Ordering number : EN7358A

30A02CH

Bipolar Transistor
−30V, −0.7A, Low V_{CE}(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.=580mΩ [I_C=0.7A, I_B=35mA]
- Small ON-resistance (Ron)

Specifications

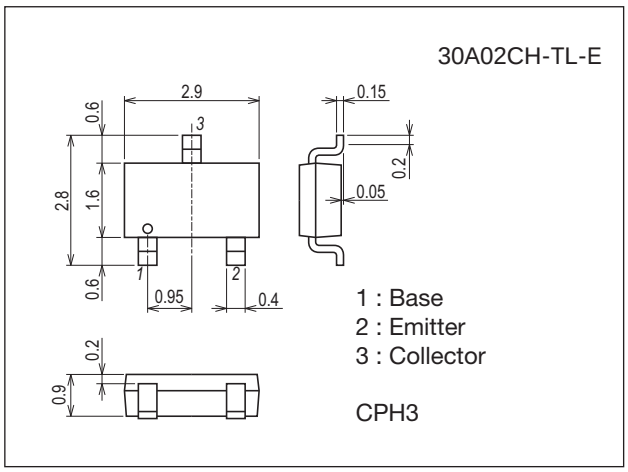
Absolute Maximum Ratings at Ta=25°C

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	P_C	Mounted on a ceramic board (600mm²×0.8mm)	700	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−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

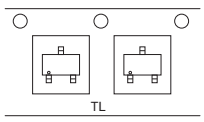
unit : mm (typ)
7015A-003



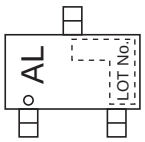
Product & Package Information

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

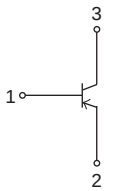
Packing Type: TL



Marking



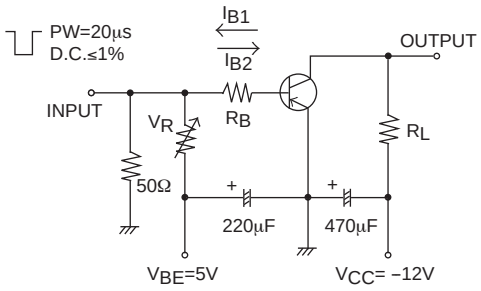
Electrical Connection



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= −10mA	200		500	
Gain-Bandwidth Product	f_T	V_{CE}= −10V, I_C= −50mA		520		MHz
Output Capacitance	Cob	V_{CB}= −10V, f=1MHz		4.7		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C= −200mA, I_B= −10mA		−110	−220	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	−30			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}			125		ns
Fall Time	t_f			25		ns

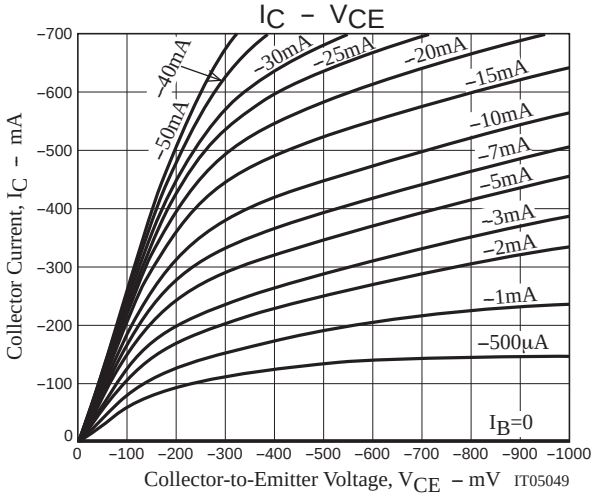
Switching Time Test Circuit

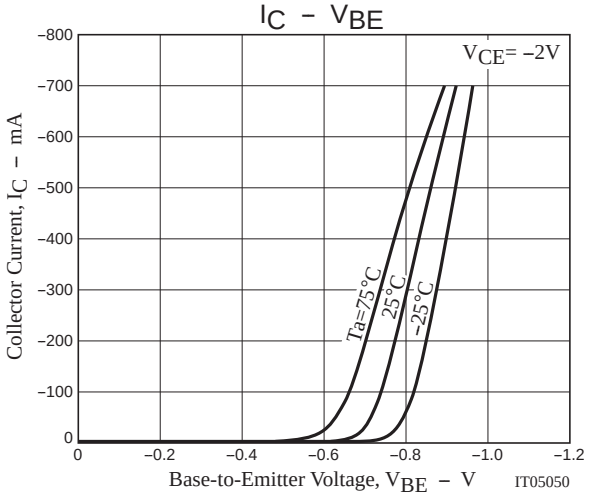


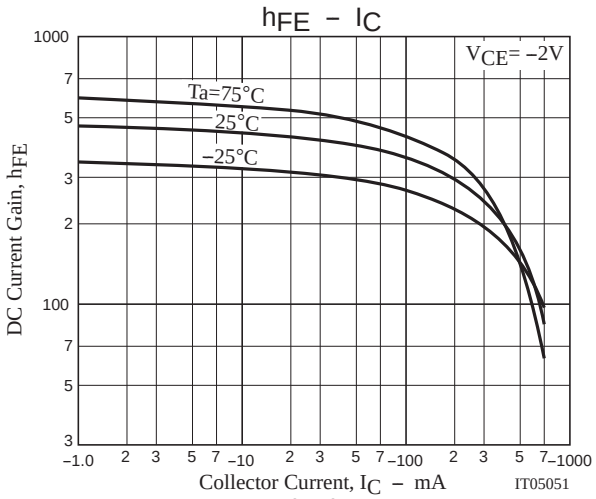
I_C=20I_{B1}= −20I_{B2}= −300mA

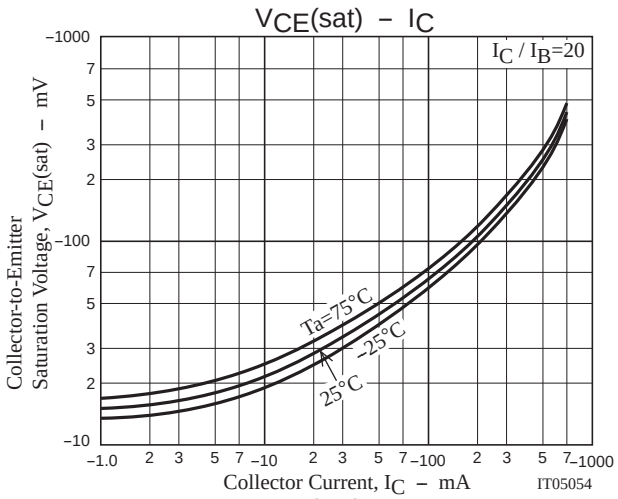
Ordering Information

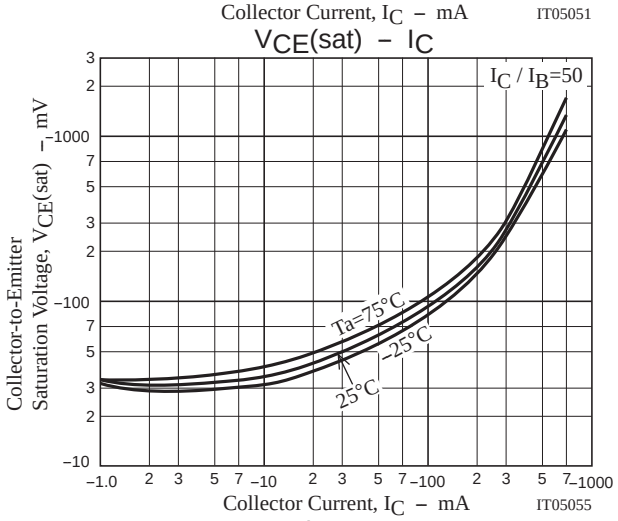
Device	Package	Shipping	memo
30A02CH-TL-E	CPH3	3,000pcs./reel	Pb Free

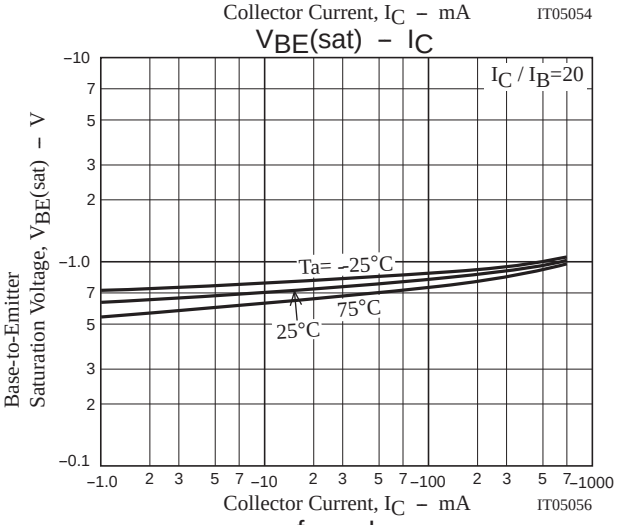


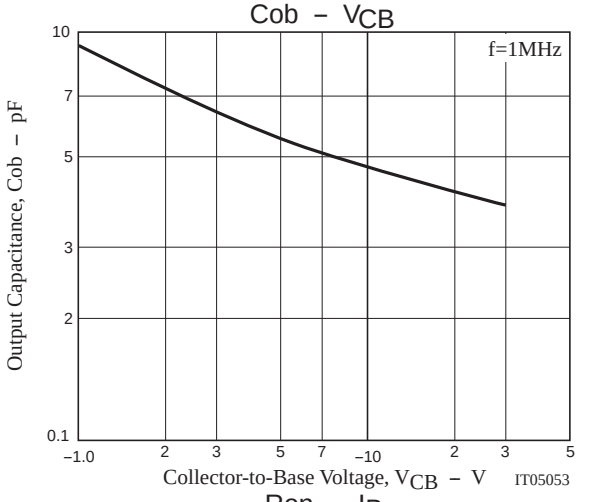


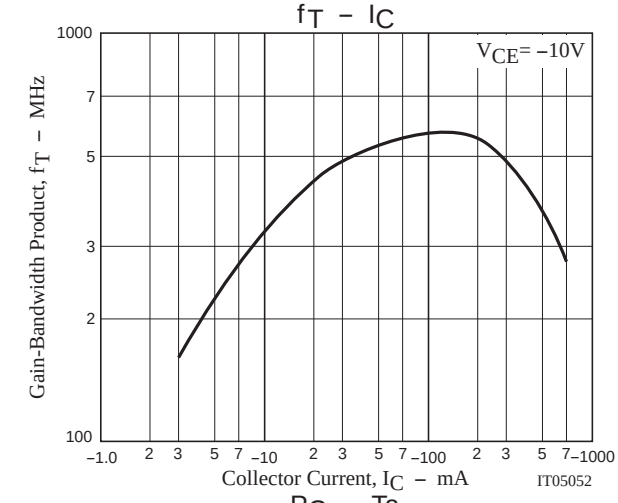

hFE – IC
VCE= –2V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA
IT05051

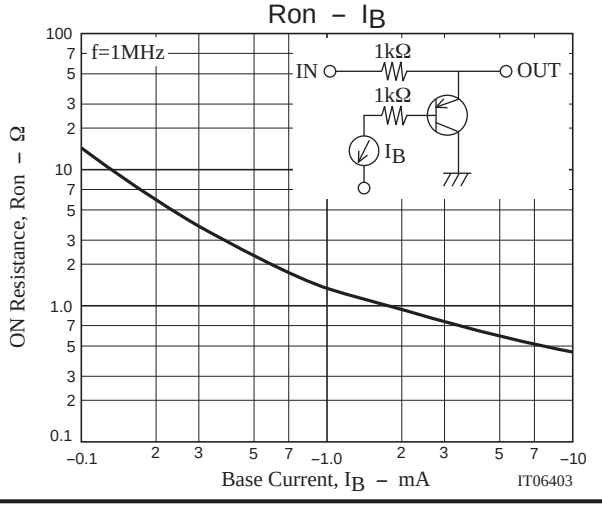

VCE(sat) – IC
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Ta=75°C
–25°C
25°C
Collector Current, IC – mA
IT05054

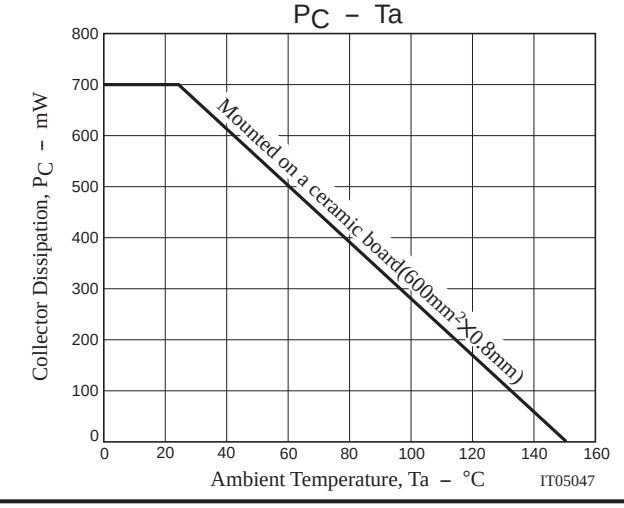

VCE(sat) – IC
IC / IB=50
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Ta=75°C
–25°C
25°C
Collector Current, IC – mA
IT05055


VBE(sat) – IC
IC / IB=20
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Ta= –25°C
75°C
25°C
Collector Current, IC – mA
IT05056


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT05053


fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT05052


Ron – IB
f=1MHz
IN
1kΩ
1kΩ
OUT
IB
ON Resistance, Ron – Ω
Base Current, IB – mA
IT06403


PC – Ta
Mounted on a ceramic board(600mm2×0.8mm)
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
IT05047

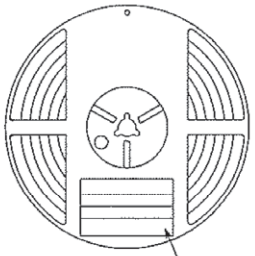
Embossed Taping Specification

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

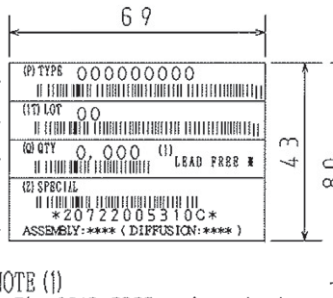
Packing method



Reel label

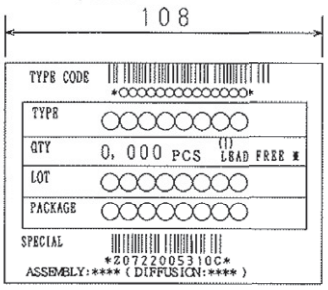
Reel label, Inner box label

(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.



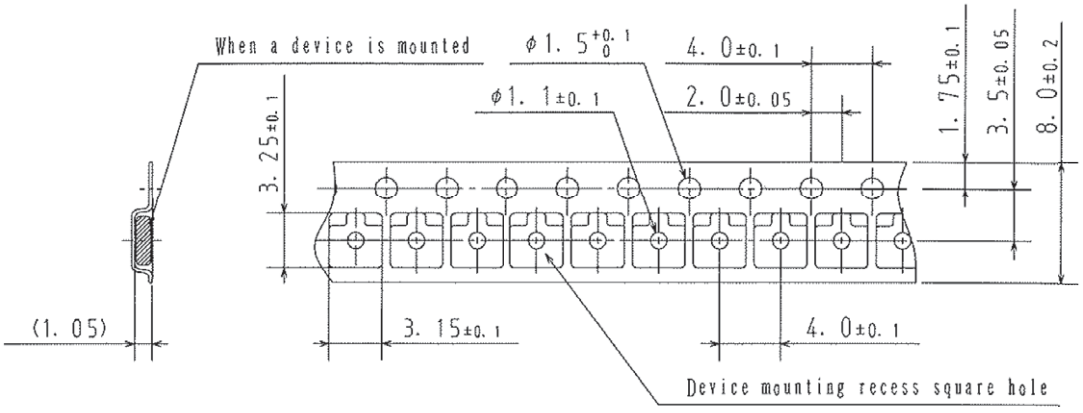
NOTE (1)

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

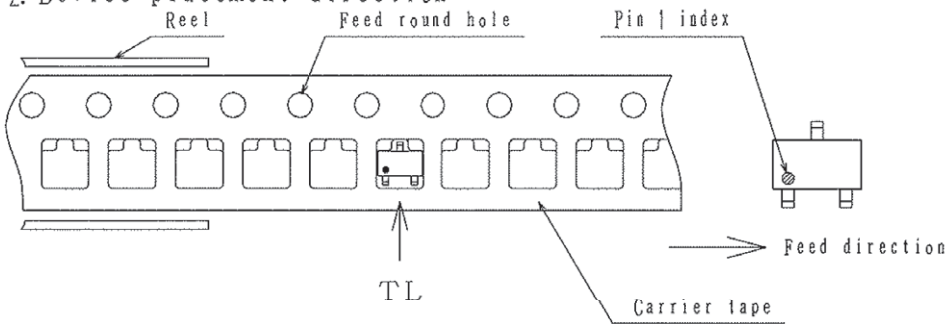
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



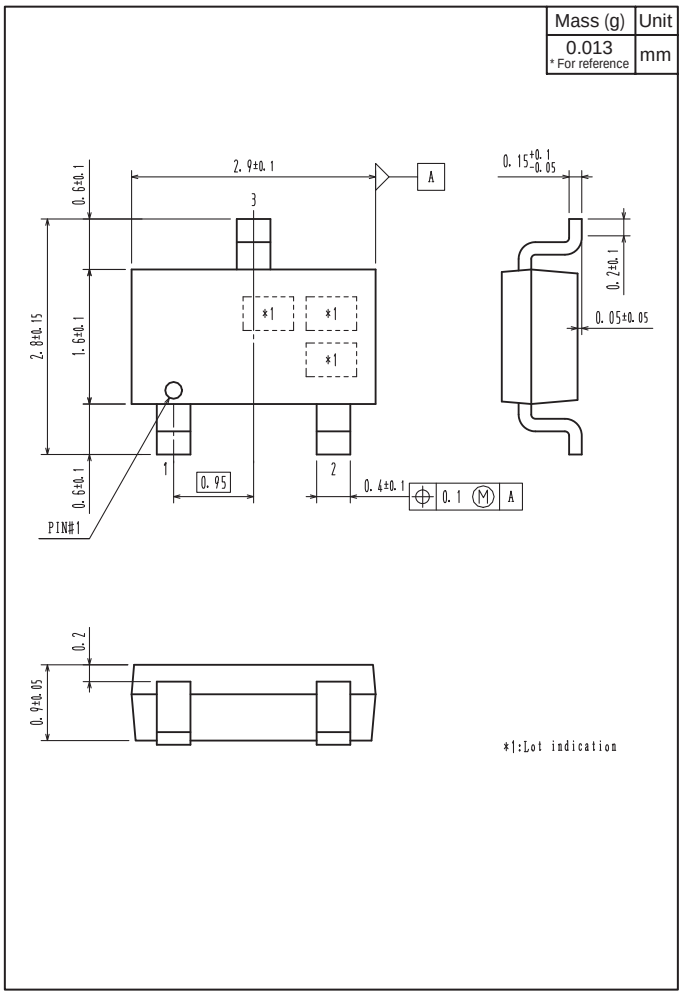
2-2. Device placement direction



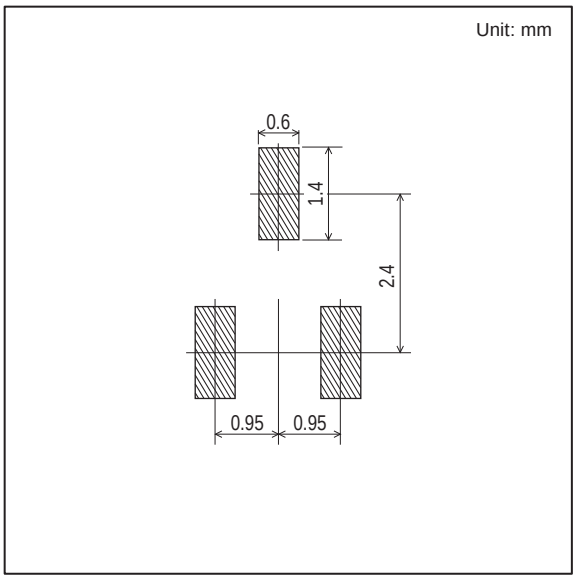
Those with one electrode terminal on the feed hole side·····TL

Outline Drawing

30A02CH-TL-E



Land Pattern Example



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