



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

NPN Epitaxial Planar Silicon Transistor

30C02MH — 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=330m Ω [$I_C=0.7A$, $I_B=35mA$]
- Ultrasmall package facilitates miniaturization in end products
- Small ON-resistance (R_{on})
- Halogen free compliance

Specifications

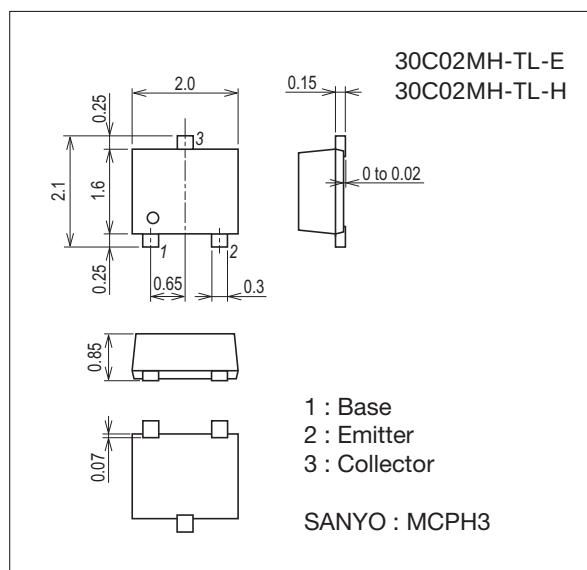
Absolute Maximum Ratings at $T_a=25^\circ C$

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)	600	mW
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

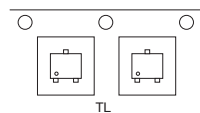
7019A-004



Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

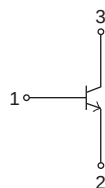
Packing Type : TL



Marking



Electrical Connection



SANYO Semiconductor Co., Ltd.

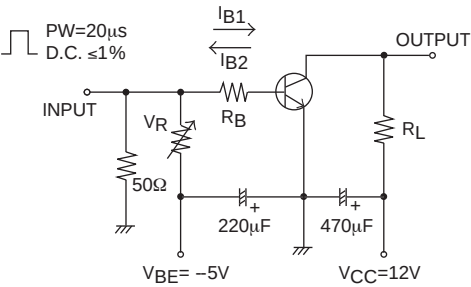
<http://semicon.sanyo.com/en/network>

30C02MH

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =30V, I _E =0A			100	nA
Emitter Cutoff Current	IEBO	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

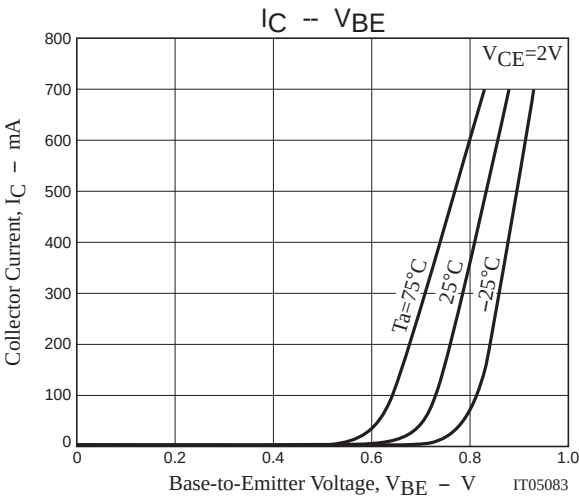
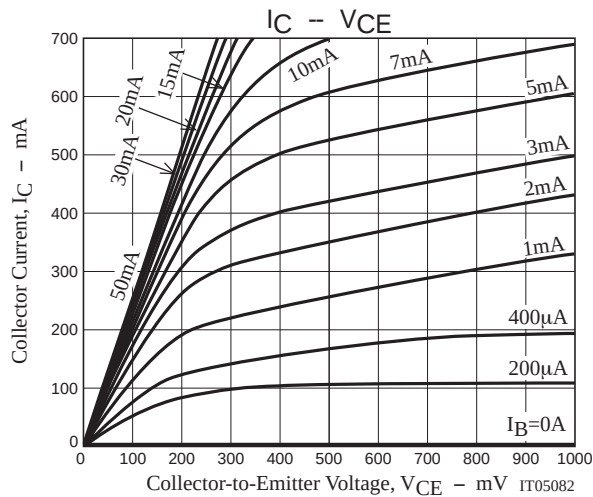
Switching Time Test Circuit



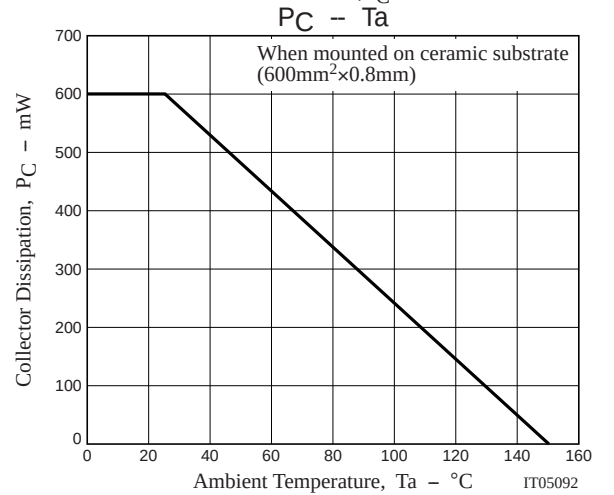
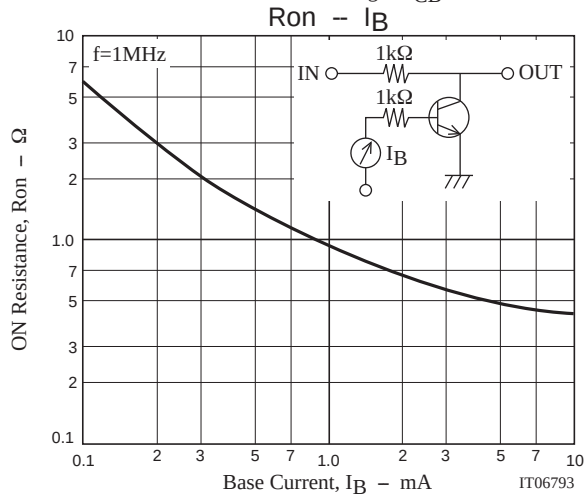
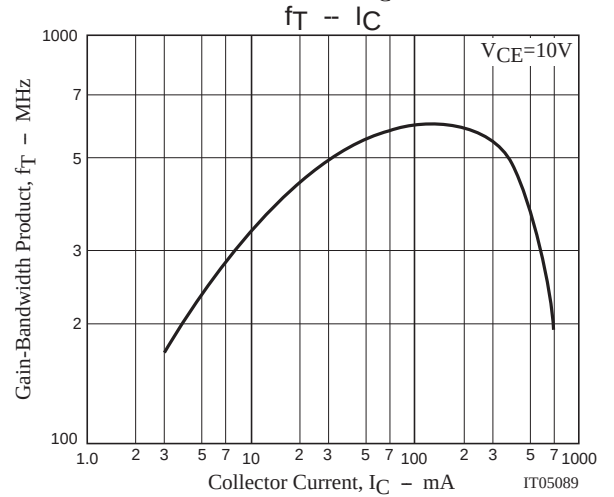
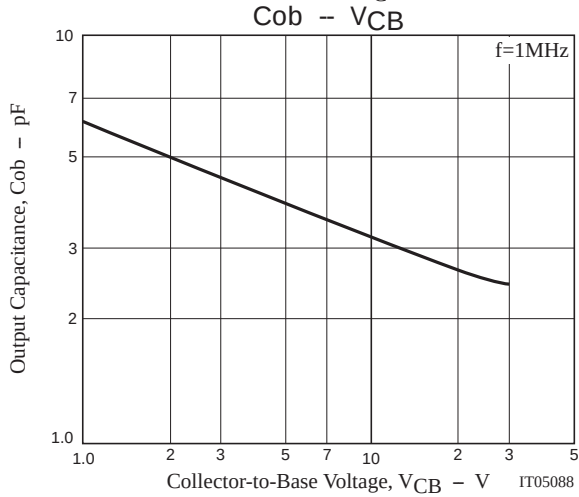
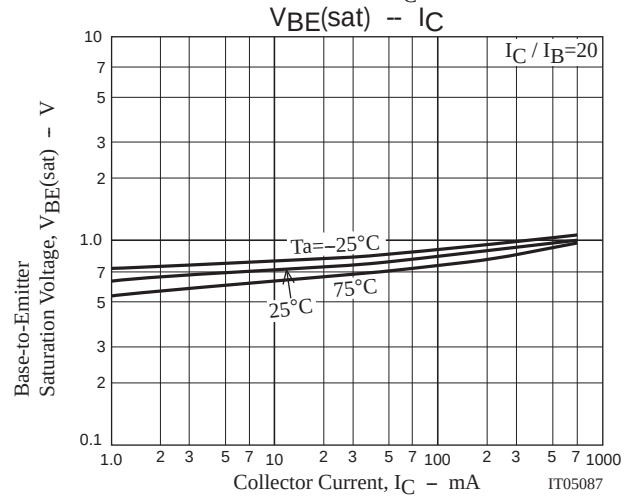
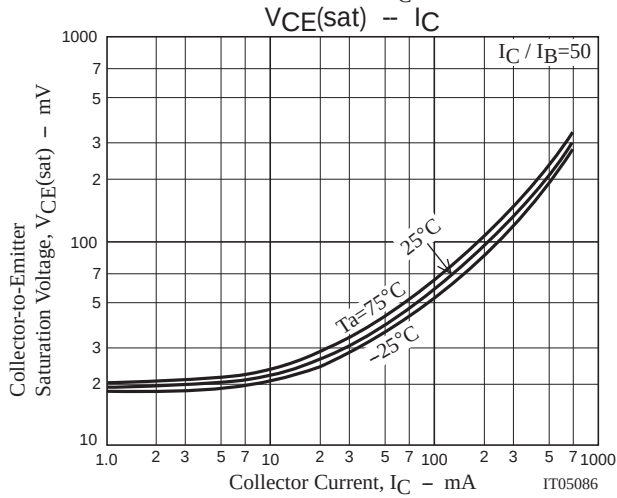
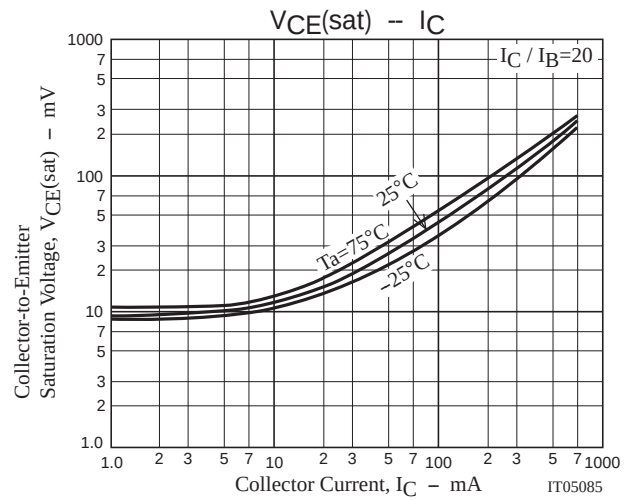
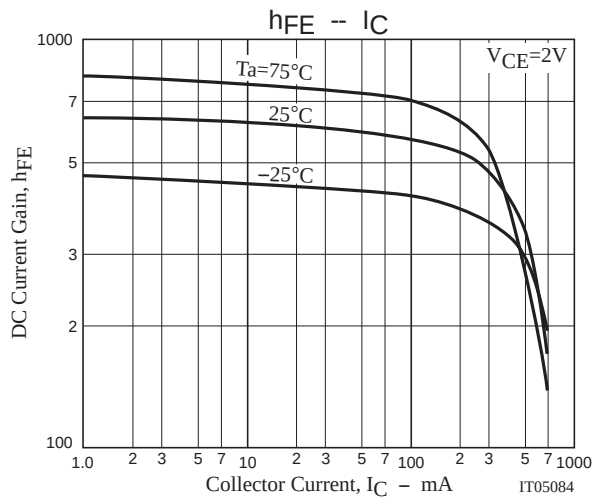
$I_C = 20I_{B1} = -20I_{B2} = 300mA$

Ordering Information

Device	Package	Shipping	memo
30C02MH-TL-E	MCPH3	3,000pcs./reel	Pb Free
30C02MH-TL-H	MCPH3	3,000pcs./reel	Pb Free and Halogen Free



30C02MH



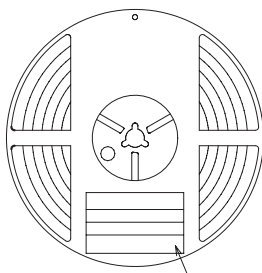
Embossed Taping Specification

30C02MH-TL-E, 30C02MH-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)
MCPH3	MCPH3	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



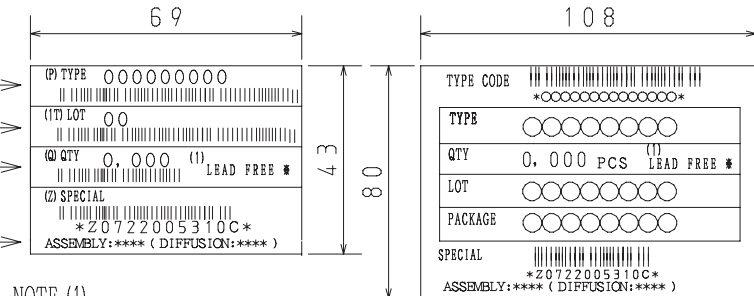
Type No.
LOT No.
Quantity
Origin

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.



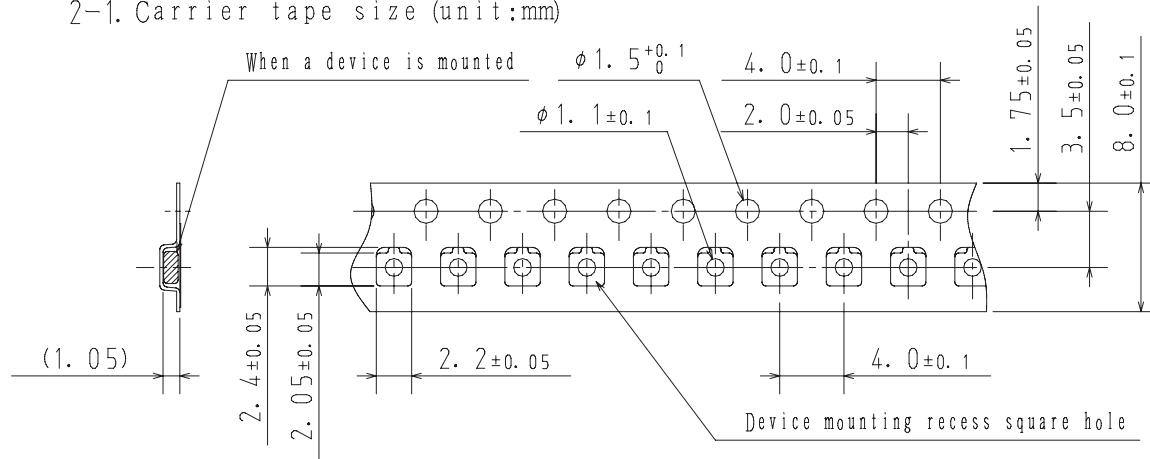
NOTE (1)

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

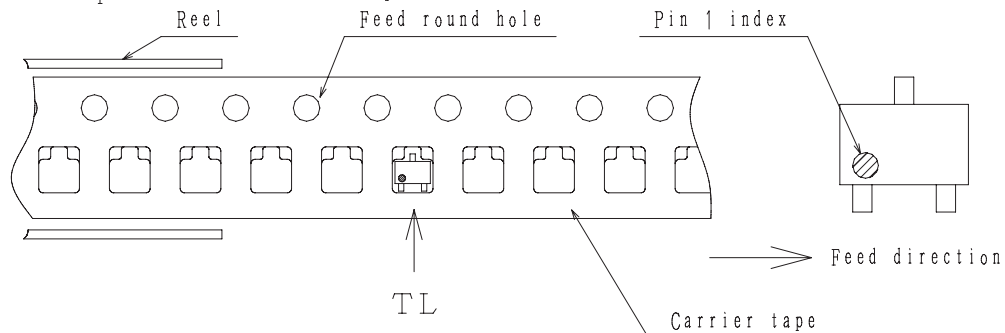
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



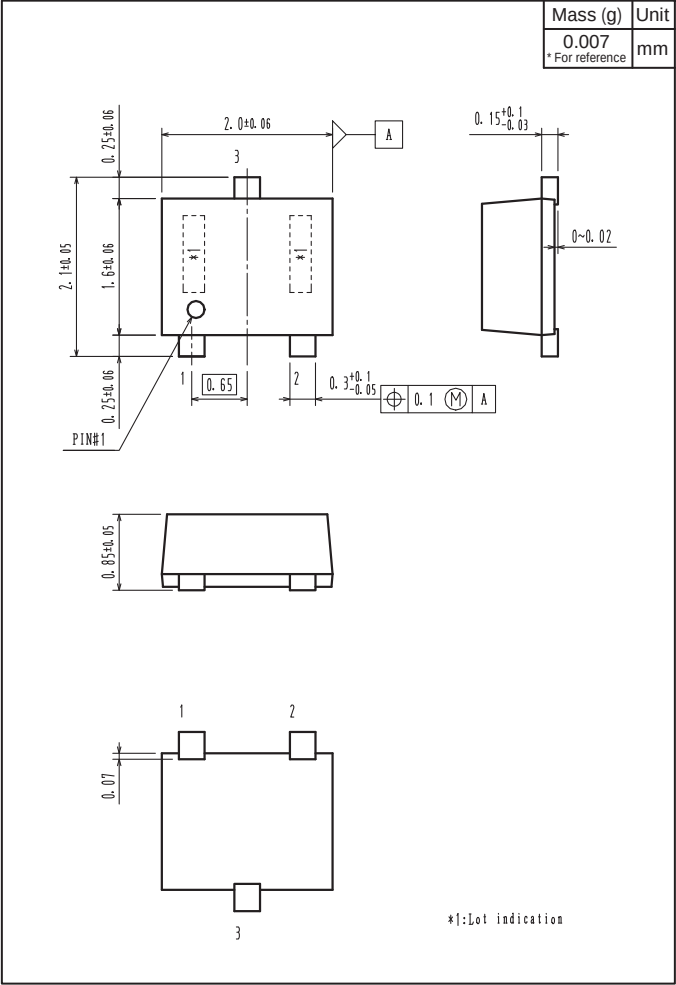
2-2. Device placement direction



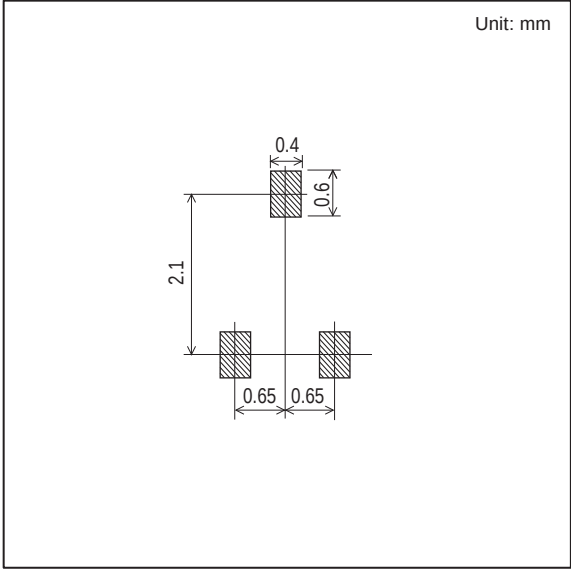
Those with pin 1 index on the feed hole side.....TL

Outline Drawing

30C02MH-TL-E, 30C02MH-TL-H



Land Pattern Example



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