



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6536 — PNP / NPN Epitaxial Planar Silicon Transistor Push-Pull Circuit Applications

Applications

- MOSFET gate drivers, low-frequency power amplifier, high-speed switching, motor drivers

Features

- Composite type with a PNP transistor and an NPN transistor contained in one package facilitating high-density mounting
- Ultrasmall package permitting applied sets to be small and slim
- Small ON-resistance (Ron)

Specifications () : PNP

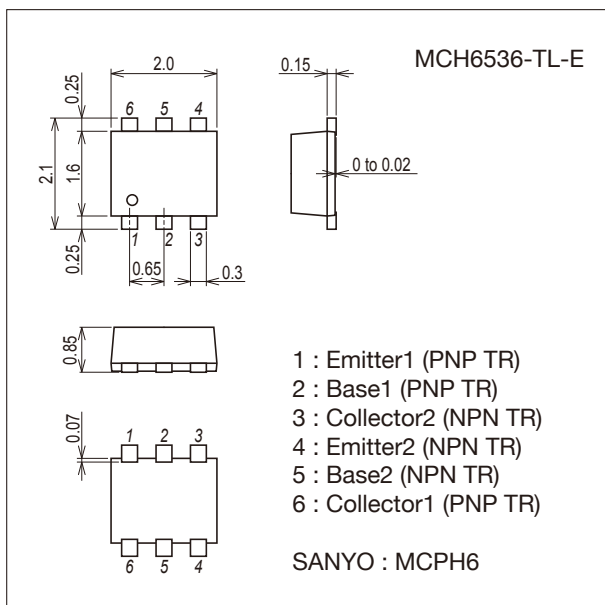
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		(-15)20	V
Collector-to-Emitter Voltage	VCEO		(-12)15	V
Emitter-to-Base Voltage	VEBO		(-5)	V
Collector Current	IC		(-500)700	mA
Collector Current (Pulse)	ICP		(-1.0)1.4	A
Collector Dissipation	PC	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.5	W
Total Power Dissipation	PT	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.55	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Package Dimensions

unit : mm (typ)

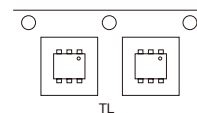
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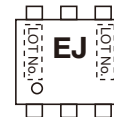
Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

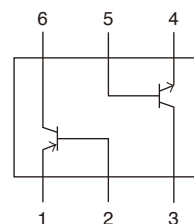
Packing Type : TL



Marking



Electrical Connection



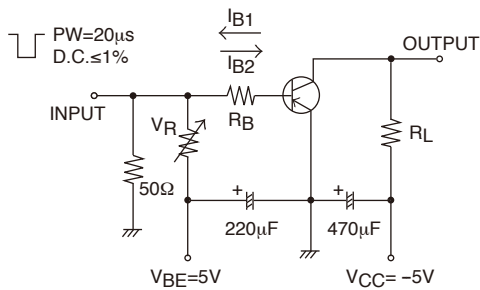
MCH6536

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-12)15V, I_E=0A$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0A$			(-)100	nA
DC Current Gain	h_{FE}	$V_{CE}=(-)2V, I_C=(-)10mA$	300		(700)800	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)2V, I_C=(-)50mA$		(490)330		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(4)3.2		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)200mA, I_B=(-)10mA$		(-)150	(-)300	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	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-15)20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-12)15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-)5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}			(57)77		ns
Fall Time	t_f			(30)40		ns

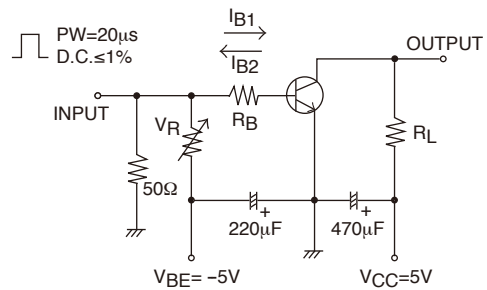
Switching Time Test Circuit

[PNP]



$$I_C=20I_{B1} = -20I_{B2} = -400mA$$

[NPN]

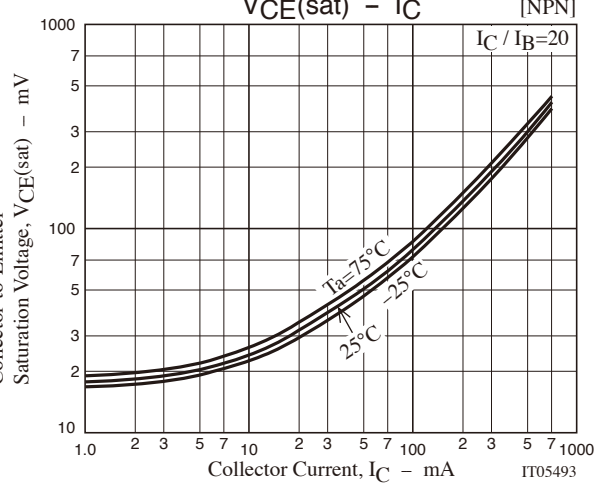
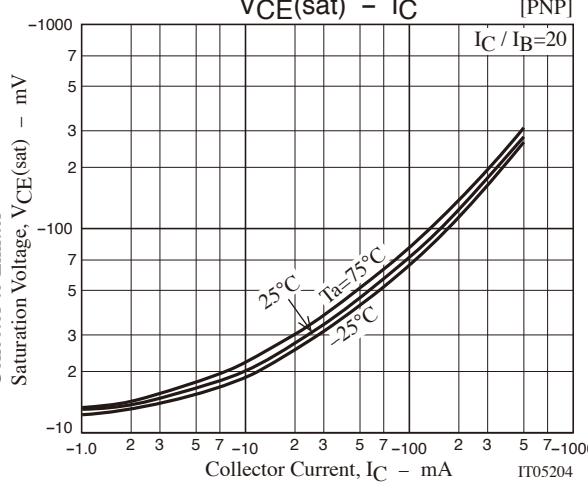
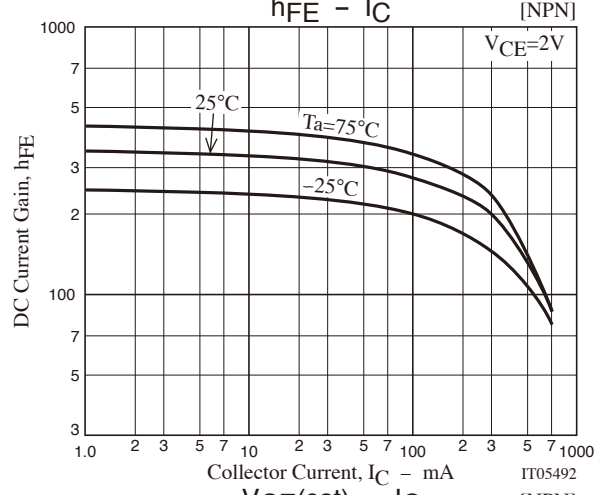
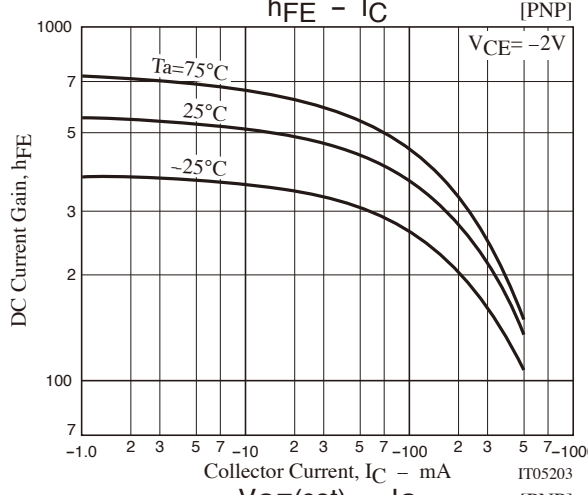
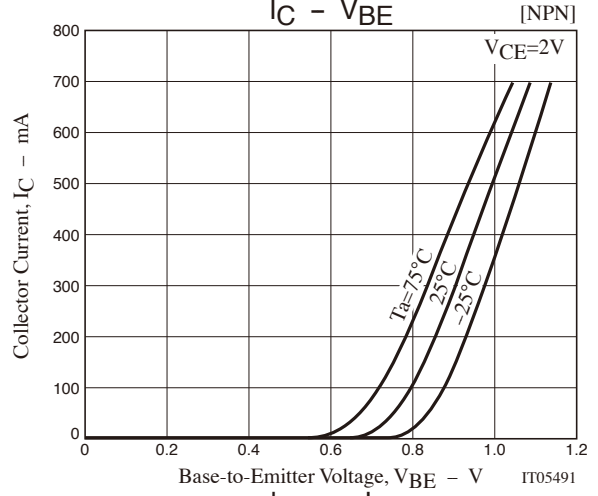
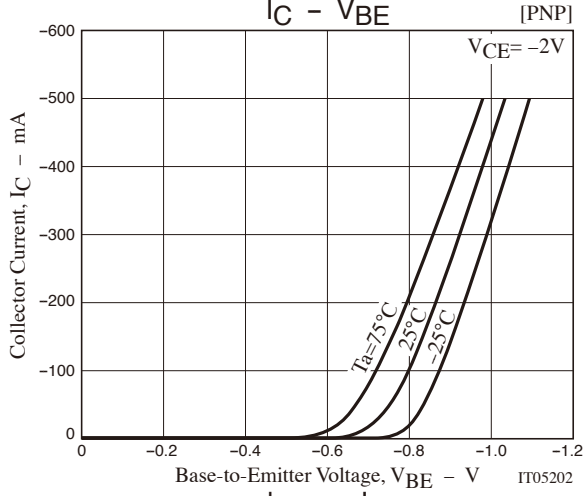
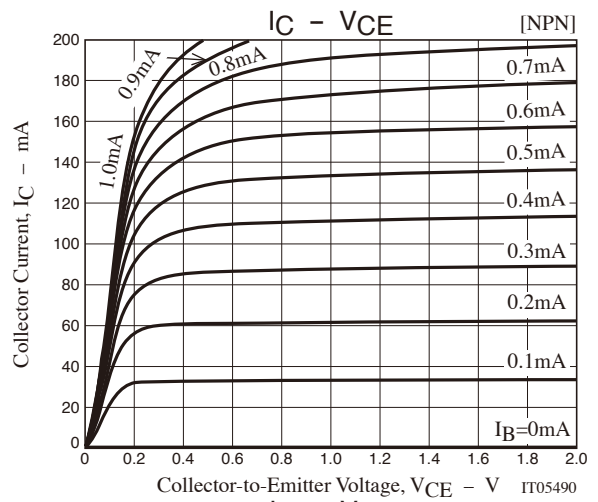
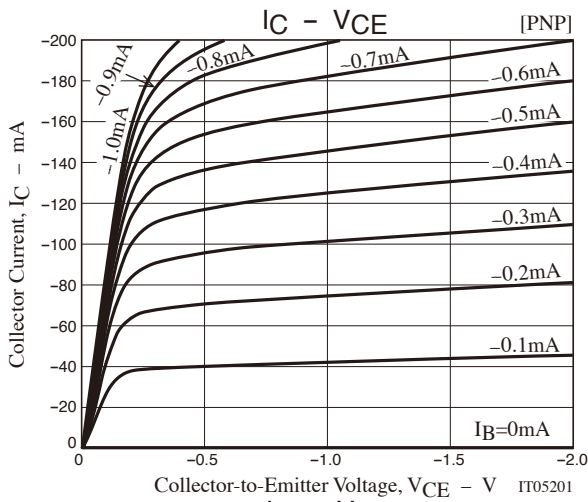


$$I_C=20I_{B1} = -20I_{B2} = 500mA$$

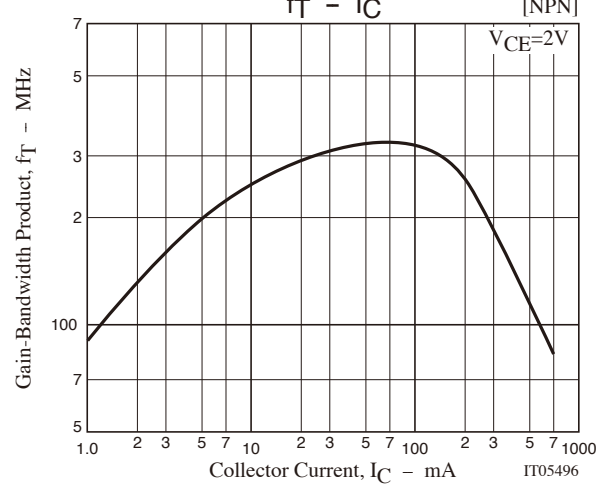
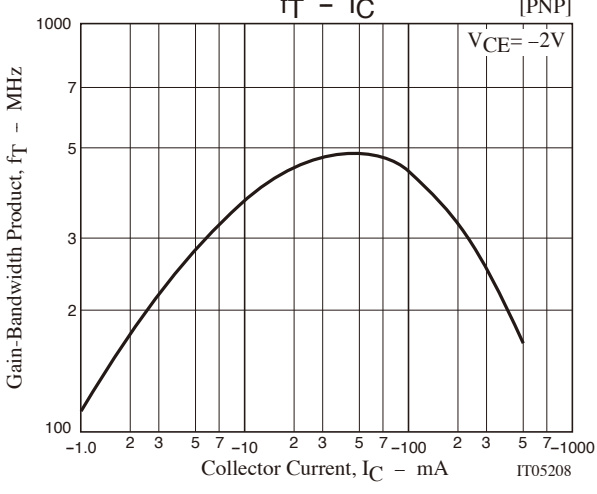
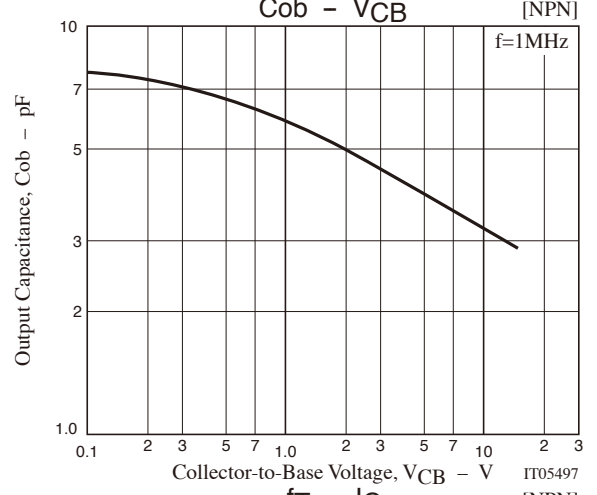
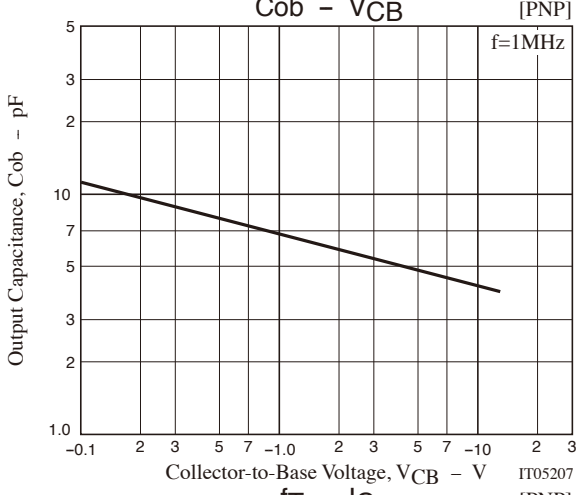
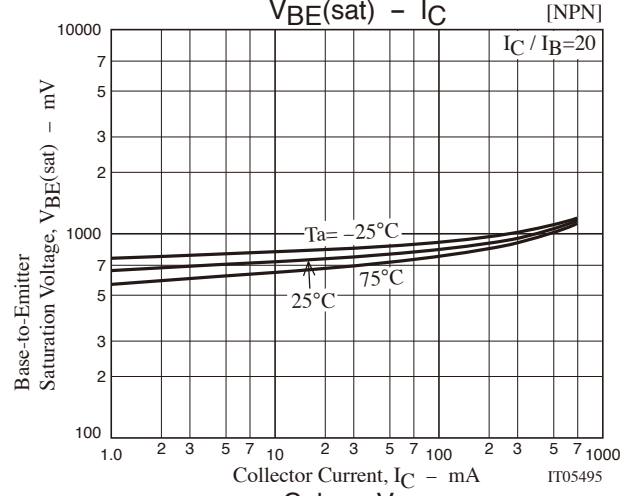
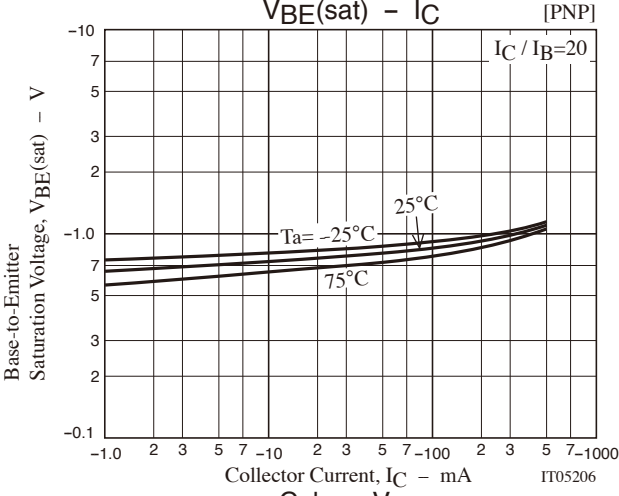
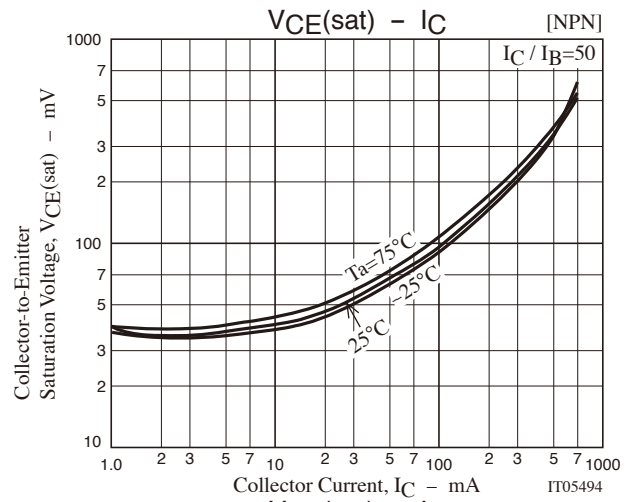
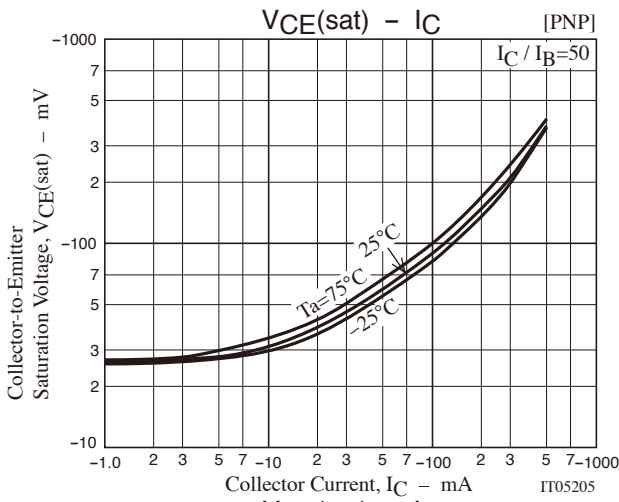
Ordering Information

Device	Package	Shipping	memo
MCH6536-TL-E	MCPH6	3,000pcs./reel	Pb Free

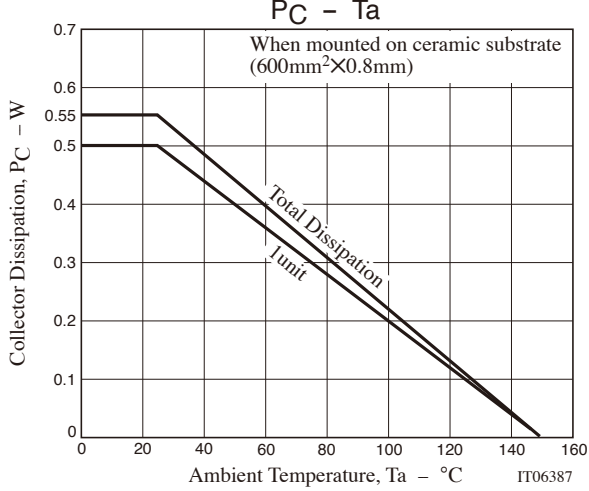
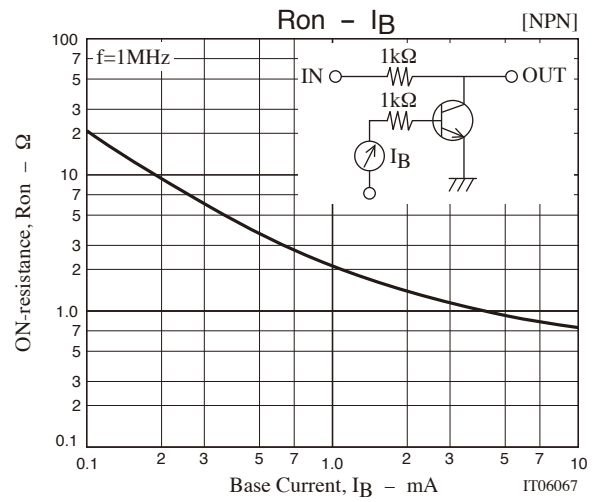
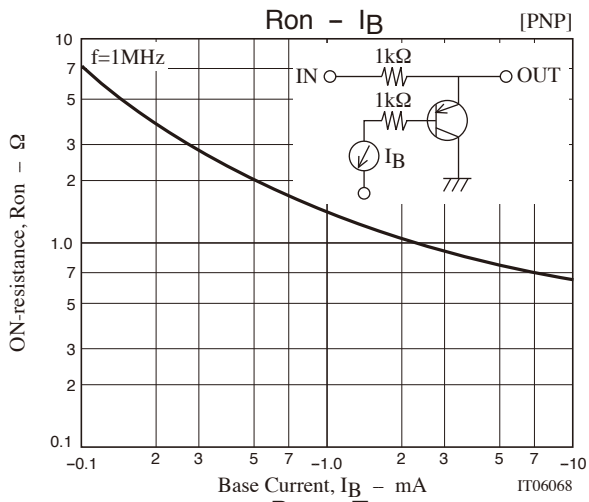
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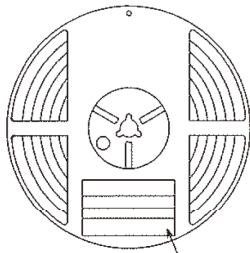
Embossed Taping Specification

MCH6536-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)
MCPH6	MCP4	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



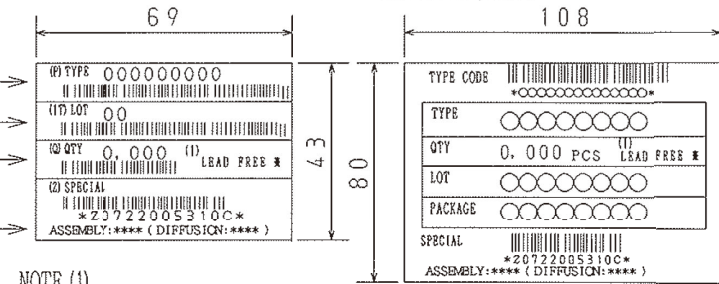
Type No.
LOT No.
Quantity
Origin

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)

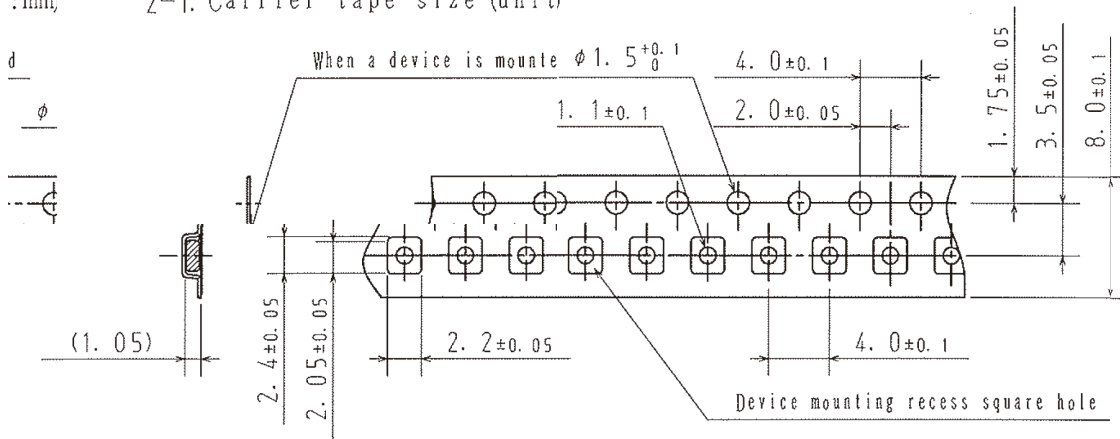
The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

Label	JEITA Phase
1) FREE 3	JEITA Phase 3A
2) FREE 4	JEITA Phase 3

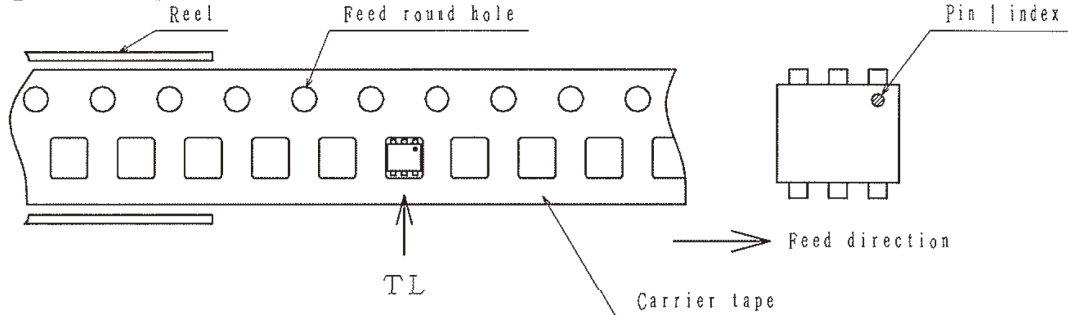
LEAD
LEAD

2. Taping configuration

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



2-2. Device placement direction

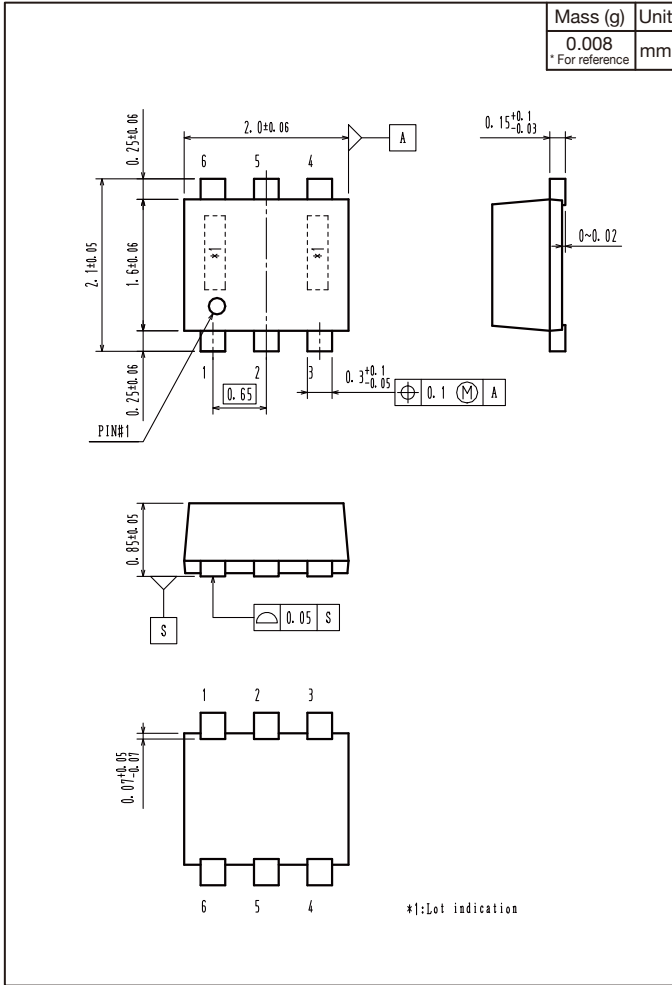


Those with pin 1 index on the feed hole side.....TL

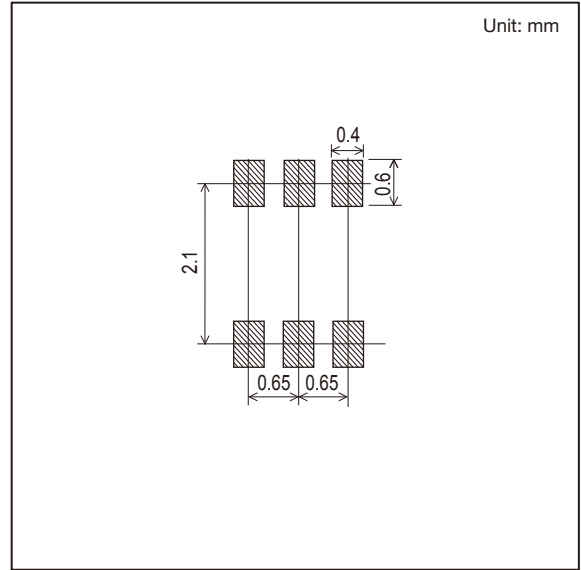
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Outline Drawing

MCH6536-TL-E



Land Pattern Example



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