Ordering number : EN7363A

SANYO Semiconductors
DATA SHEET
An ON Semiconductor Company

NPN Epitaxial Planar Silicon Transistor

30C02CH — Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifier, high-speed switching, small motor drive

Features

- Large current capacity
- Low collector-to-emitter saturation voltage (resistance) R_{CE}(sat) typ.=330mΩ[I_C=0.7A, I_B=35mA]
- Ultrasmall package facilitates miniaturization in end products
- Small ON-resistance (Ron)

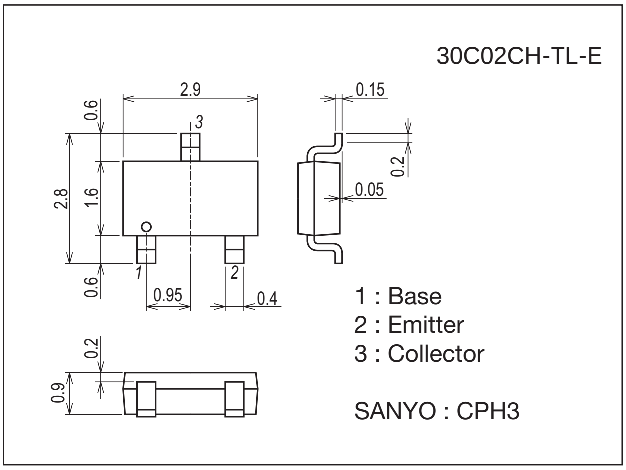
Specifications

Absolute Maximum Ratings at Ta=25°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	Mounted on a ceramic board (600mm^2×0.8mm)	700	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

Package Dimensions

unit : mm (typ)
7015A-003



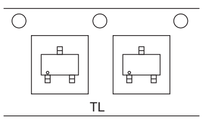
1 : Base
2 : Emitter
3 : Collector

SANYO : CPH3

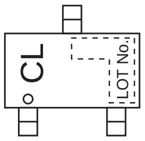
Product & Package Information

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

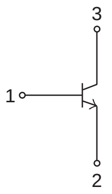
Packing Type: TL



Marking



Electrical Connection



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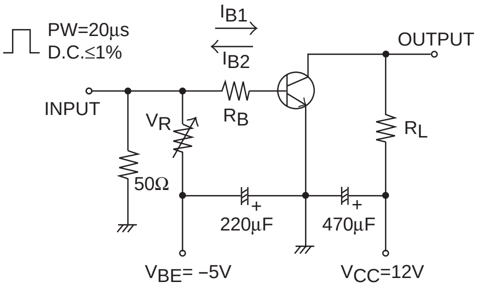
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	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}=10V, I_C=50mA		540		MHz
Output Capacitance	Cob	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=10µA, I_E=0A	40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10µA, 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

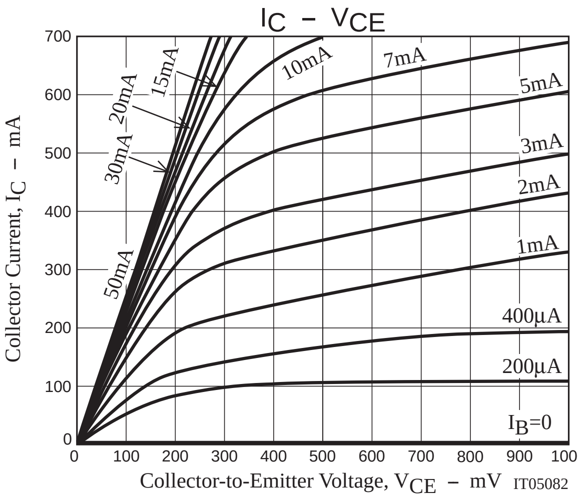
Switching Time Test Circuit

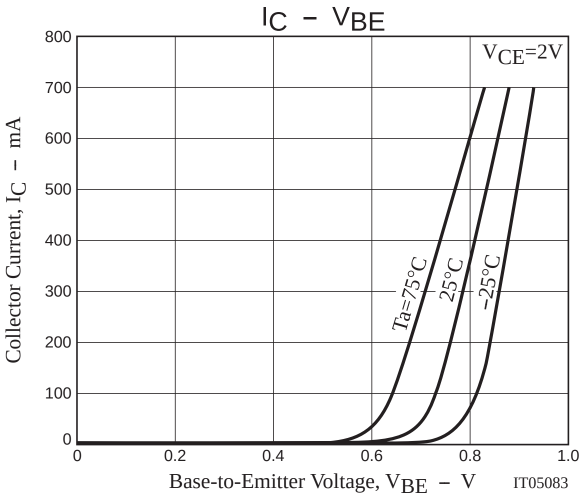


I_C=20I_{B1}= −20I_{B2}=300mA

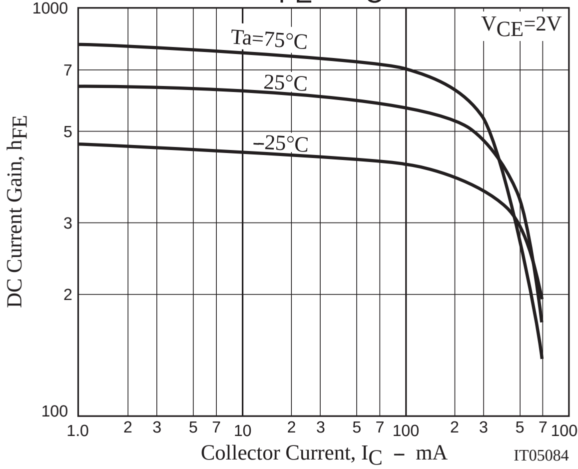
Ordering Information

Device	Package	Shipping	memo
30C02CH-TL-E	CPH3	3,000pcs./reel	Pb Free

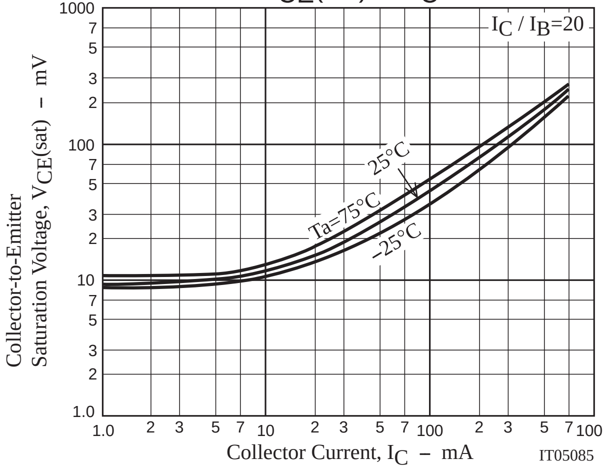




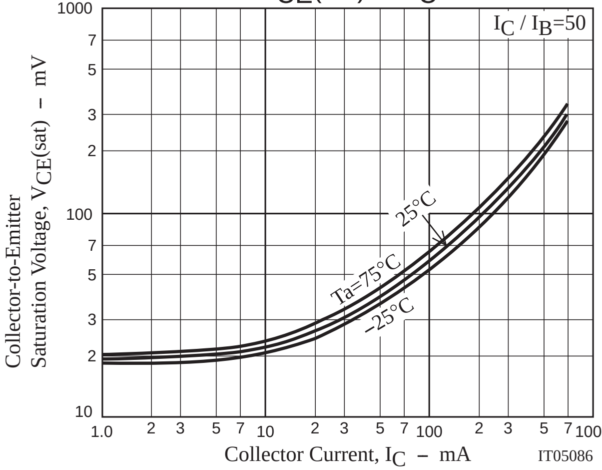
h_{FE} – I_C



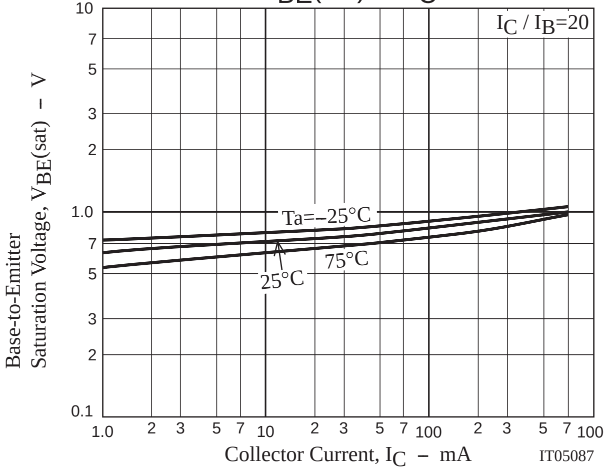
V_{CE}(sat) – I_C



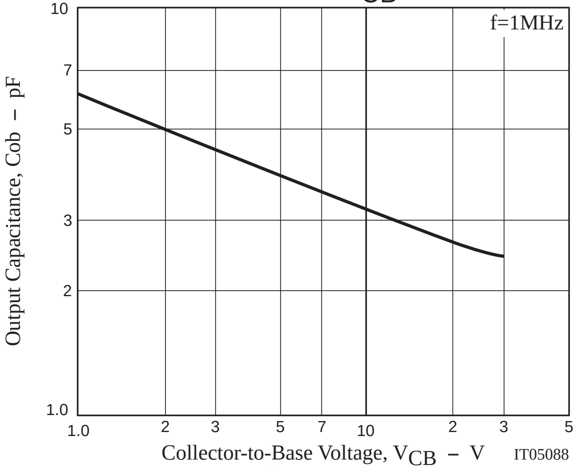
V_{CE}(sat) – I_C



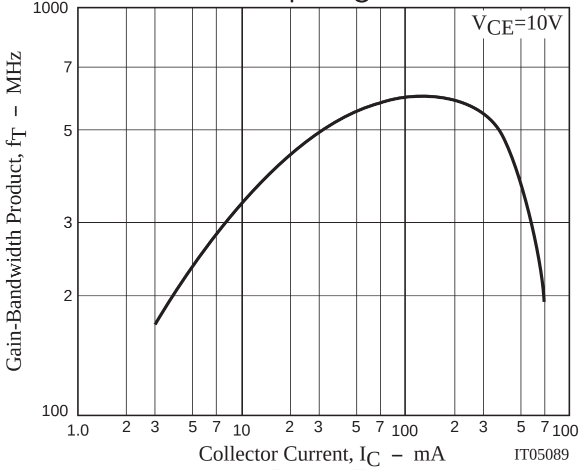
V_{BE}(sat) – I_C



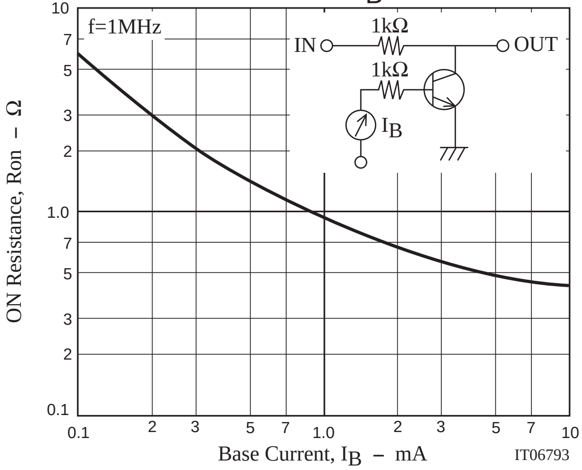
Cob – V_{CB}



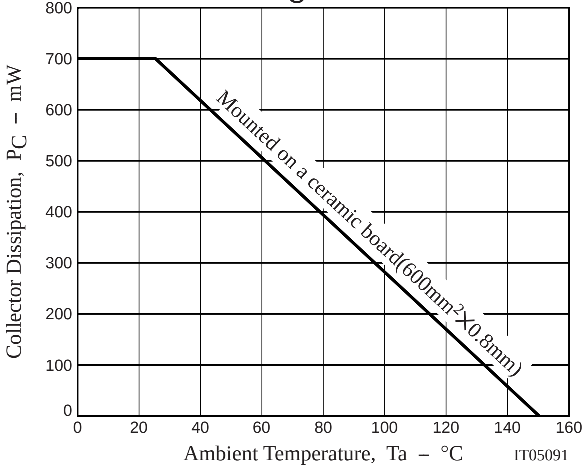
f_T – I_C



Ron – I_B



P_C – Ta



Embossed Taping Specification

30C02CH-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

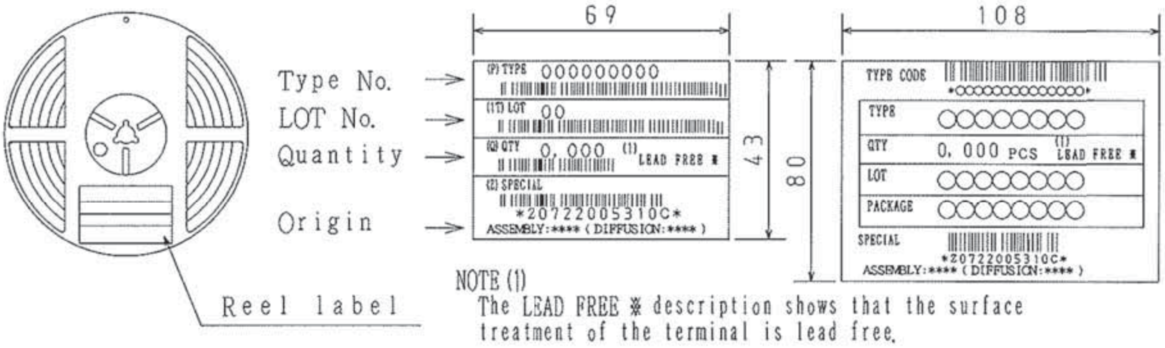
Packing method

Reel label, 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.

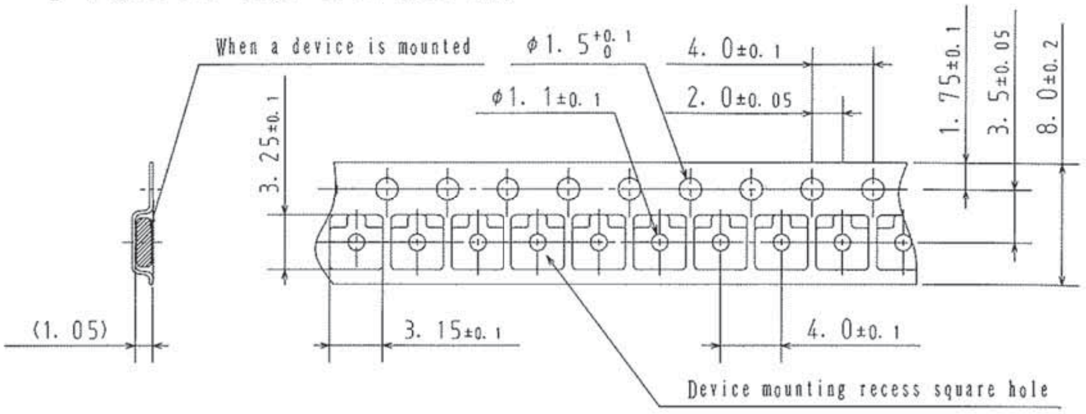


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

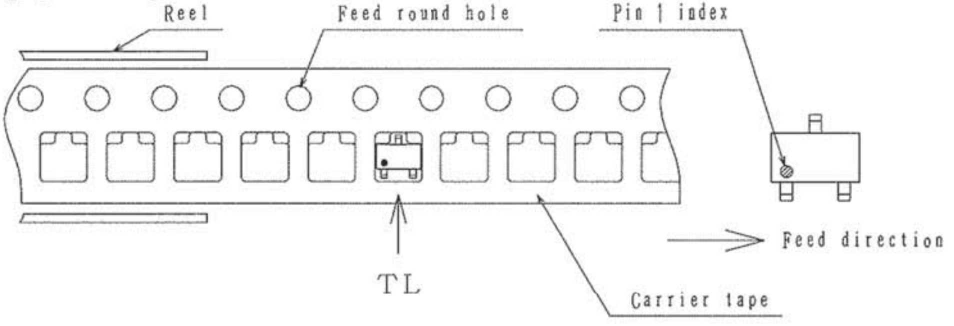
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

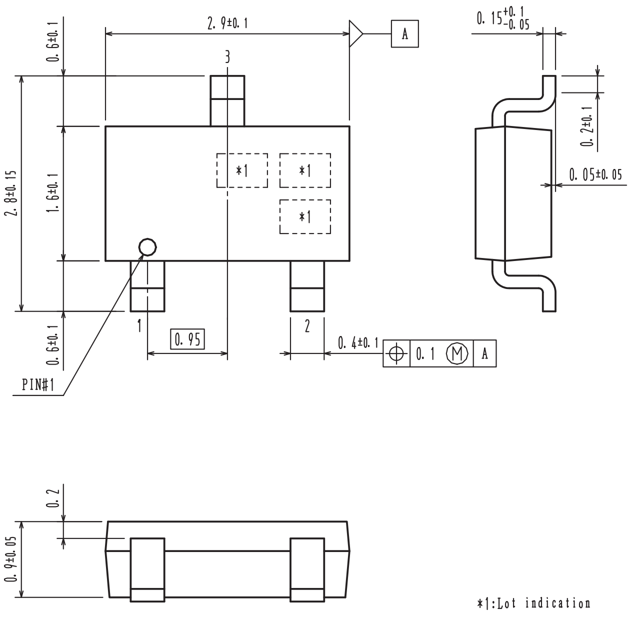


Those with one electrode terminal on the feed hole side······TL

Outline Drawing

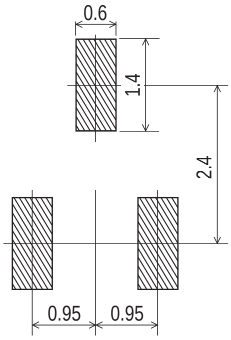
30C02CH-TL-E

Mass (g)	Unit
0.013 * For reference	mm



Land Pattern Example

Unit: mm



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