



30A02CH

Bipolar Transistor -30V, -0.7A, Low VCE(sat) PNP Single CPH3

ON Semiconductor®

<http://onsemi.com>

Applications

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

Features

- Large current capacitance
- Low collector-to-emitter saturation voltage (resistance) $R_{CE(sat)}$ typ.=580m Ω [$I_C=0.7A$, $I_B=35mA$]
- Small ON-resistance (R_{on})

Specifications

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

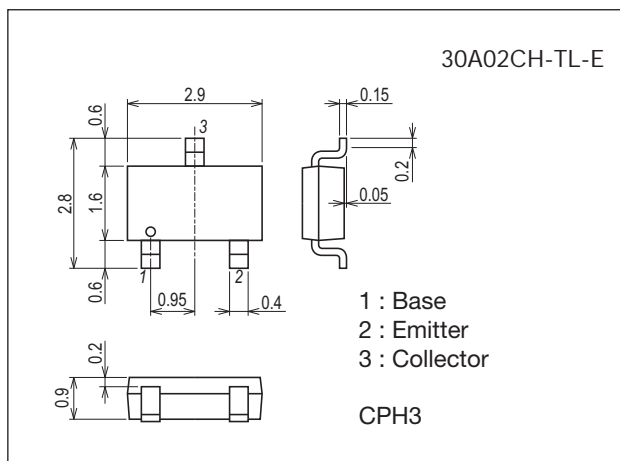
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-30	V
Collector-to-Emitter Voltage	V_{CEO}		-30	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-700	mA
Collector Current (Pulse)	I_{CP}		-1.4	A
Collector Dissipation	PC	Mounted on a ceramic board (600mm ² ×0.8mm)	700	mW
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)

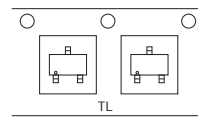
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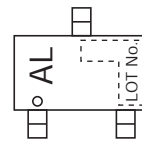
Product & Package Information

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

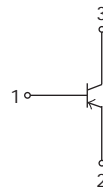
Packing Type: TL



Marking



Electrical Connection

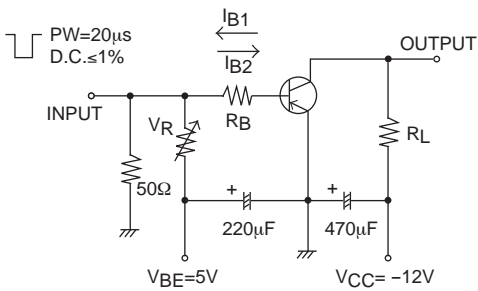


30A02CH

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -30\text{V}, I_E = 0\text{A}$			-100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-100	nA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -10\text{mA}$	200		500	
Gain-Bandwidth Product	f_T	$V_{CE} = -10\text{V}, I_C = -50\text{mA}$		520		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		4.7		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -200\text{mA}, I_B = -10\text{mA}$		-110	-220	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -200\text{mA}, I_B = -10\text{mA}$		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-5			V
Turn-On Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}			125		ns
Fall Time	t_f			25		ns

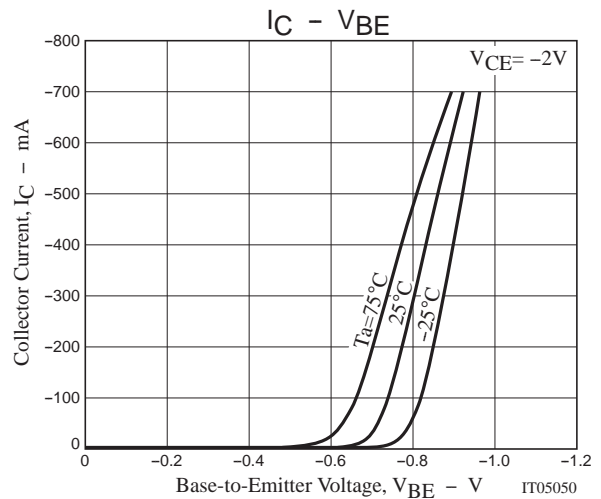
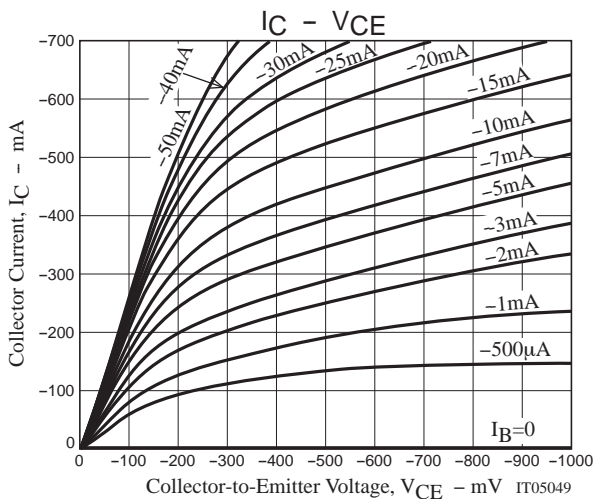
Switching Time Test Circuit



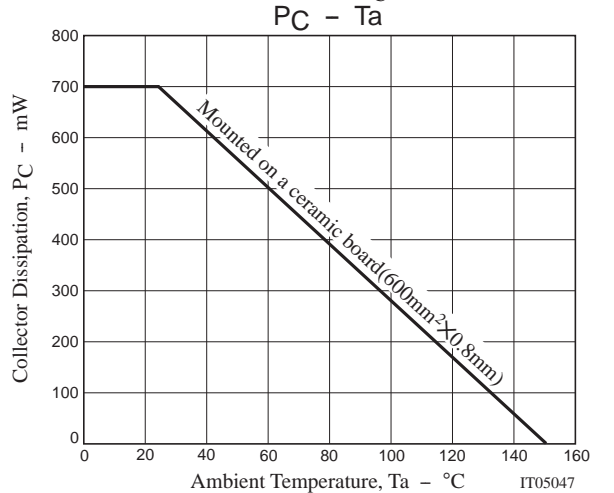
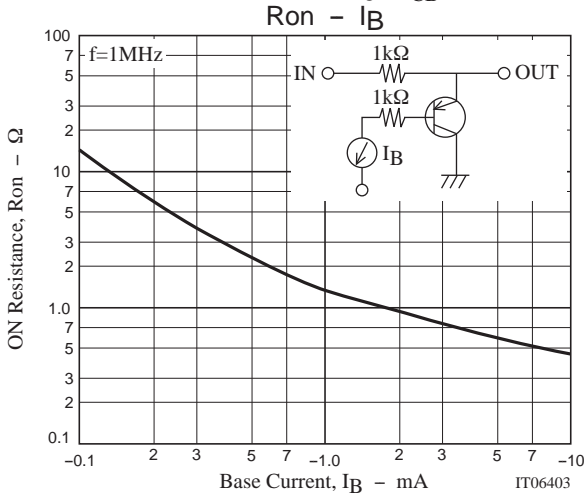
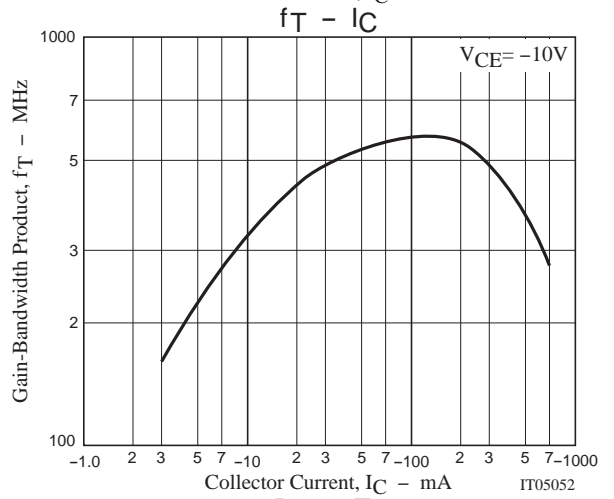
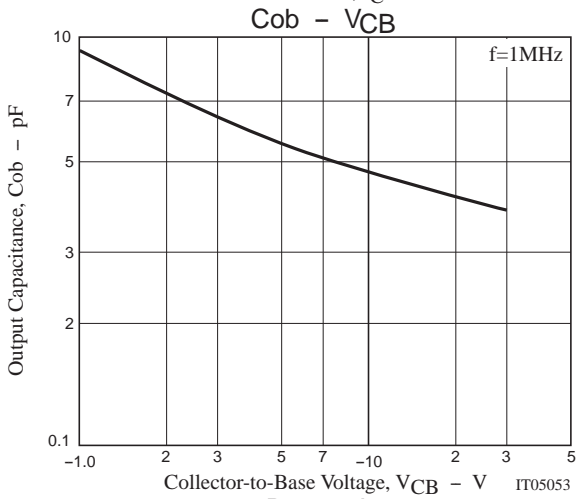
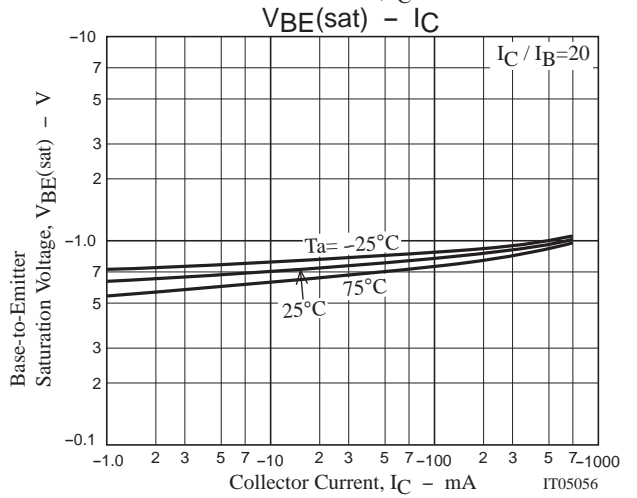
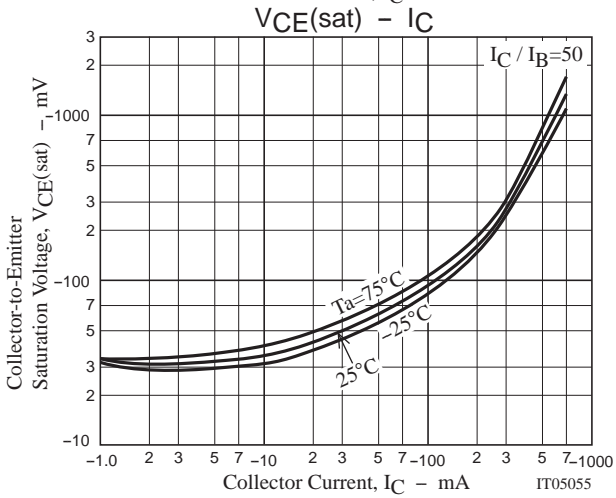
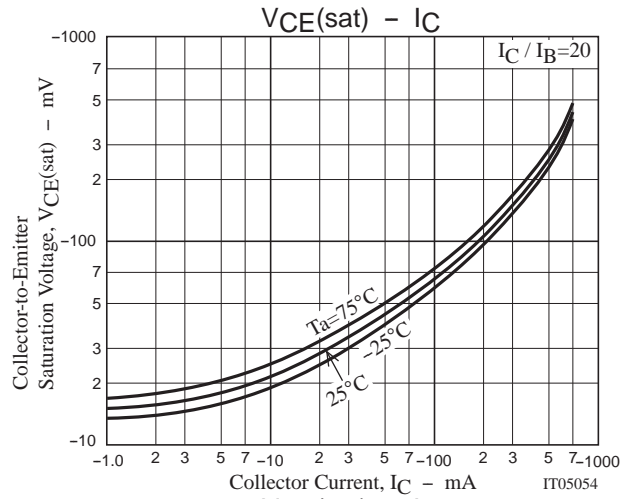
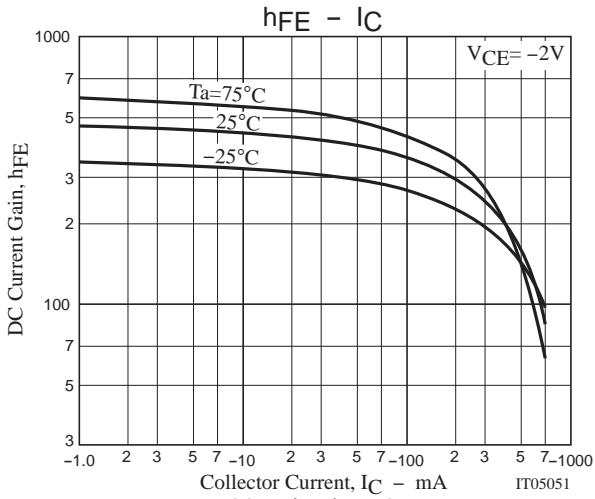
$$I_C = 20I_{B1} = -20I_{B2} = -300\text{mA}$$

Ordering Information

Device	Package	Shipping	memo
30A02CH-TL-E	CPH3	3,000pcs./reel	Pb Free



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Embossed Taping Specification

30A02CH-TL-E

1. Packing Format

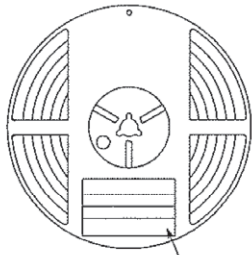
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH3	CPH3	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label (unit:mm)

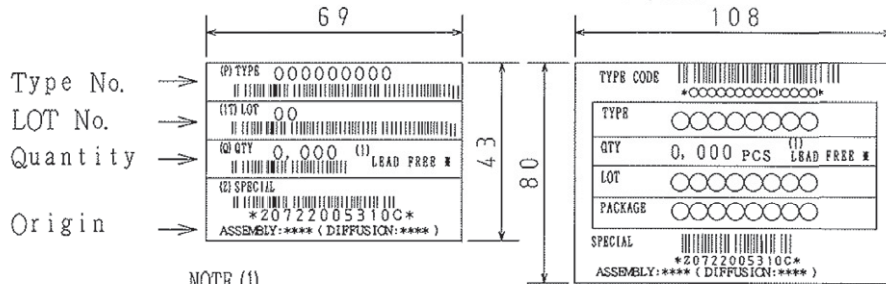
Outer box label

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



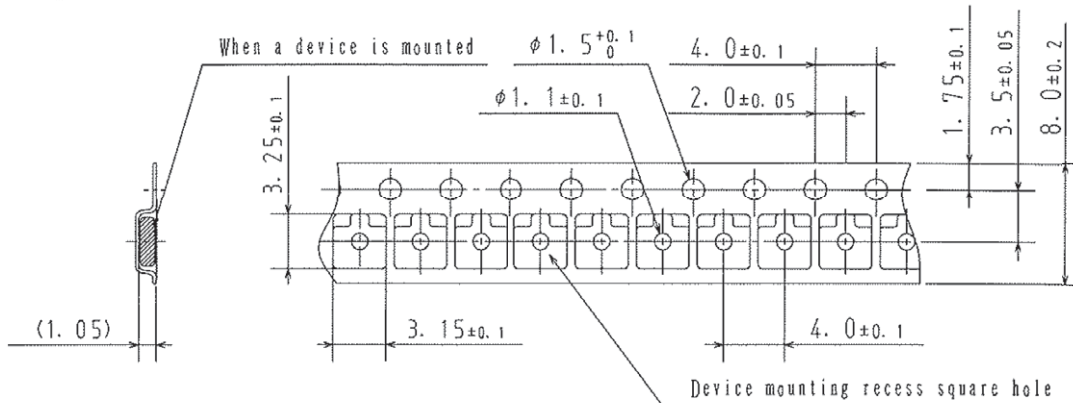
NOTE (1)

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

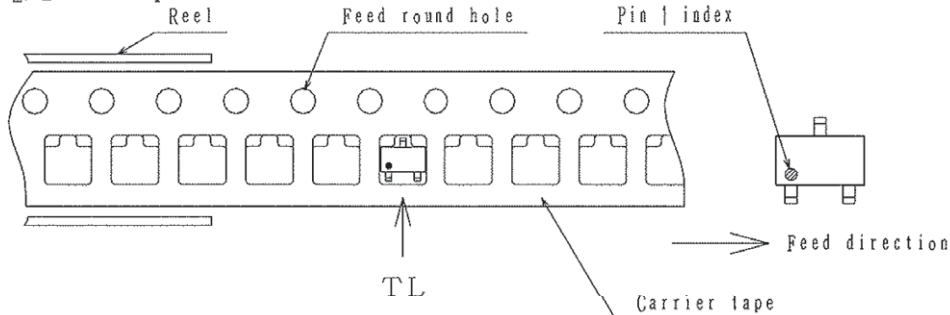
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

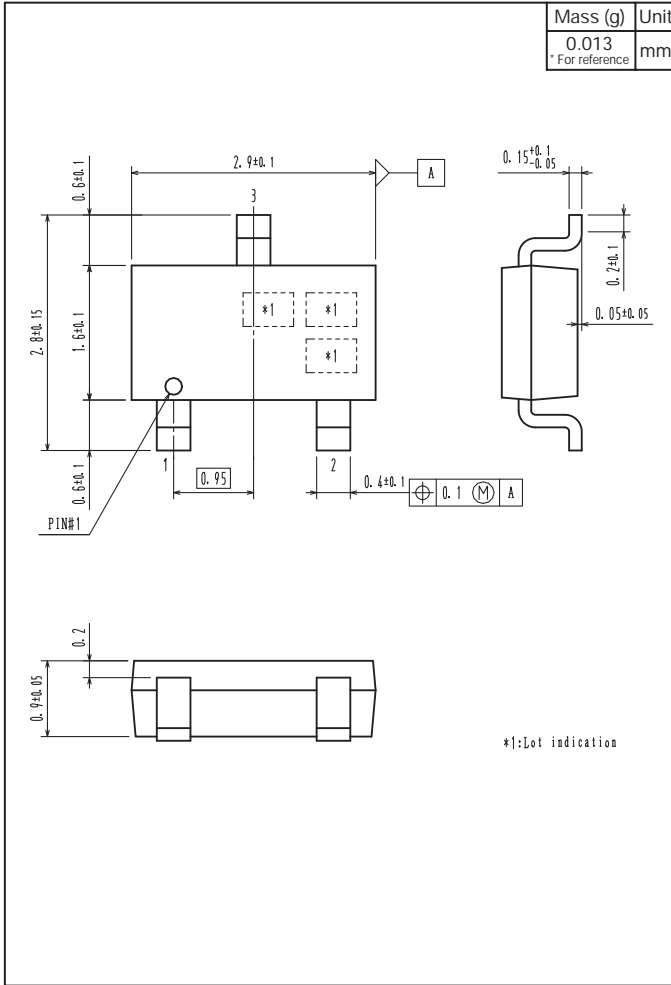


Those with one electrode terminal on the feed hole side.....TL

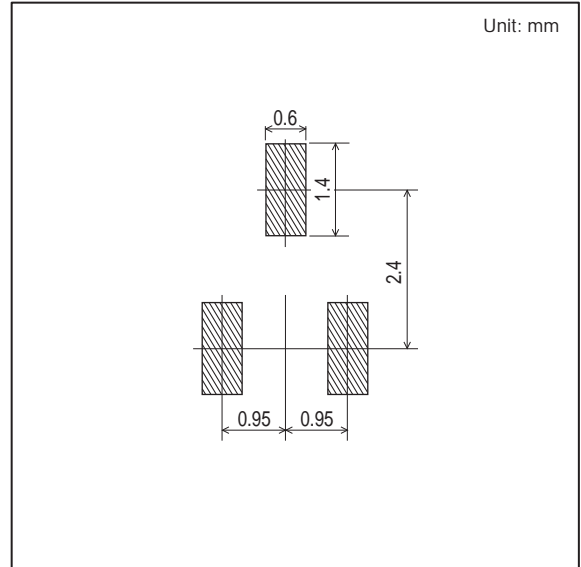
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Outline Drawing

30A02CH-TL-E



Land Pattern Example



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