



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

CPH3212 — NPN Epitaxial Planar Silicon Transistor

DC / DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- High current capacitance
- Low collector-to-emitter saturation voltage
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm)
- High allowable power dissipation

Specifications

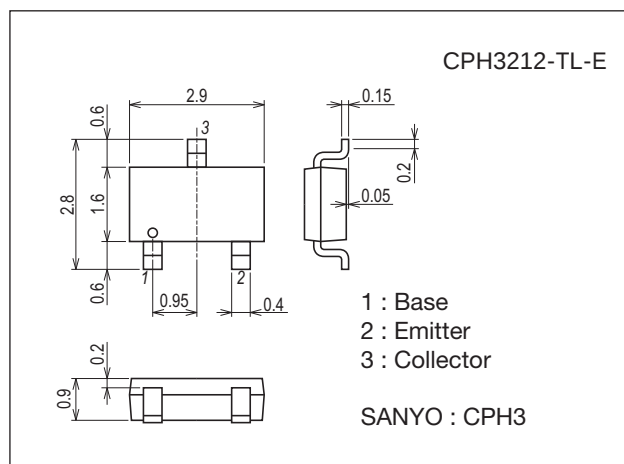
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	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		5	A
Collector Current (Pulse)	I _{CP}		7	A
Base Current	I _B		1.2	A
Collector Dissipation	P _C	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.9	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

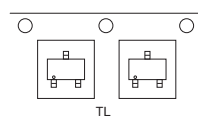
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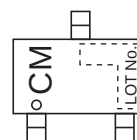
Product & Package Information

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

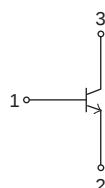
Packing Type: TL



Marking



Electrical Connection



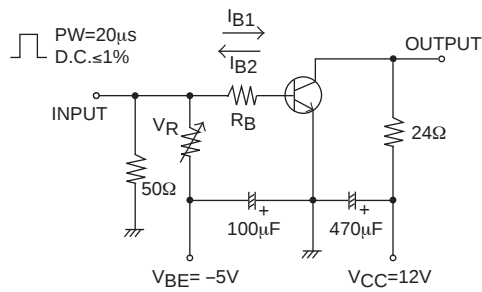
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Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	VCE=40V, IE=0A			0.1	μA
Emitter Cutoff Current	IEBO	VEB=4V, IC=0A			0.1	μA
DC Current Gain	hFE	VCE=2V, IC=500mA	200		560	
Gain-Bandwidth Product	fT	VCE=10V, IC=500mA		330		MHz
Output Capacitance	Cob	VCE=10V, f=1MHz		26		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=2A, IB=40mA		100	150	mV
Base-to-Emitter Saturation Voltage	VBE(sat)	IC=2A, IB=40mA		0.80	1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=10μA, IE=0A	100			V
Collector-to-Emitter Breakdown Voltage	V(BR)CES	IC=100μA, RBE=0Ω	100			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=1mA, RBE=∞	50			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=10μA, IC=0A	6			V
Turn-On Time	ton	See specified Test Circuit.		32		ns
Storage Time	tstg			420		ns
Fall Time	tf			28		ns

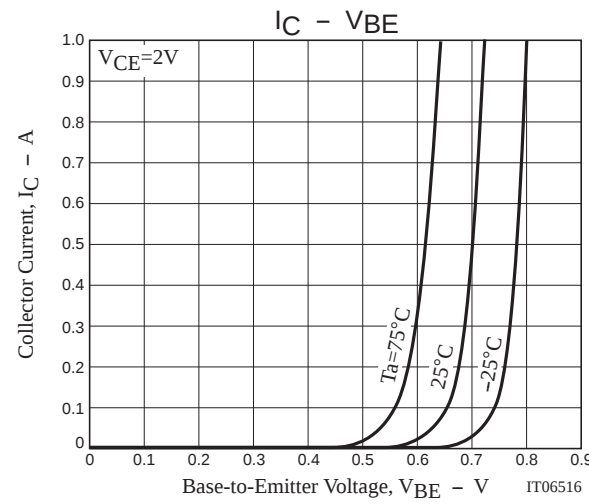
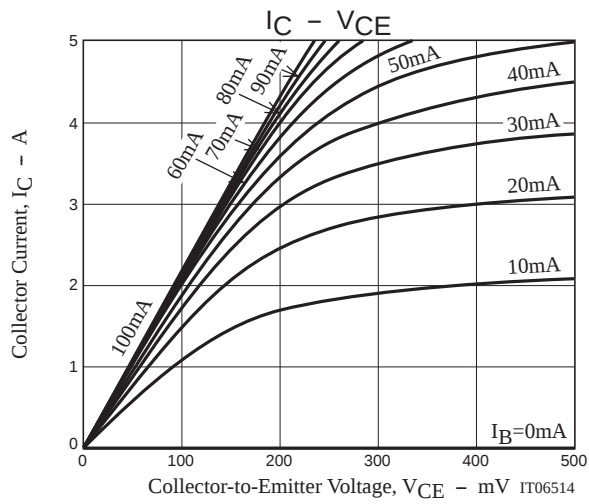
Switching Time Test Circuit

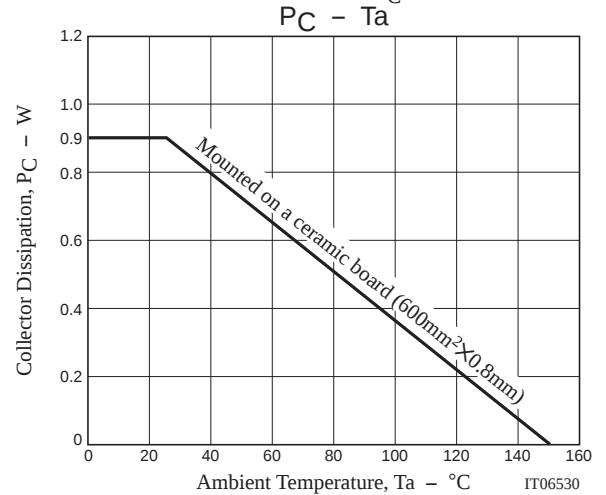
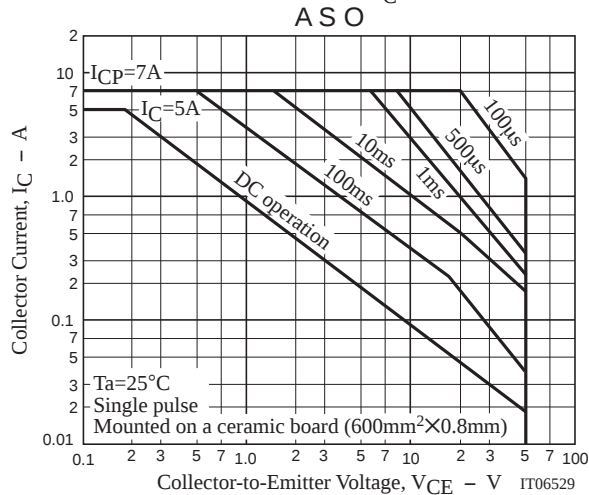
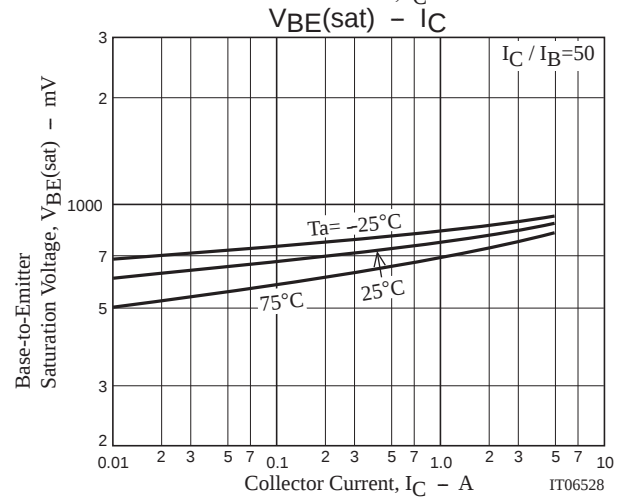
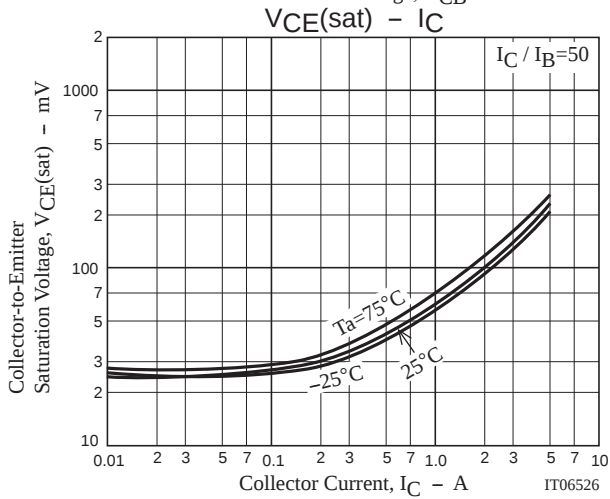
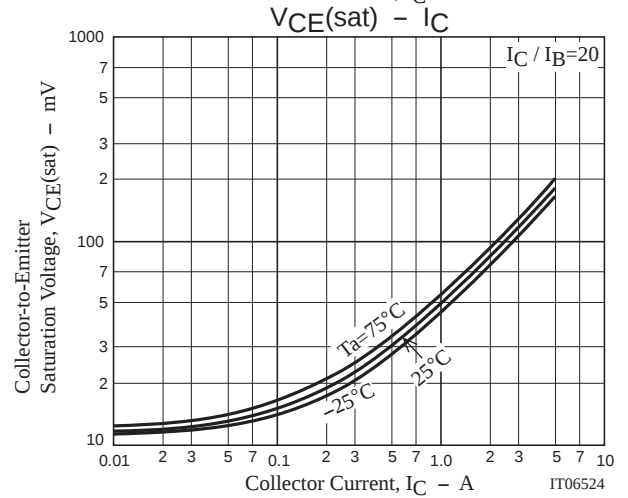
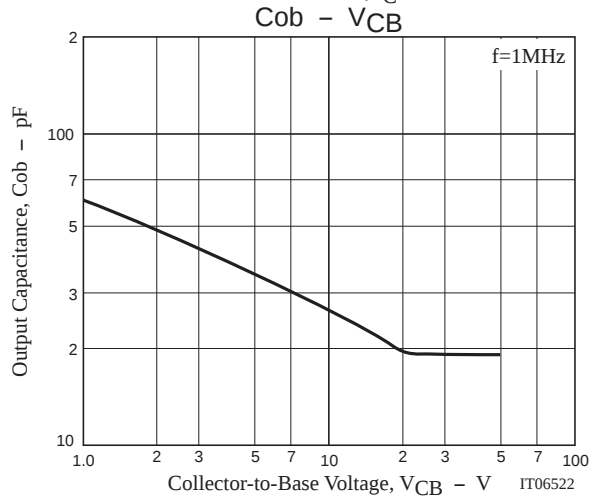
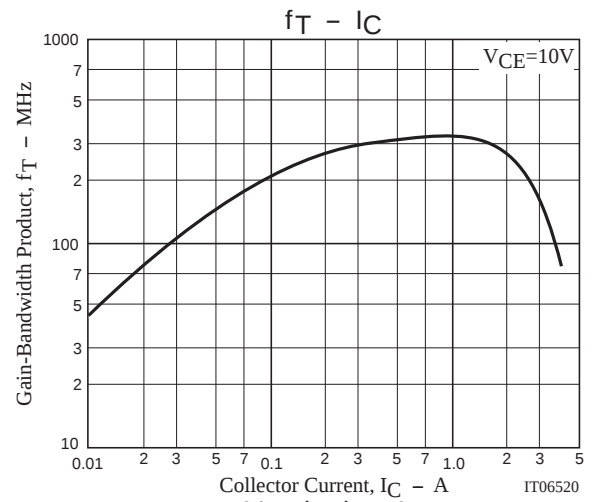
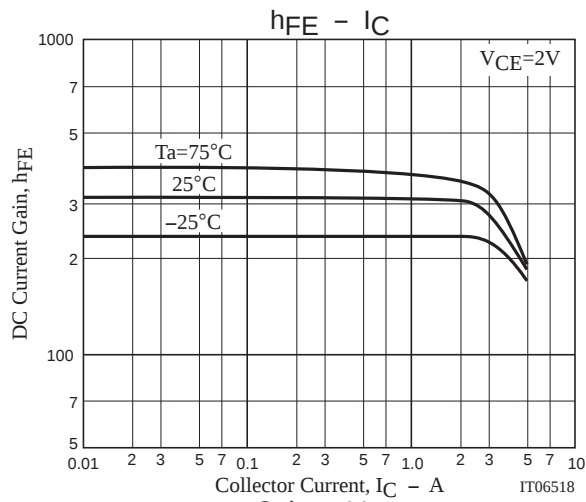


$I_C=20I_{B1}= -20I_{B2}=2.5A$

Ordering Information

Device	Package	Shipping	memo
CPH3212-TL-E	CPH3	3,000pcs./reel	Pb Free





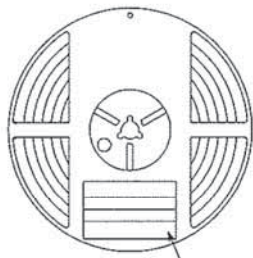
Embossed Taping Specification

CPH3212-TL-E

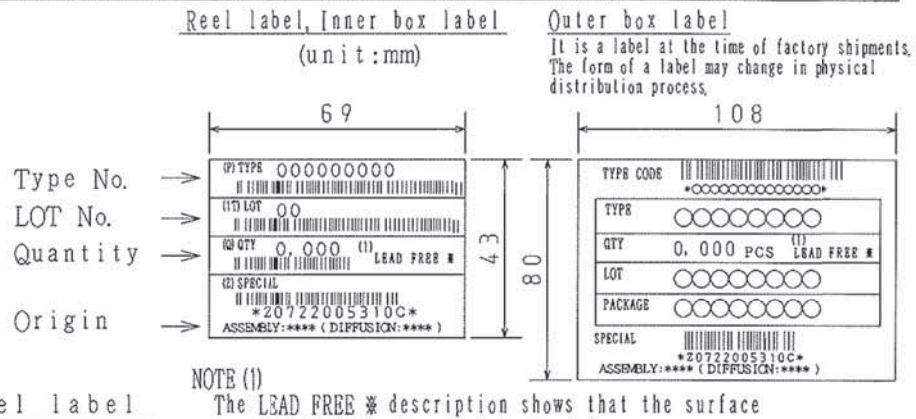
1. Packing Format

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

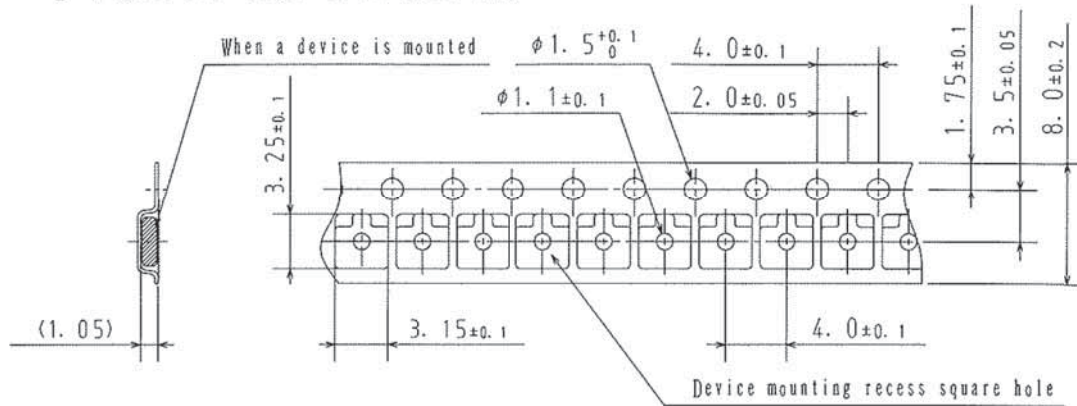


Reel label

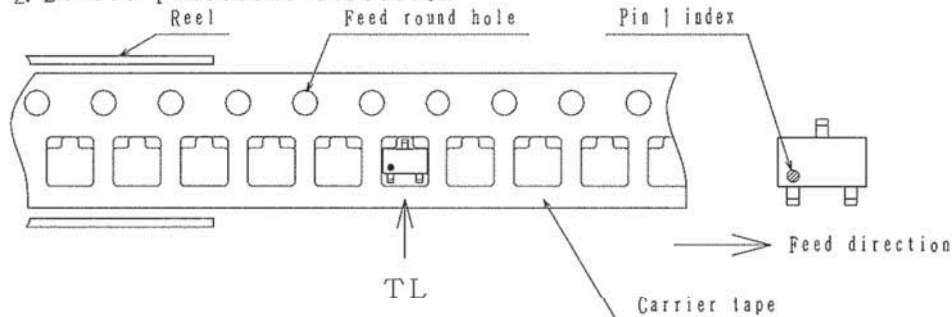


2. Taping configuration

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

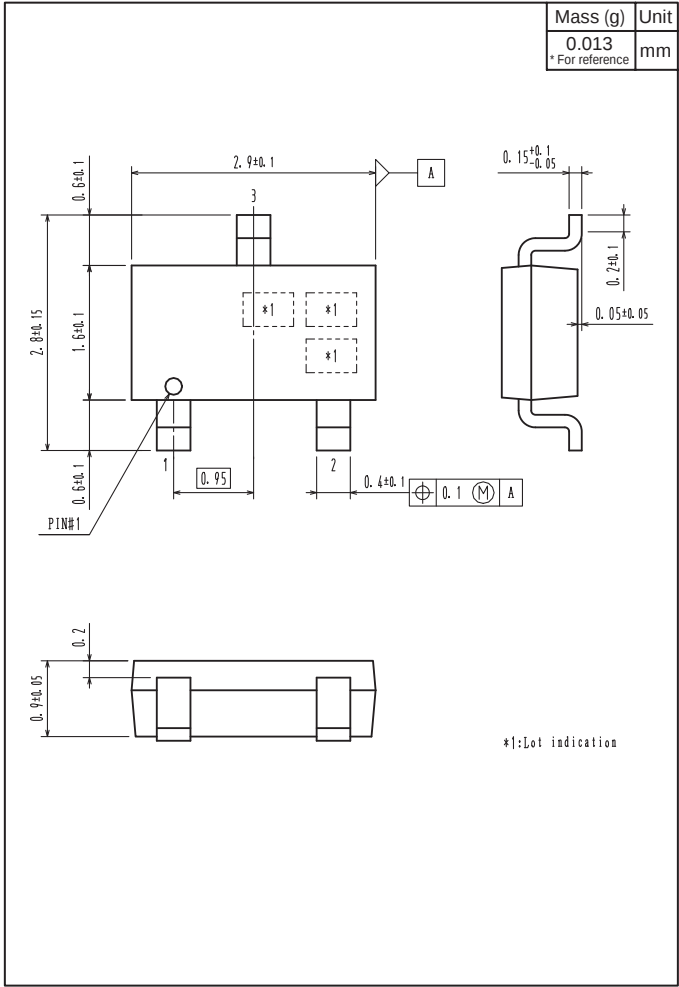


2-2. Device placement direction

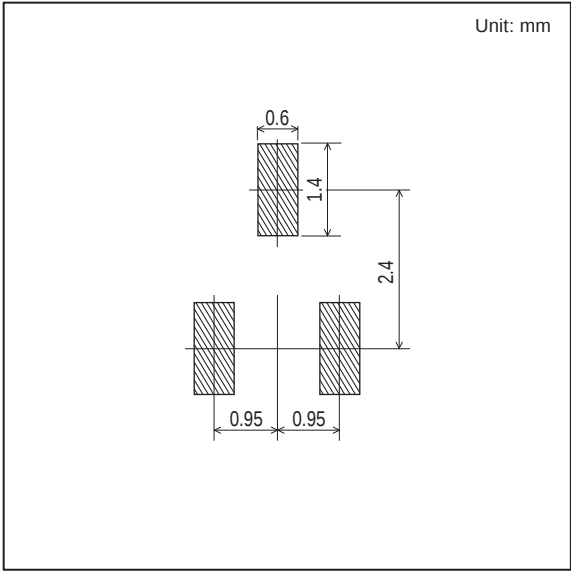


Those with one electrode terminal on the feed hole side.....TL

Outline Drawing
CPH3212-TL-E



Land Pattern Example



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JONHON

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