



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

CPH6538 — NPN Epitaxial Planar Silicon Transistor

DC / DC Converter Applications

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 $V_{CE(sat)}=85mV(typ.)@I_C=0.2A$
- High-speed switching $t_f=40ns(typ.)@I_C=0.3A$
- Halogen free Compliance

Specifications

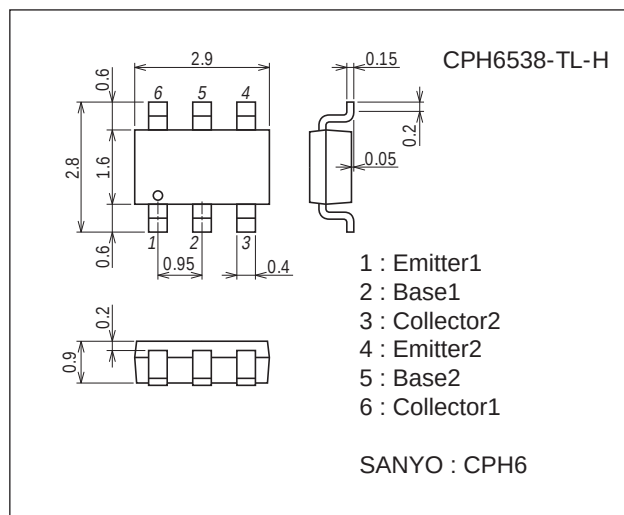
Absolute Maximum Ratings at $T_a=25^{\circ}C$

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	$^{\circ}C$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}C$

Package Dimensions

unit : mm (typ)

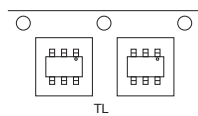
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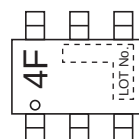
Product & Package Information

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

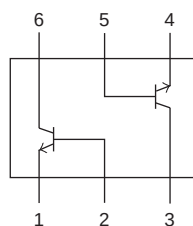
Packing Type: TL



Marking



Electrical Connection

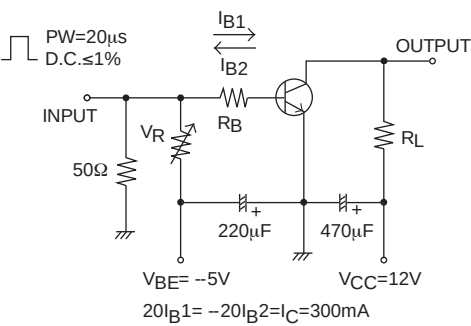


CPH6538

Electrical Characteristics at Ta=25°C

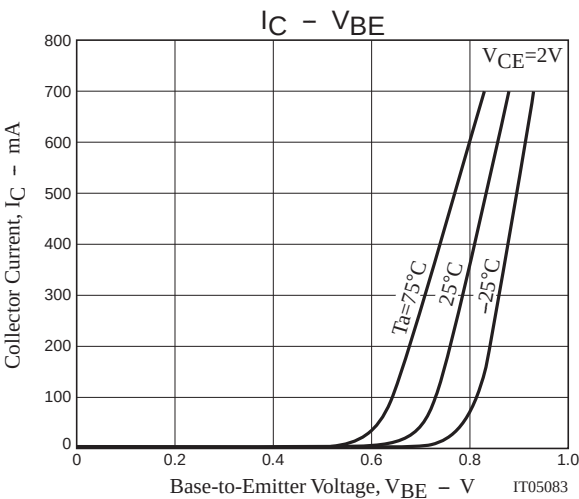
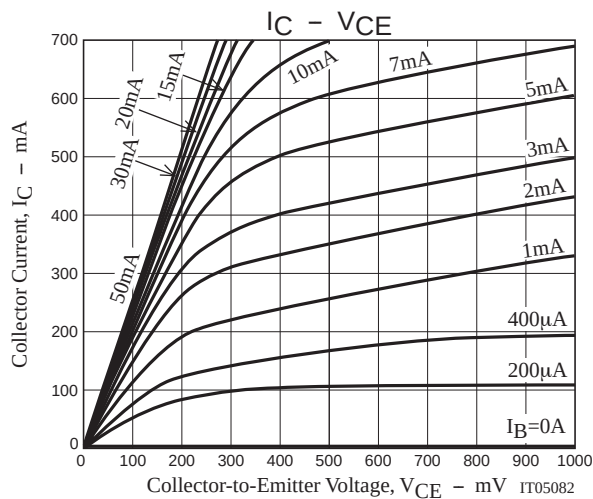
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	VCE=30V, IE=0A			100	nA
Emitter Cutoff Current	IEBO	VEB=4V, IC=0A			100	nA
DC Current Gain	hFE	VCE=2V, IC=50mA	300		800	
Gain-Bandwidth Product	fT	VCE=2V, IC=50mA		540		MHz
Output Capacitance	Cob	VCE=10V, f=1MHz		3.3		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=200mA, IB=10mA		85	190	mV
Base-to-Emitter Saturation Voltage	VBE(sat)	IC=200mA, IB=10mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=10μA, IE=0A	40			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=1mA, RBE=∞	30			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=10μA, IC=0A	5			V
Turn-On Time	ton	See specified Test Circuit.		35		ns
Storage Time	tstg			255		ns
Fall Time	tf			40		ns

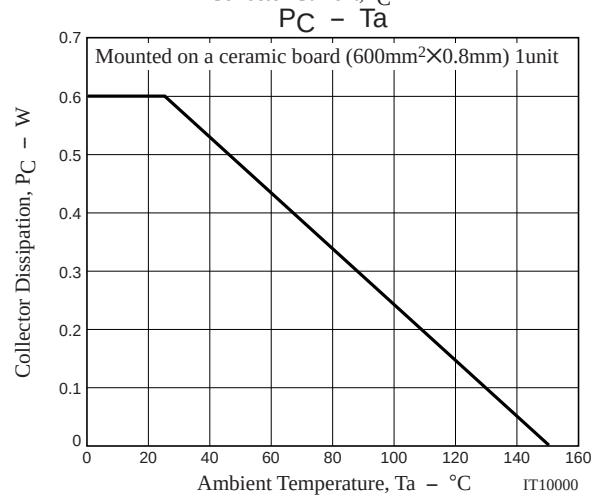
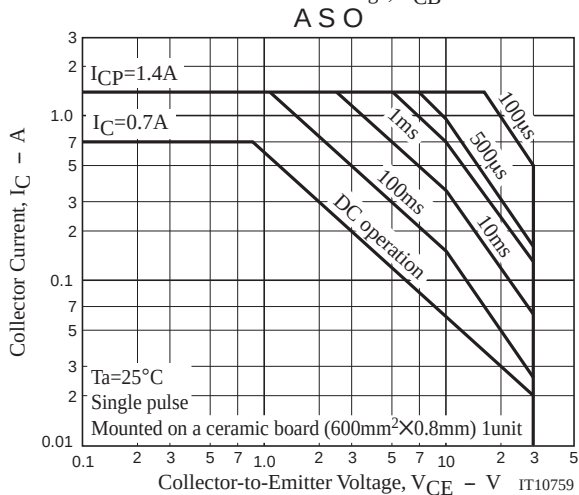
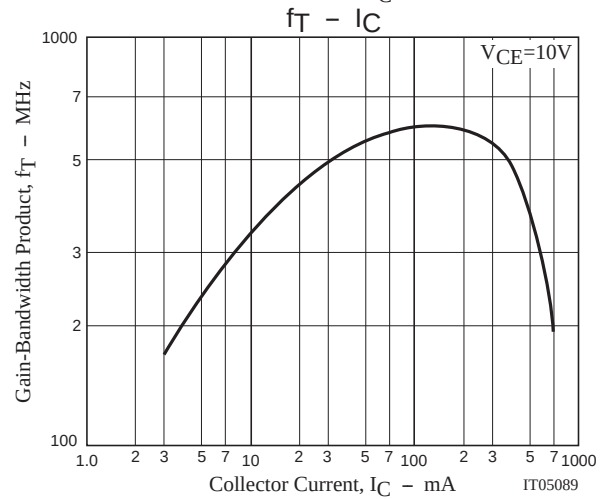
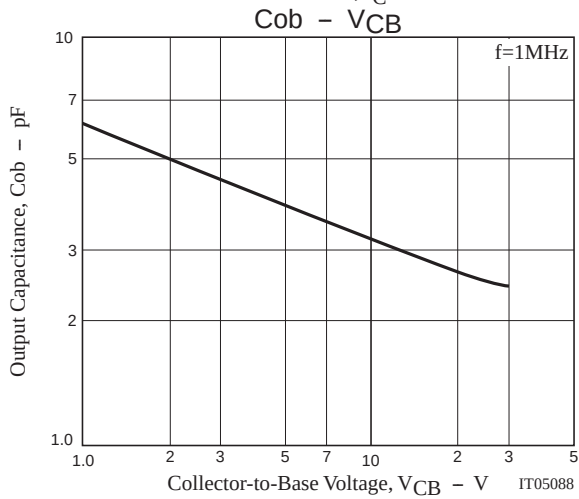
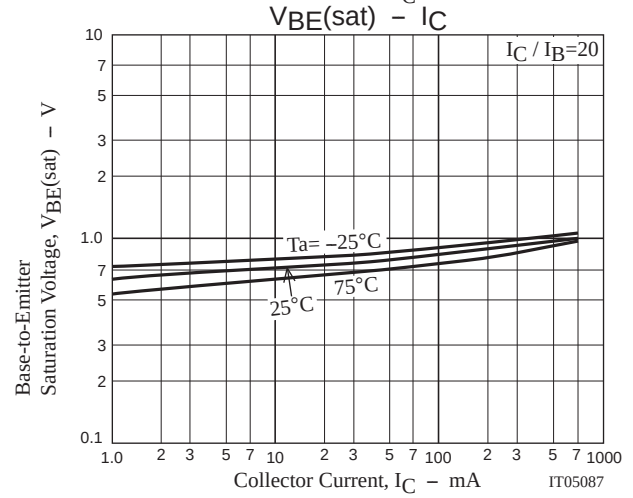
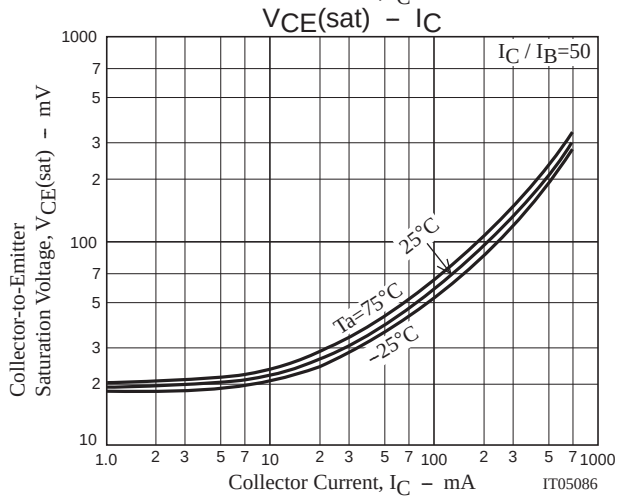
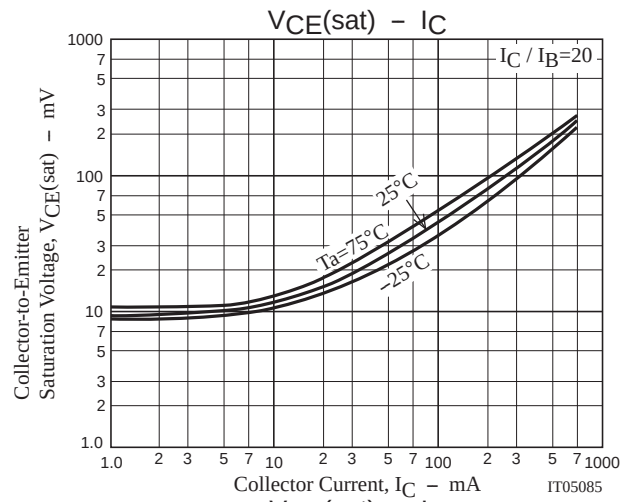
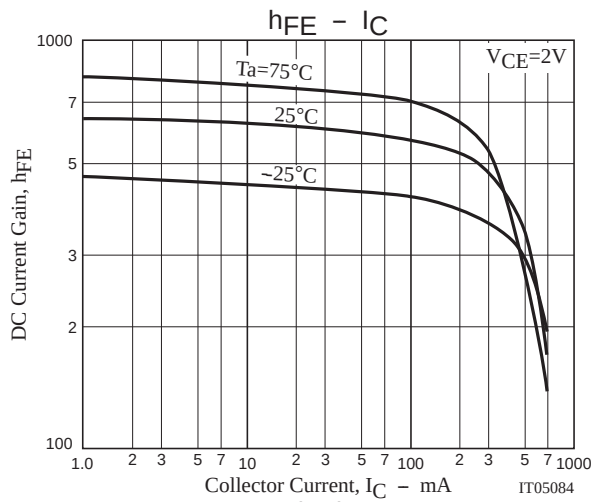
Switching Time Test Circuit



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

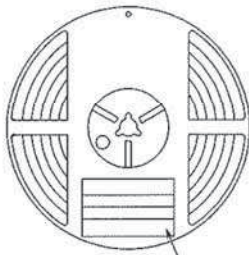
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH6	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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

Type No.
LOT No.
Quantity
Origin

TYPE	000000000
LOT	00
QTY	0,000 (1) LEAD FREE #
SPECIAL	*20722005310C*
ASSEMBLY	**** (DIFFUSION:****)

TYPE CODE	*****0*****
TYPE	00000000
QTY	0,000 PCS (1) LEAD FREE #
LOT	00000000
PACKAGE	00000000
SPECIAL	*20722005310C*
ASSEMBLY	**** (DIFFUSION:****)

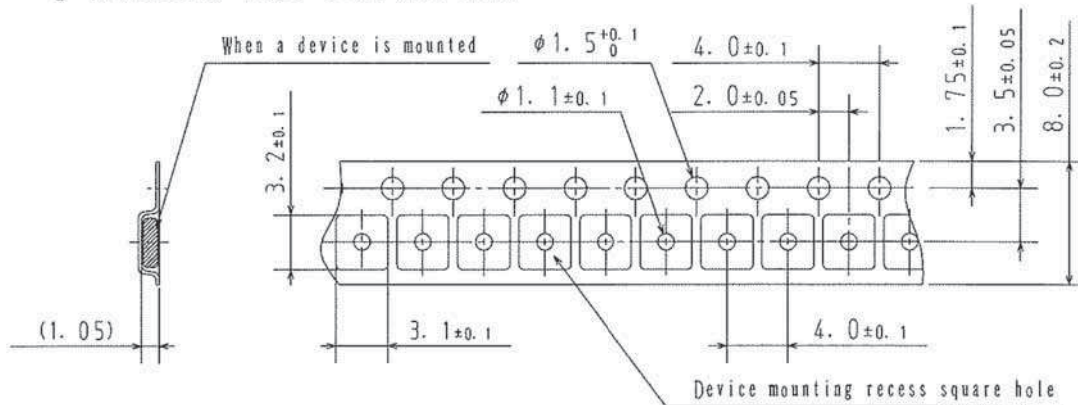
NOTE (1)

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

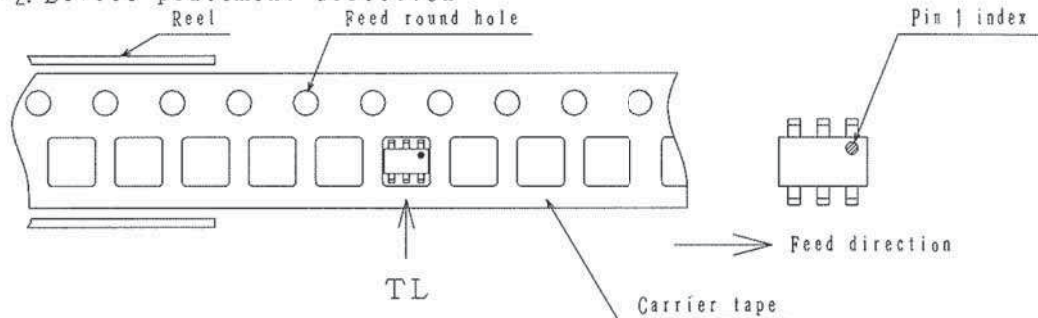
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

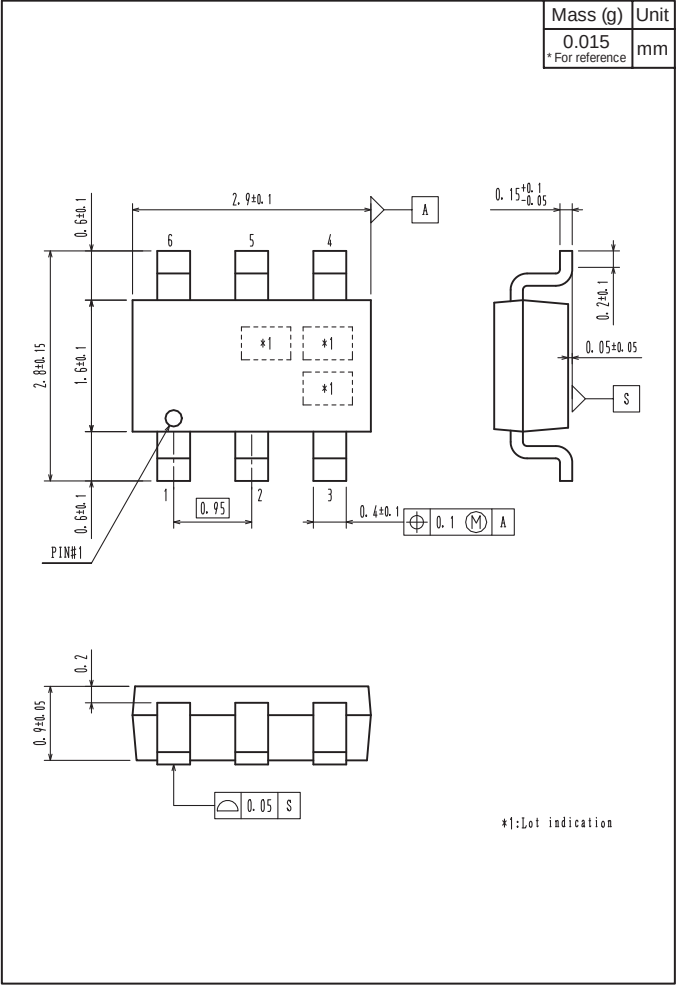
2-1. Carrier tape size (unit:mm)



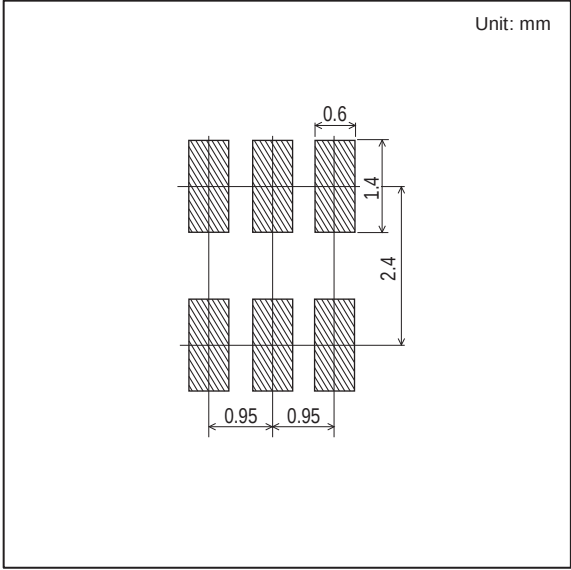
2-2. Device placement direction



Outline Drawing
CPH6538-TL-H



Land Pattern Example



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