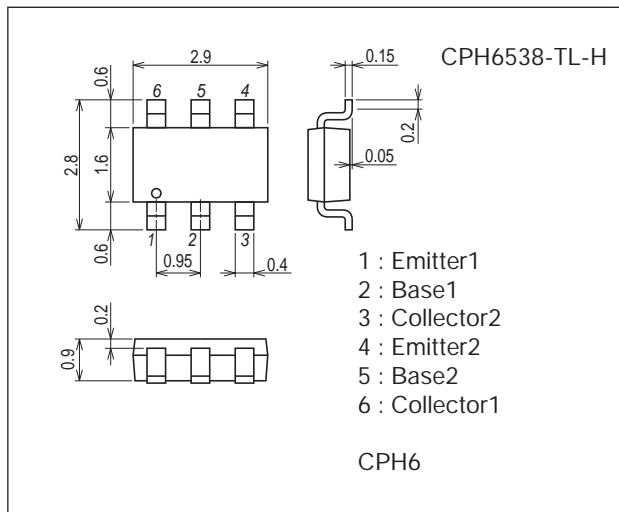
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		40	V
Collector-to-Emitter Voltage	V_{CEO}		30	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		700	mA
Collector Current (Pulse)	I_{CP}		1.4	A
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm ² ×0.8mm) 1unit	0.6	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)

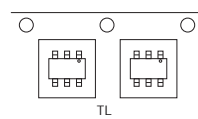
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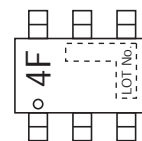
Product & Package Information

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

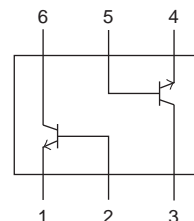
Packing Type: TL



Marking



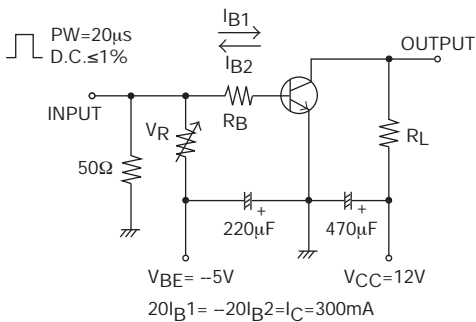
Electrical Connection



Electrical Characteristics at Ta=25°C

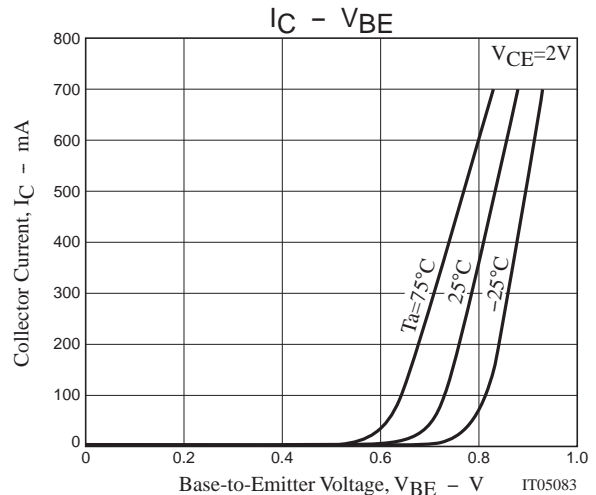
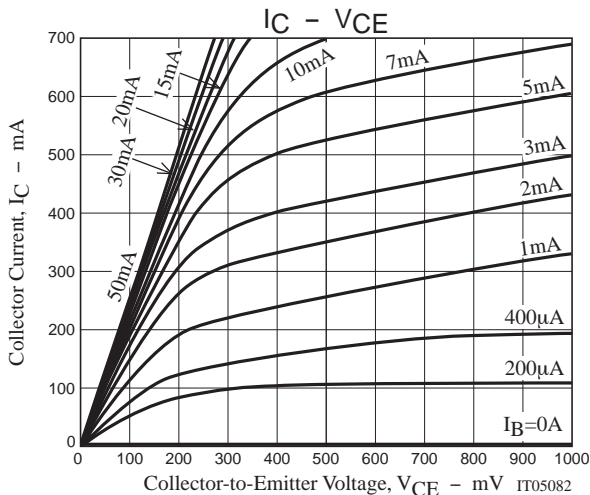
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=30V, I_E=0A$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4V, I_C=0A$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=2V, I_C=50mA$	300		800	
Gain-Bandwidth Product	f_T	$V_{CE}=2V, I_C=50mA$		540		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		3.3		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200mA, I_B=10mA$		85	190	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=200mA, I_B=10mA$		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	5			V
Turn-On Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}			255		ns
Fall Time	t_f			40		ns

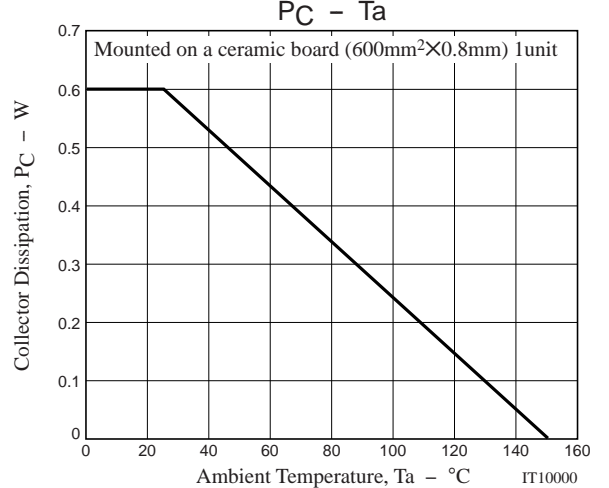
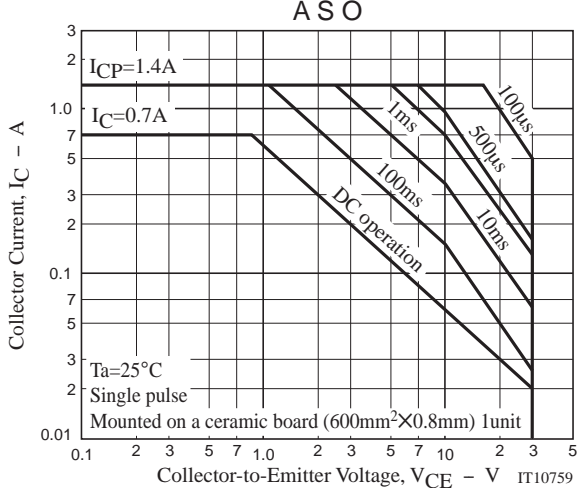
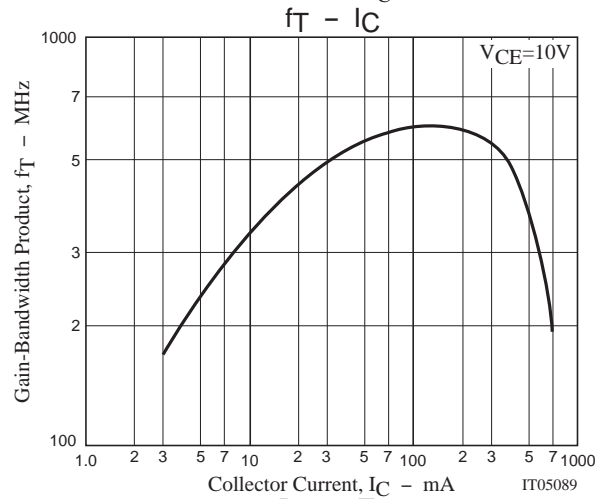
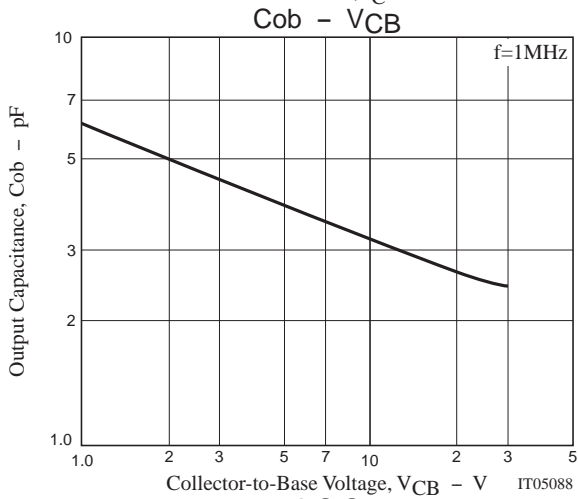
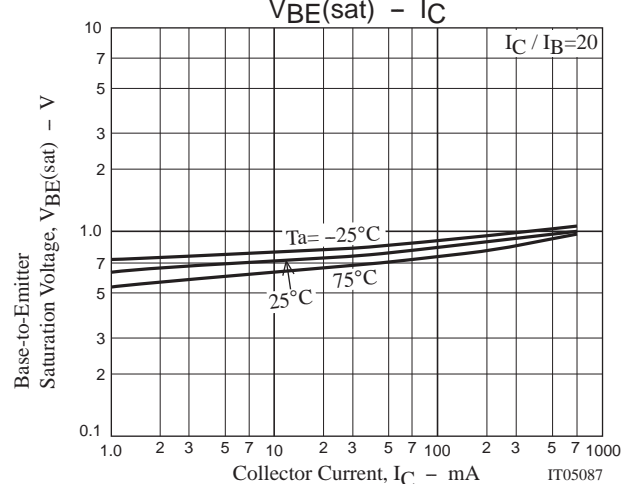
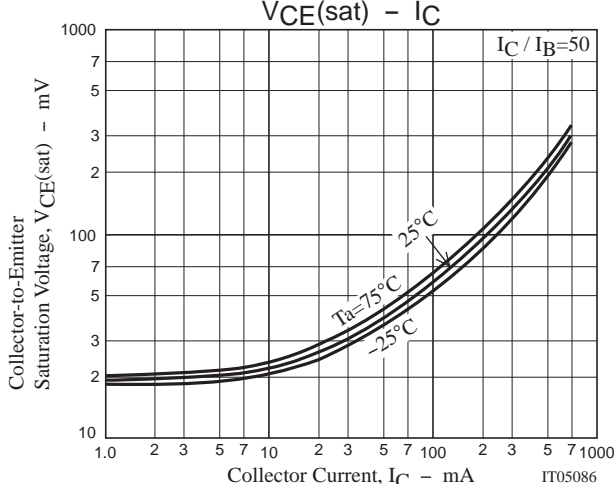
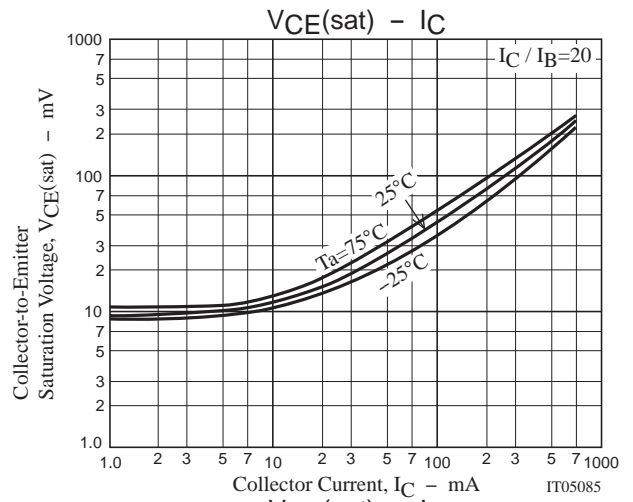
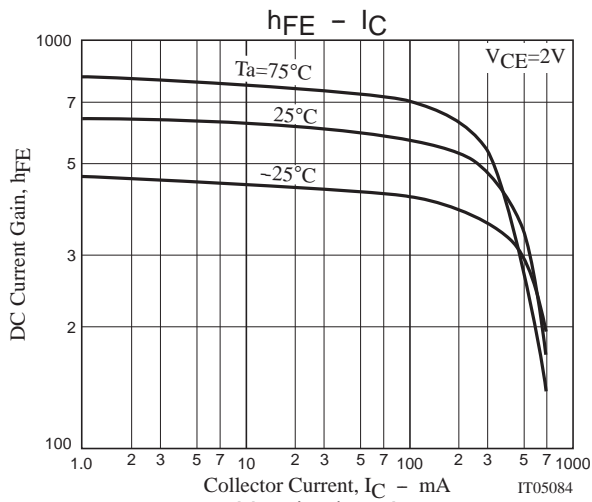
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
CPH6538-TL-H	CPH6	3,000pcs./reel	Pb Free and Halogen Free





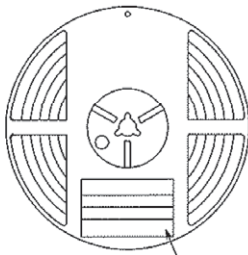
Embossed Taping Specification

CPH6538-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

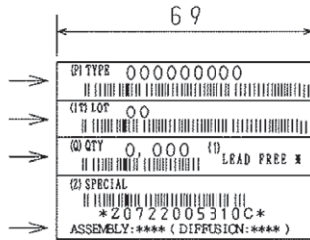
Packing method



Reel label

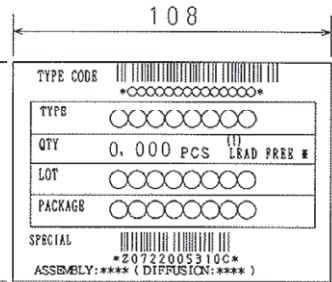
Type No.
LOT No.
Quantity
Origin

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.



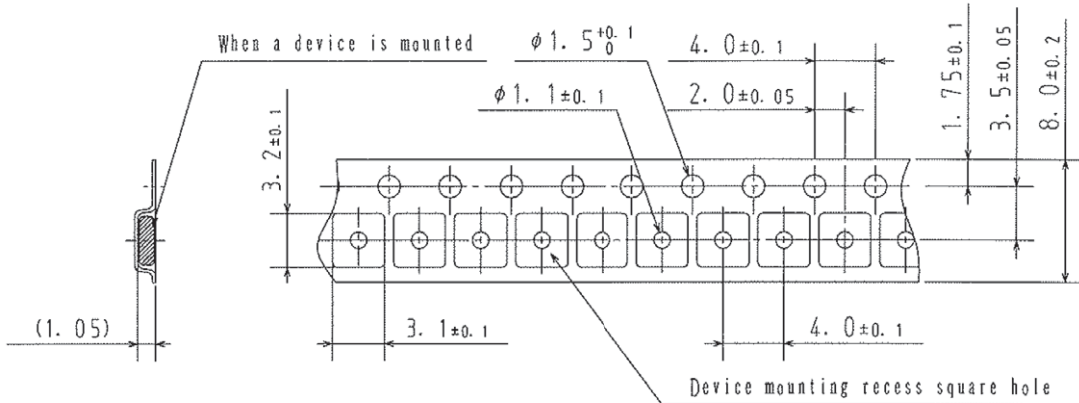
NOTE (1)

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

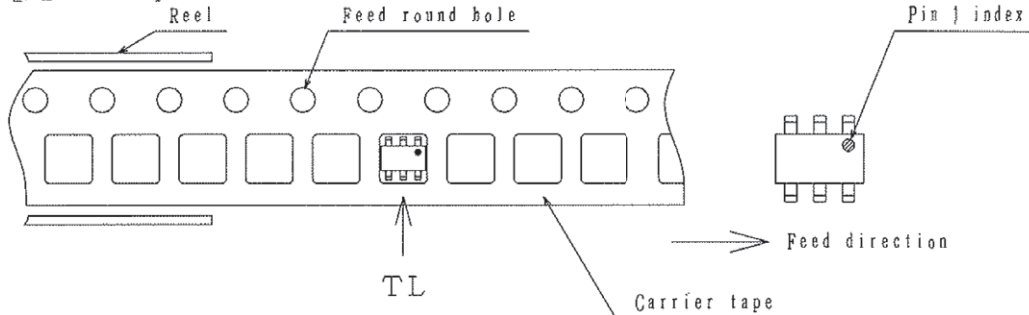
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



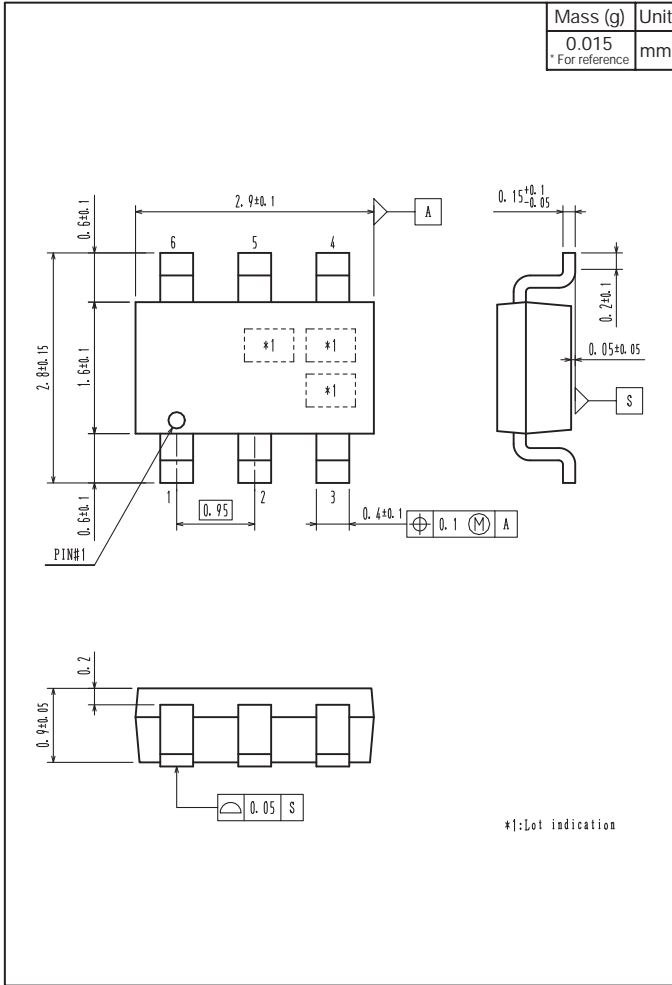
2-2. Device placement direction



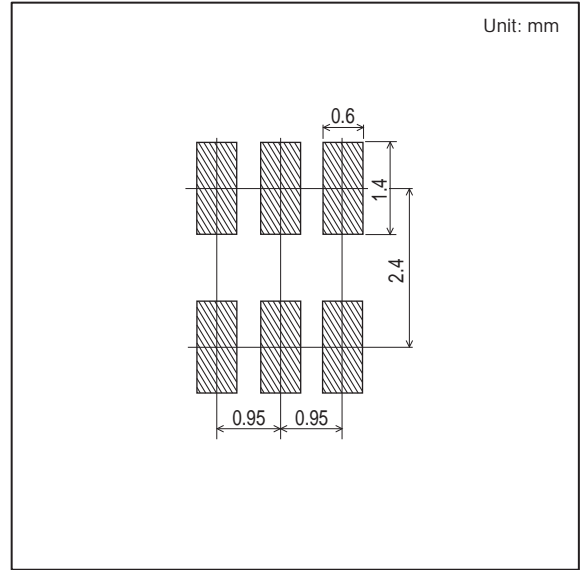
Those with pin 1 index on the feed hole side.....TL

CPH6538

Outline Drawing CPH6538-TL-H



Land Pattern Example



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