



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

PNP Epitaxial Planar Silicon Transistor

50A02MH — Low-Frequency General-Purpose Amplifier Applications

Applications

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

Features

- Large current capacity
- Low collector-to-emitter saturation voltage (resistance) $R_{CE(sat)}$ typ=210m Ω [$I_C=0.5A$, $I_B=50mA$]
- Small ON-resistance (R_{on})

Specifications

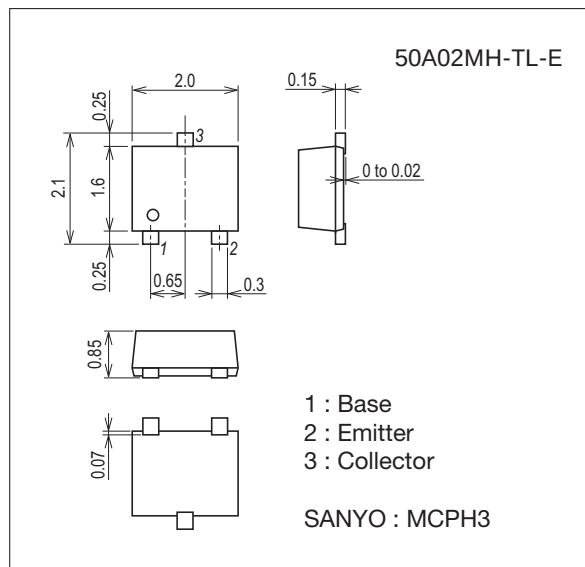
Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-50	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-500	mA
Collector Current (Pulse)	I_{CP}		-1.0	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)

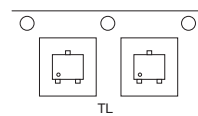
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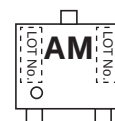
Product & Package Information

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

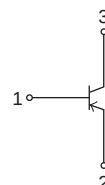
Packing Type : TL



Marking



Electrical Connection

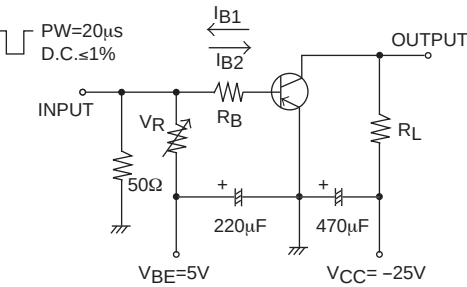


50A02MH

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} = -40V, 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 = -10mA	200		500	
Gain-Bandwidth Product	f _T	V _{CE} = -10V, I _C = -50mA		690		MHz
Output Capacitance	Cob	V _{CB} = -10V, f=1MHz		3.8		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C = -100mA, I _B = -10mA		-60	-120	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C = -100mA, I _B = -10mA		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C = -10μA, I _E =0A	-50			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C = -1mA, R _{BE} =∞	-50			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.		30		ns
Storage Time	t _{stg}			170		ns
Fall Time	t _f			30		ns

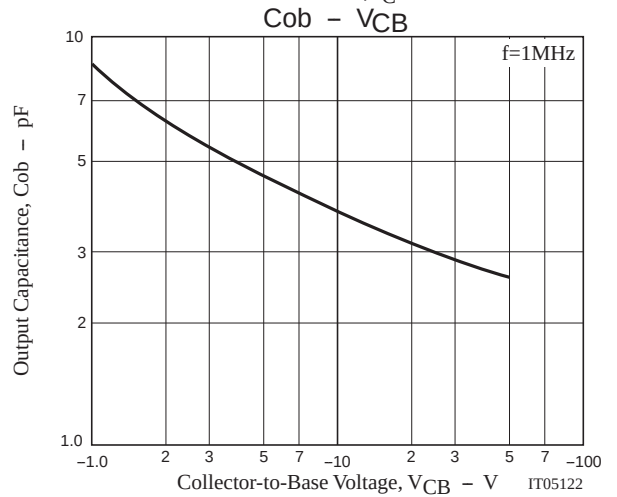
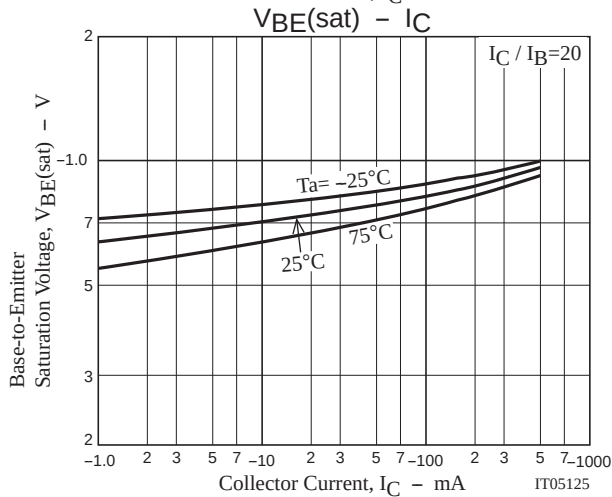
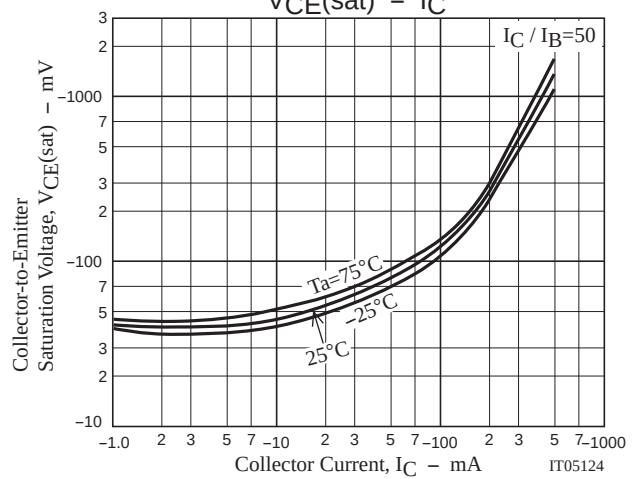
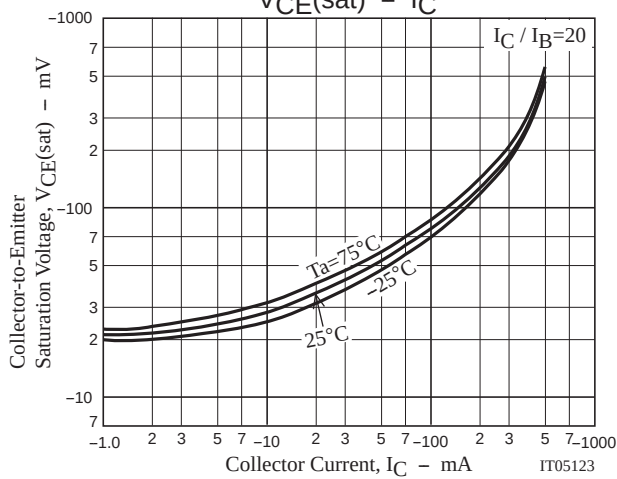
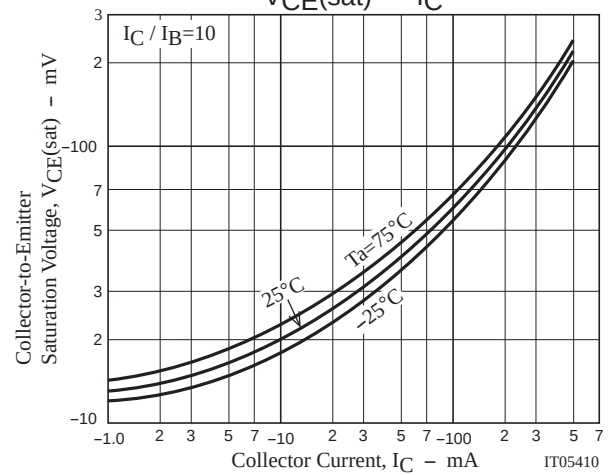
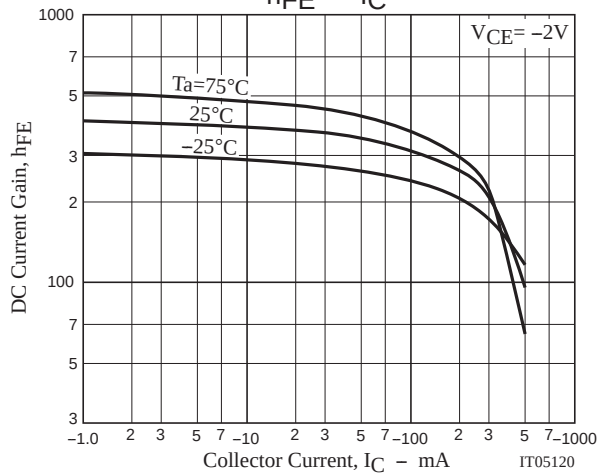
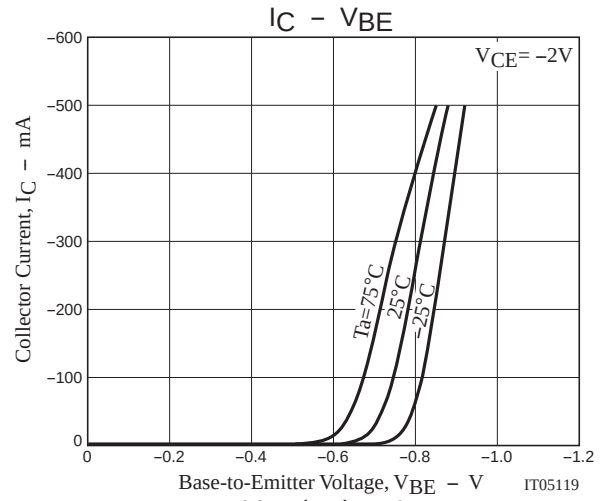
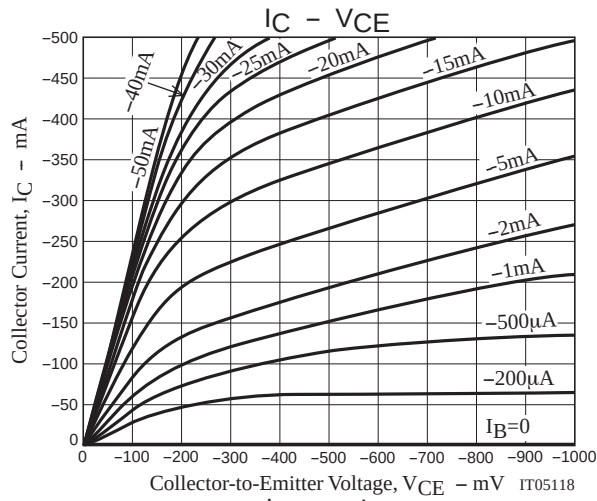
Switching Time Test Circuit



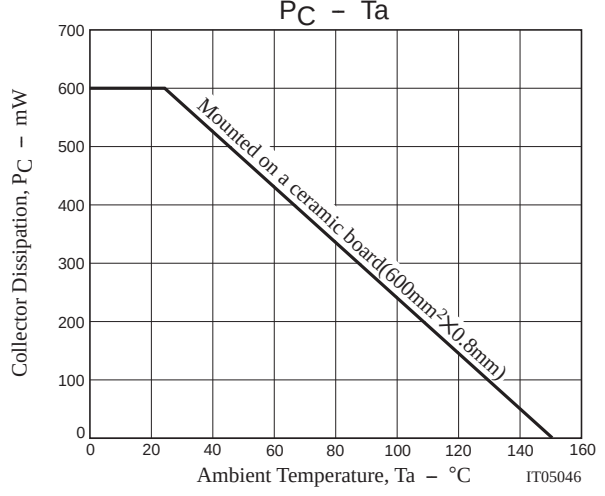
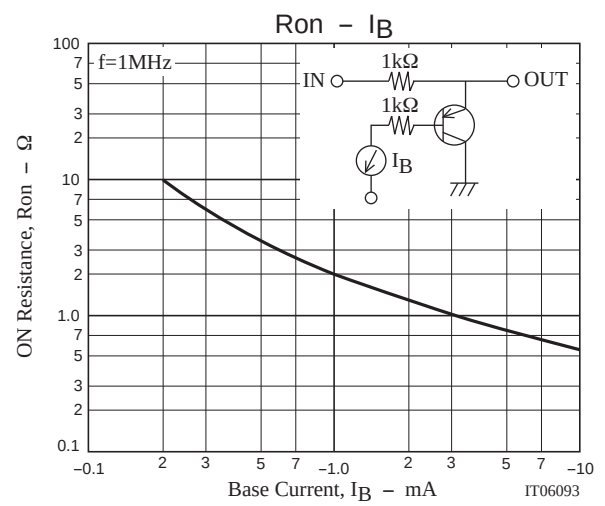
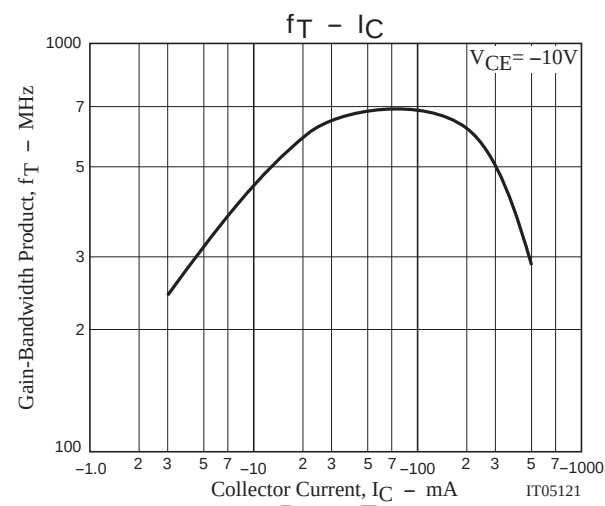
$I_C=20I_{B1}= -20I_{B2}= -200mA$

Ordering Information

Device	Package	Shipping	memo
50A02MH-TL-E	MCPH3	3,000pcs./reel	Pb Free



50A02MH



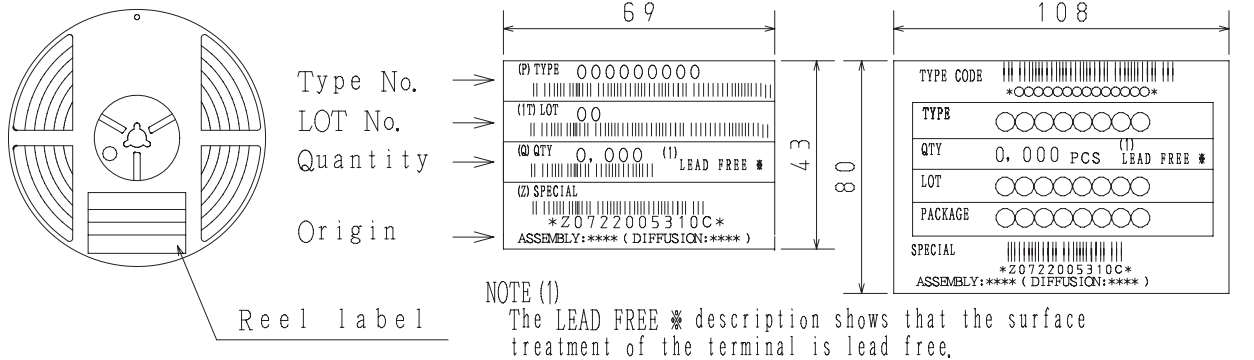
Embossed Taping Specification

50A02MH-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)
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

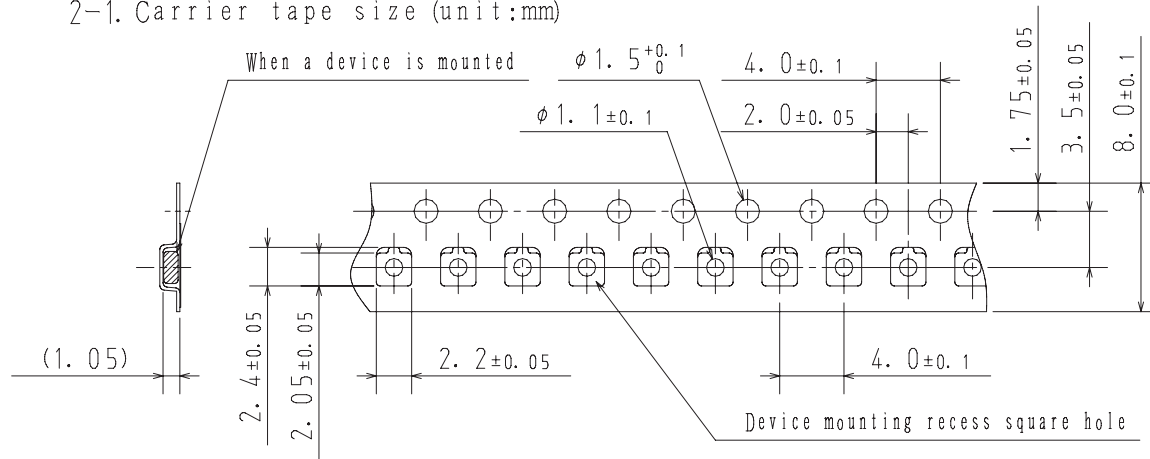
Packing method



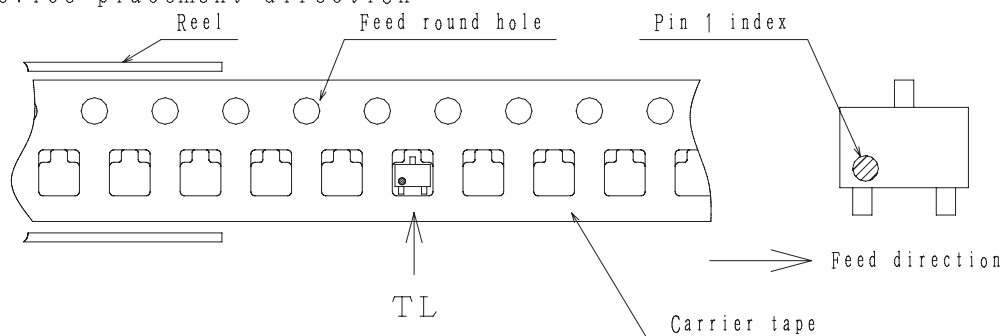
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

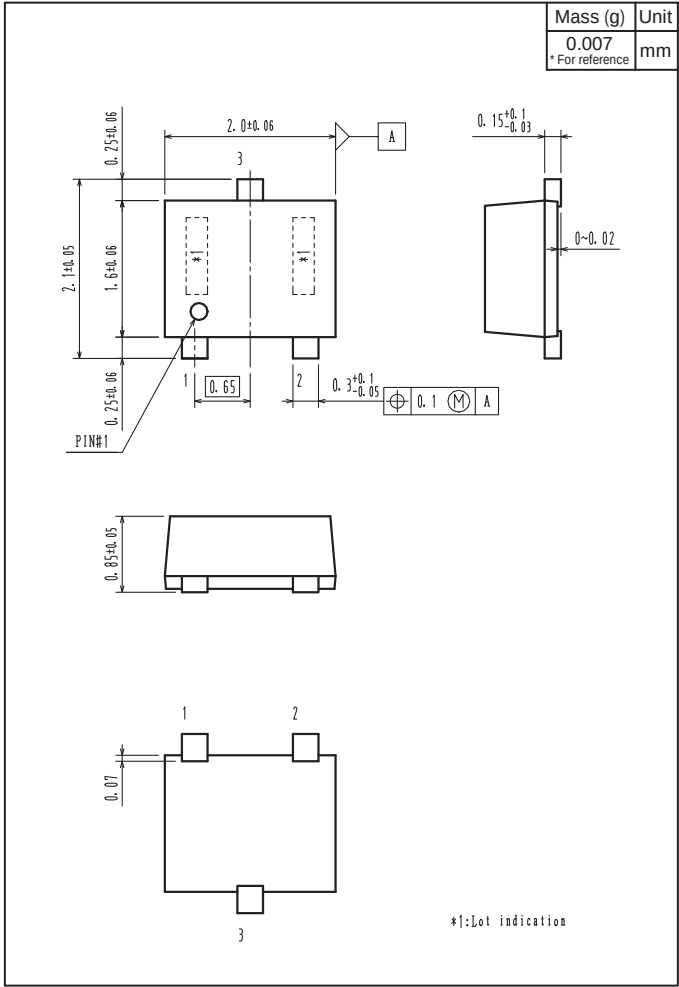


2-2. Device placement direction

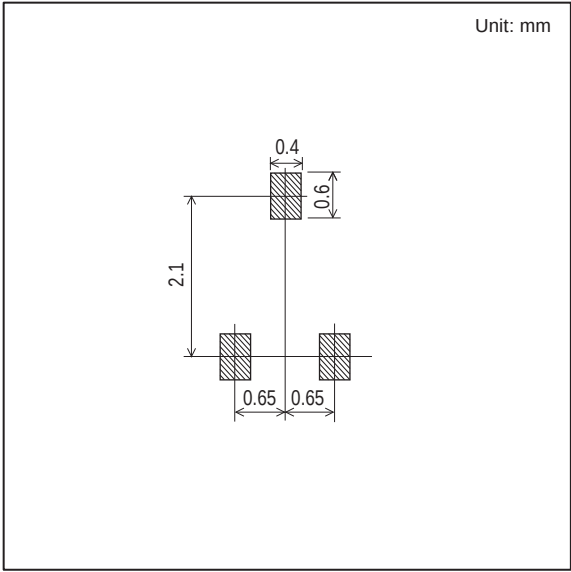


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
50A02MH-TL-E



Land Pattern Example



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