



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH3145/MCH3245 — PNP / NPN Epitaxial Planar Silicon Transistors

DC / DC Converter Applications

Applicaitions

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- Low collector-to-emitter saturation voltage
- Ultrasmall package permitting applied sets to be small and slim (mounting height : 0.85mm)
- High allowable power dissipation
- Large current capacity
- High-speed switching

Specifications () : MCH3145

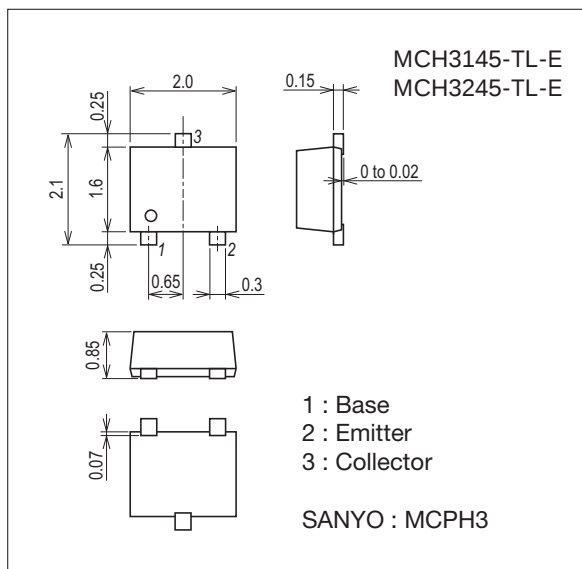
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		(-50)80	V
Collector-to-Emitter Voltage	V _{CES}		(-50)80	V
	V _{CEO}		(-)50	V
Emitter-to-Base Voltage	V _{EBO}		(-)6	V
Collector Current	I _C		(-)2	A
Collector Current (Pulse)	I _{CP}		(-)4	A
Base Current	I _B		(-)400	mA
Collector Dissipation	P _C	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.8	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

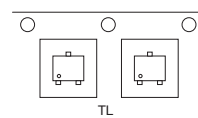
7019A-004



Product & Package Information

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

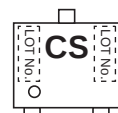
Packing Type : TL



Marking

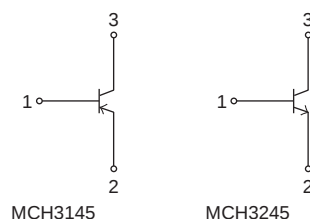


MCH3145



MCH3245

Electrical Connection

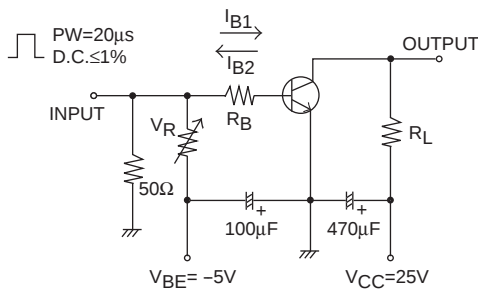


MCH3145/MCH3245

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40V, I_E=0A$			(-) 1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0A$			(-) 1	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)2V, I_C=(-)100mA$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10V, I_C=(-)300mA$		420		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(16) 8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$		(-165) 130	(-330) 260	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$		(-) 0.9	(-) 1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-50) 80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=(-)100\mu A, R_{BE}=0A$	(-50) 80			V
	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-) 50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-) 6			V
Turn-On Time	t_{on}	See specified Test Circuit.		(35) 35		ns
Storage Time	t_{stg}			(200) 330		ns
Fall Time	t_f			(24) 40		ns

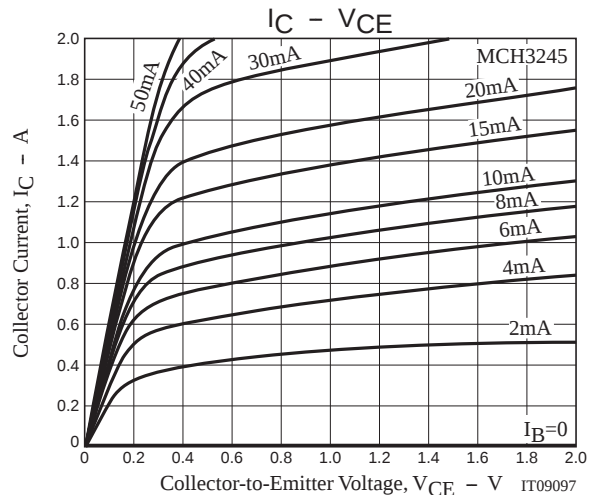
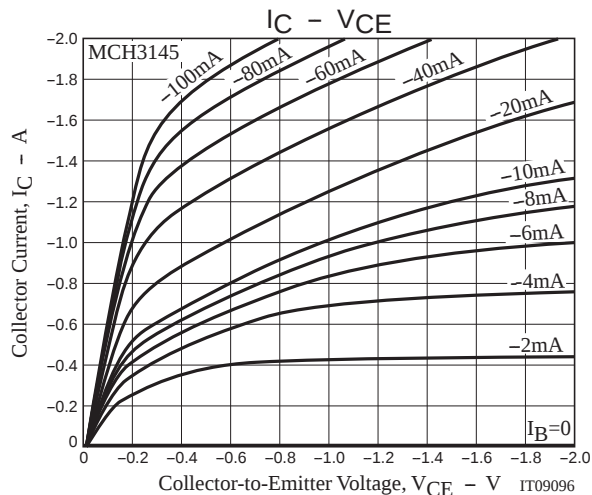
Switching Time Test Circuit



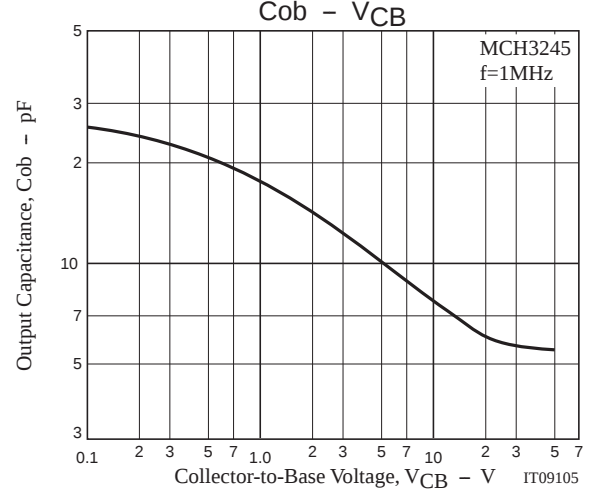
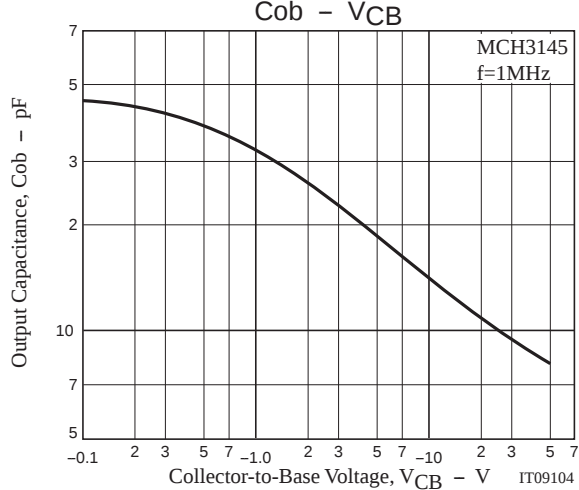
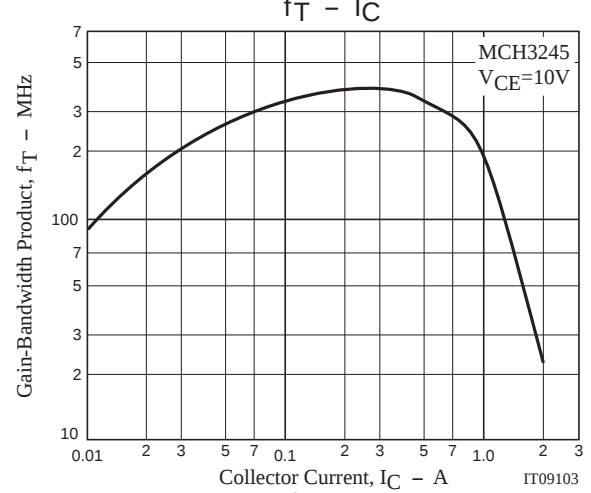
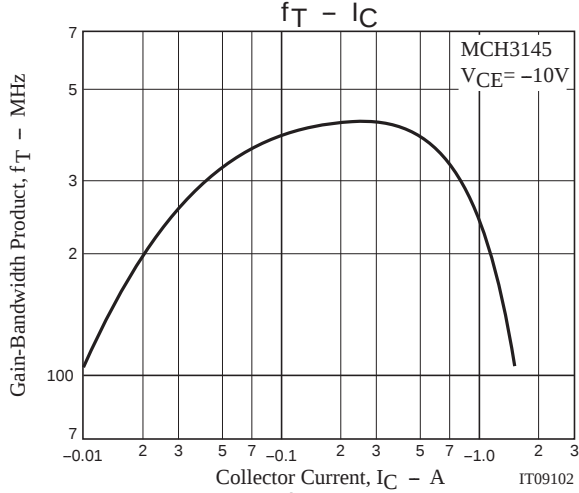
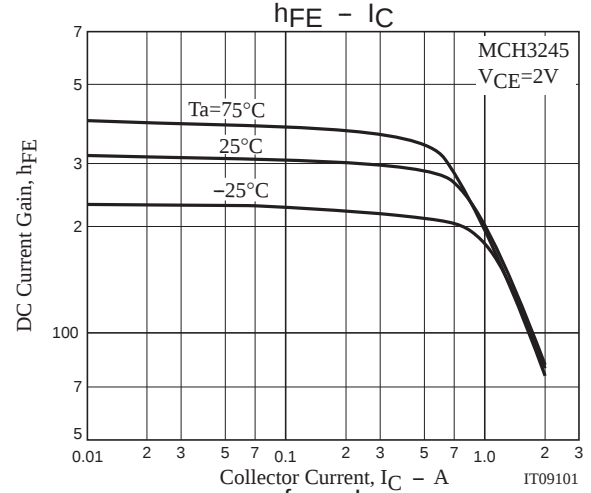
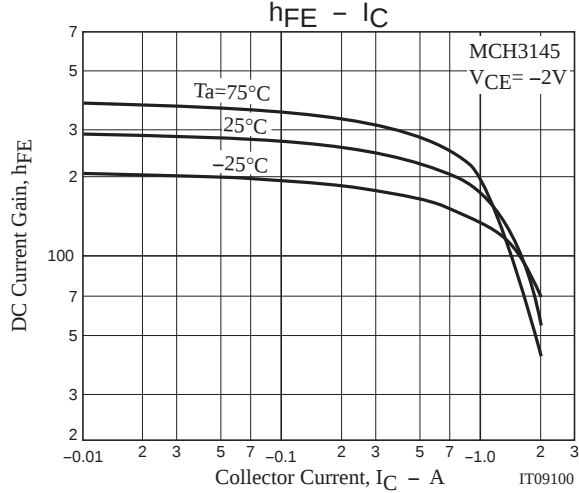
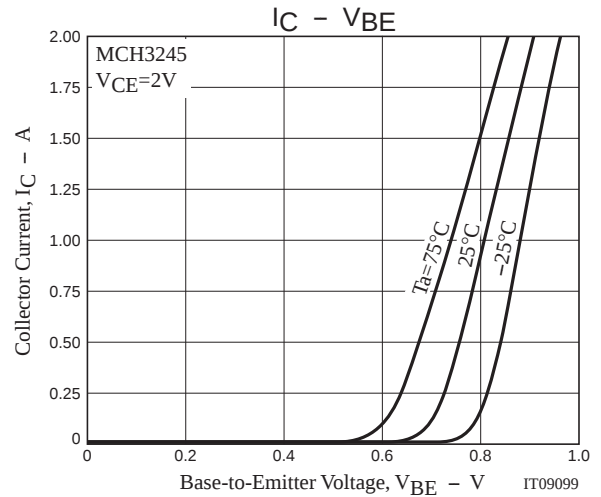
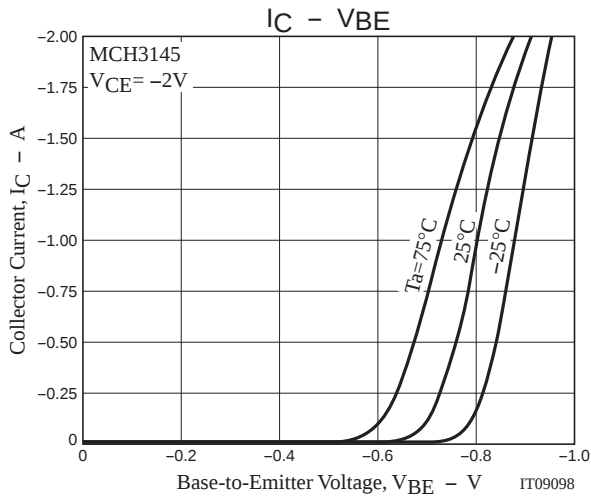
$I_C=10I_{B1}= -10I_{B2}=0.7A$
For PNP, the polarity is reversed.

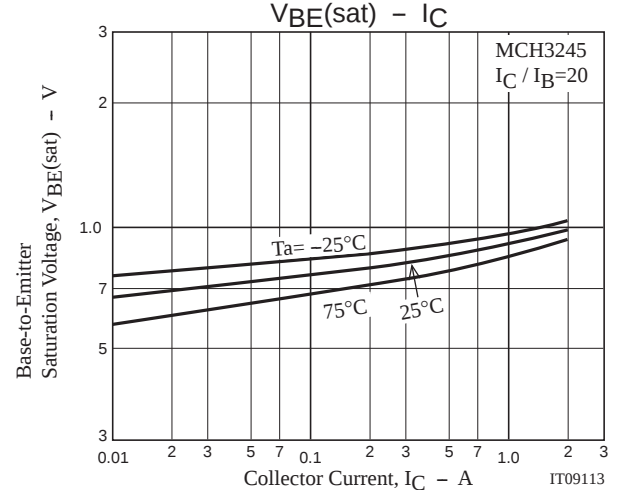
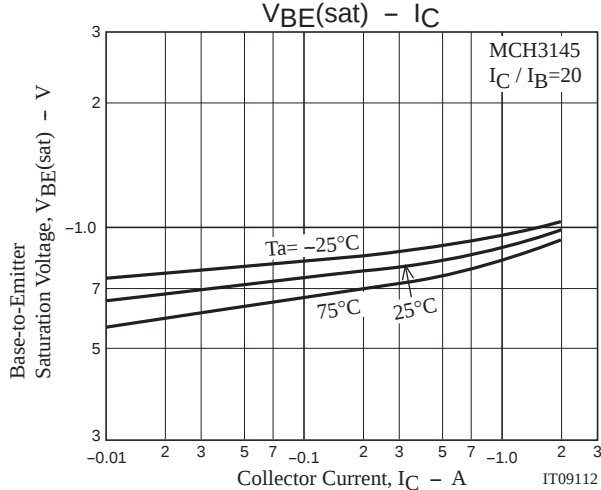
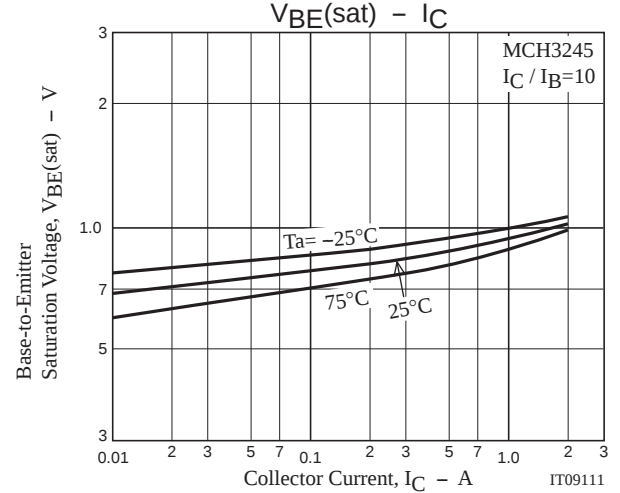
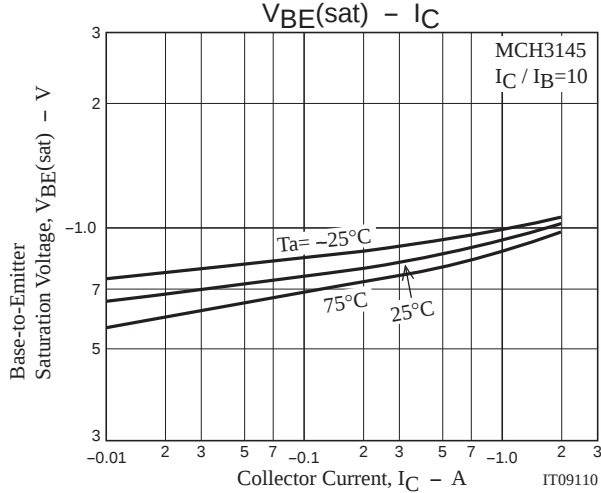
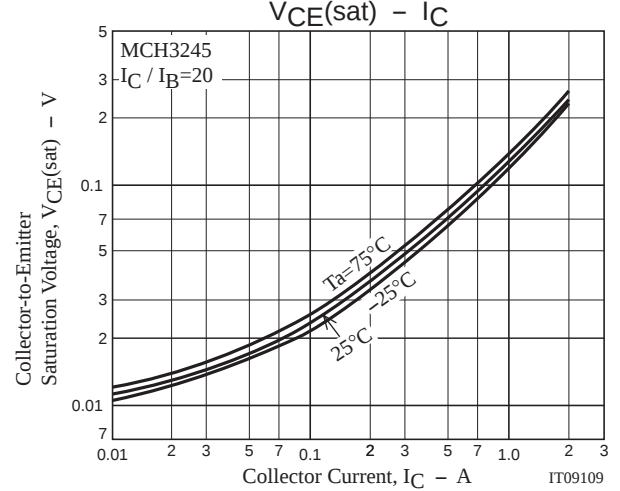
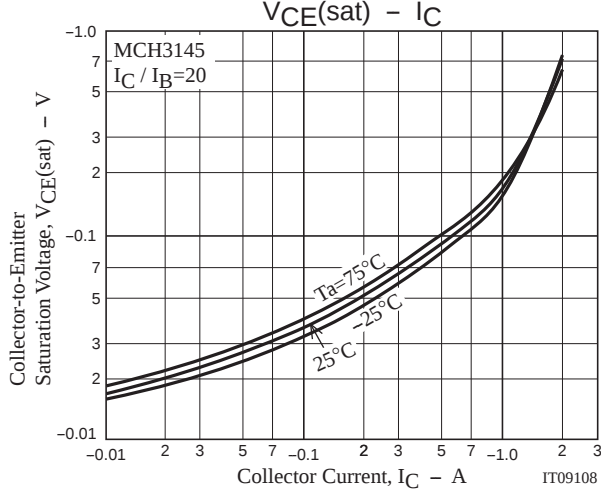
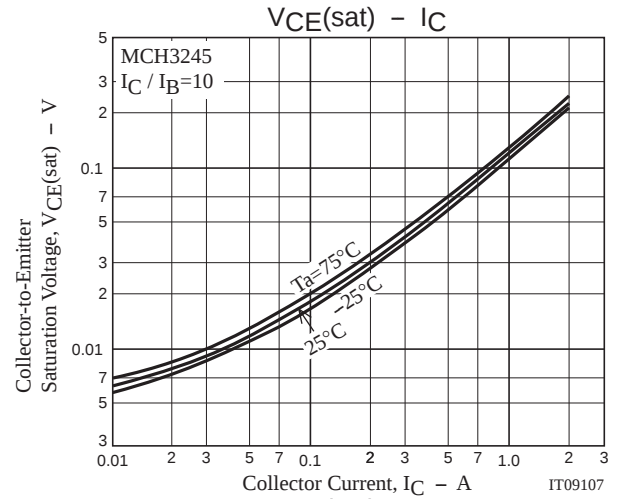
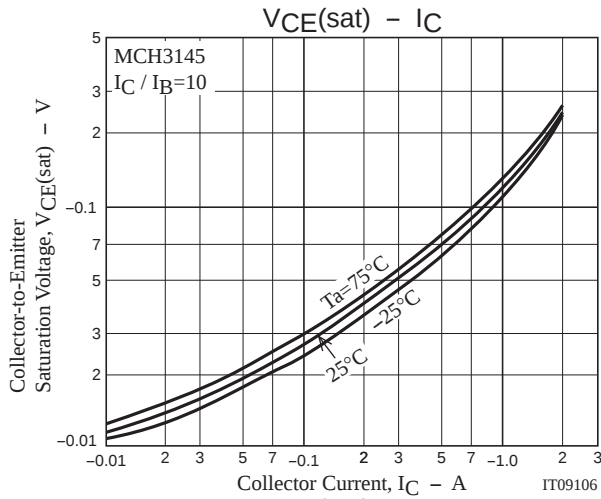
Ordering Information

Device	Package	Shipping	memo
MCH3145-TL-E	MCPH3	3,000pcs./reel	Pb Free
MCH3245-TL-E	MCPH3	3,000pcs./reel	

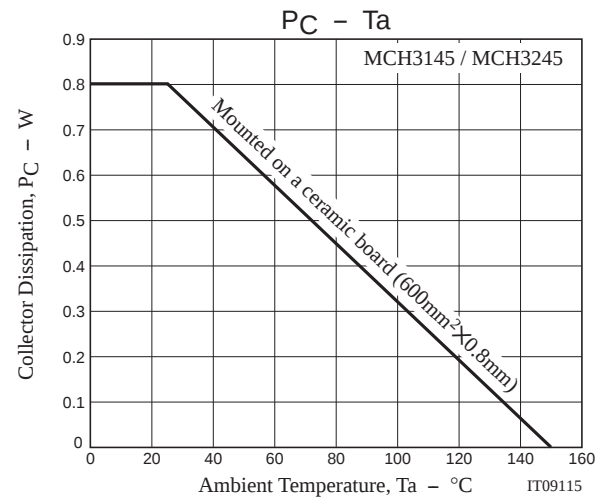
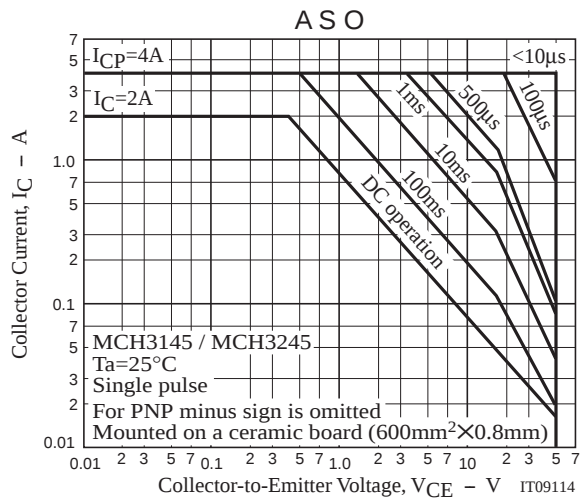


MCH3145/MCH3245





MCH3145/MCH3245



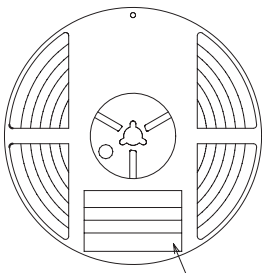
Taping Specification

MCH3145-TL-E, MCH3245-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



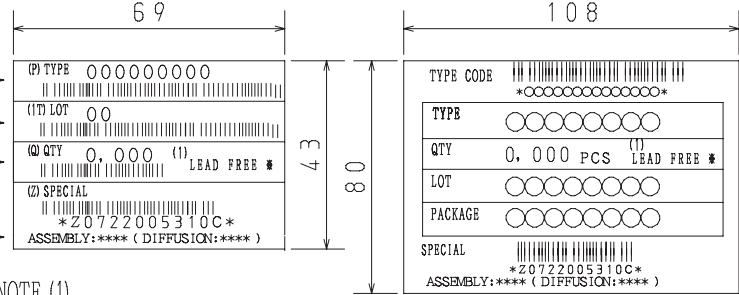
Type No.
LOT No.
Quantity
Origin

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.



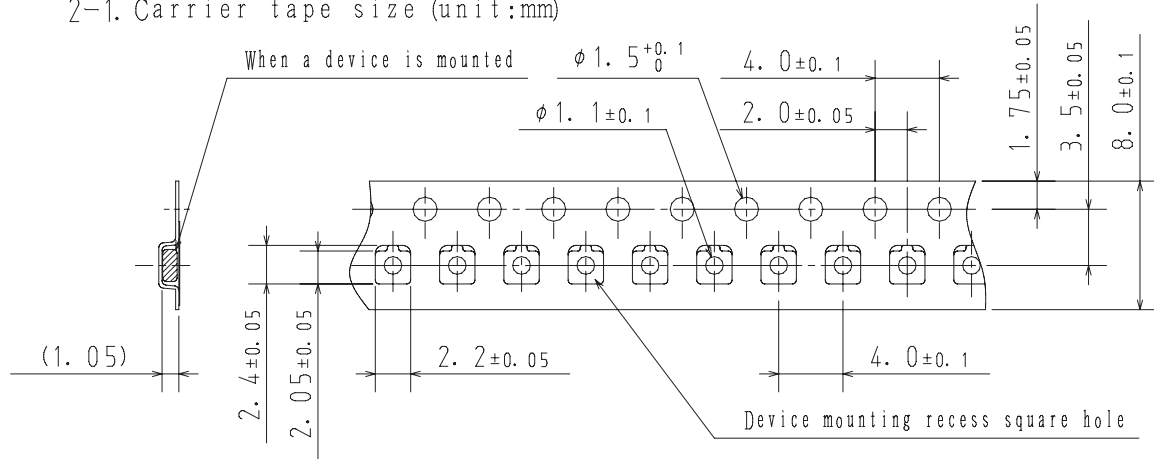
NOTE (1)

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

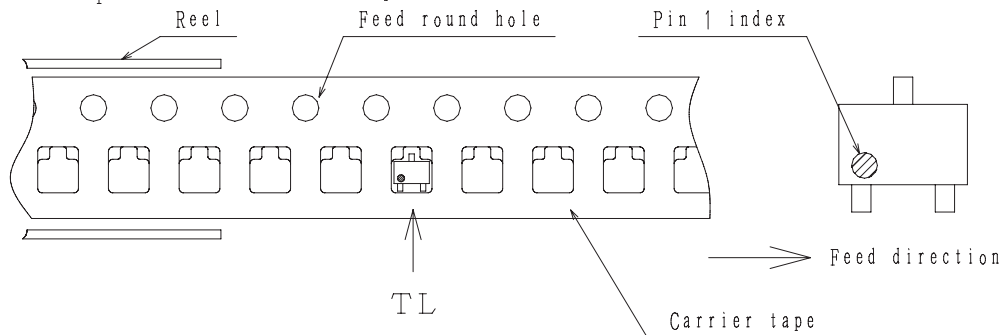
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



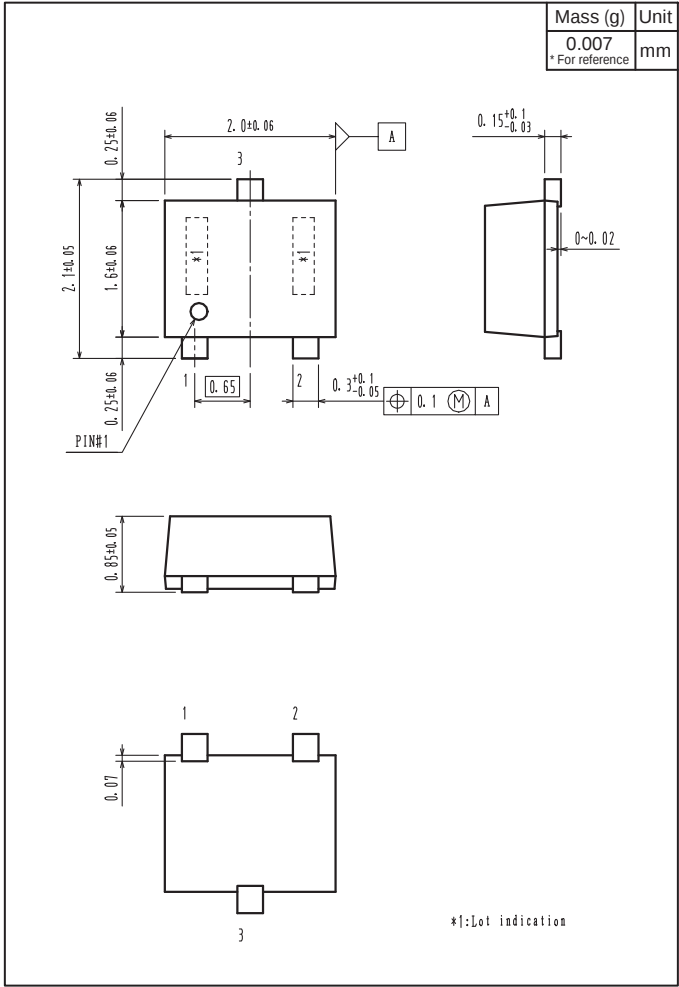
2-2. Device placement direction



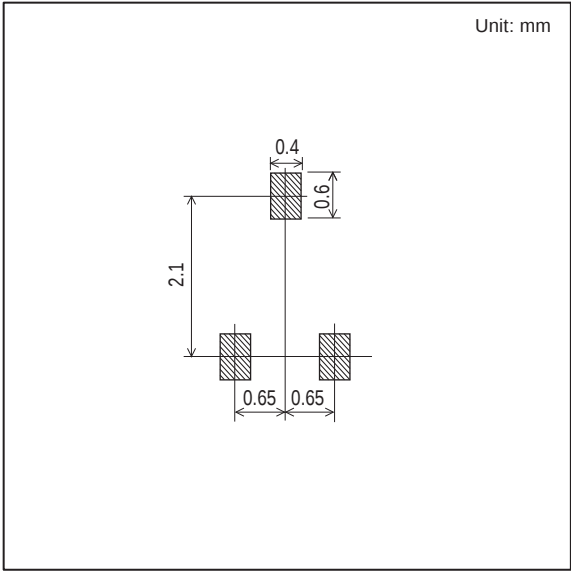
Those with pin 1 index on the feed hole side.....TL

Outline Drawing

MCH3145-TL-E, MCH3245-TL-E



Land Pattern Example



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