



MCH6544

Bipolar Transistor

50V, 0.5A, Low $V_{CE(sat)}$ NPN Single MCPH6

ON Semiconductor®

<http://onsemi.com>

Applicaitions

- Relay drivers, lamp drivers, motor drivers

Features

- Composite type with an NPN transistor contained in one package facilitating high-density mounting
- Ultrasmall package facilitates miniaturization in end products

Specifications

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

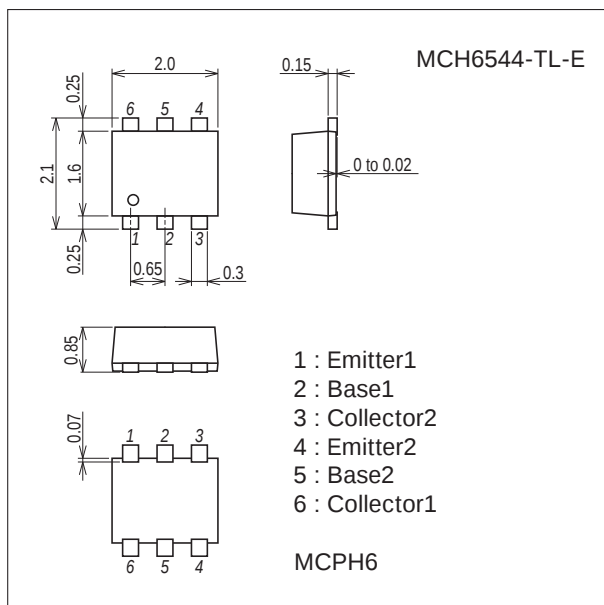
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		500	mA
Collector Current (Pulse)	I_{CP}		1.5	A
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm ² ×0.8mm) 1unit	0.5	W
Total Power Dissipation	P_T	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.55	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-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)

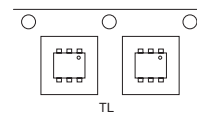
7022A-011



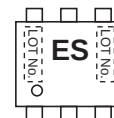
Product & Package Information

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

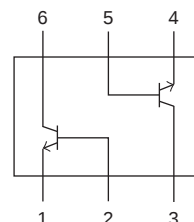
Packing Type : TL



Marking



Electrical Connection

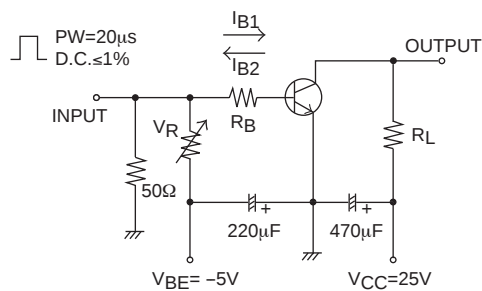


MCH6544

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	300		800	
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA		500		MHz
Output Capacitance	Cob	V _{CB} =10V, f=1MHz		2.8		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =100mA, I _B =10mA		50	100	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	60			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}			340		ns
Fall Time	t _f			55		ns

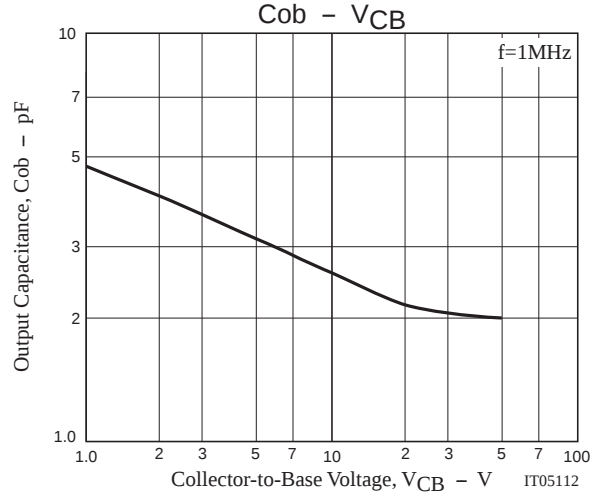
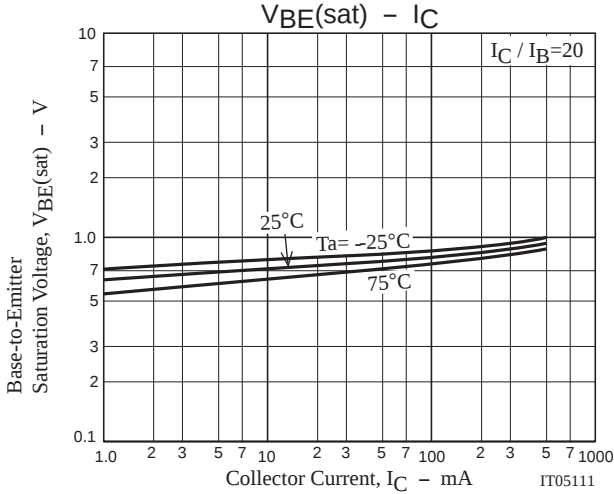
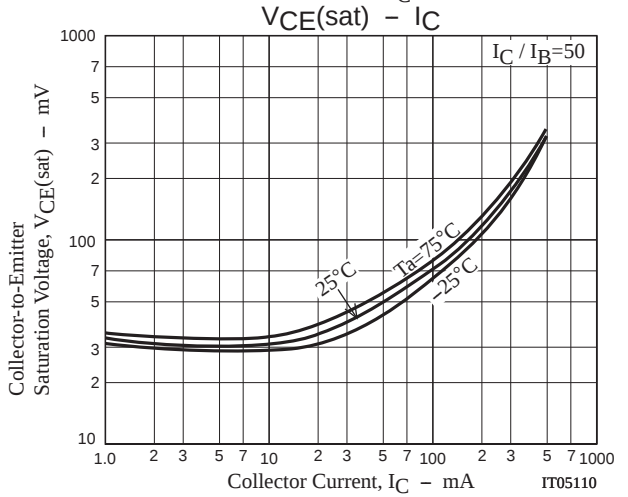
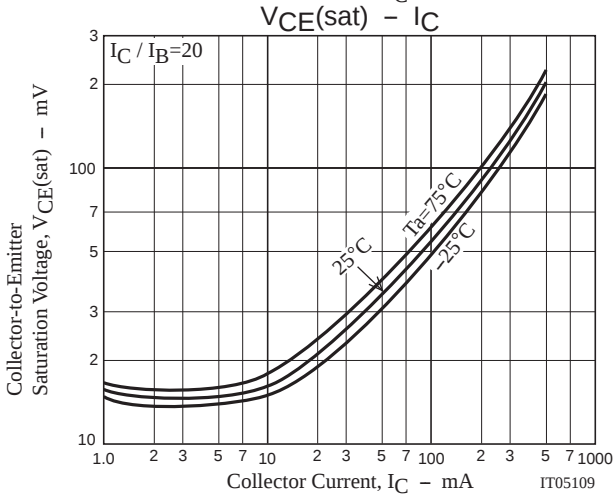
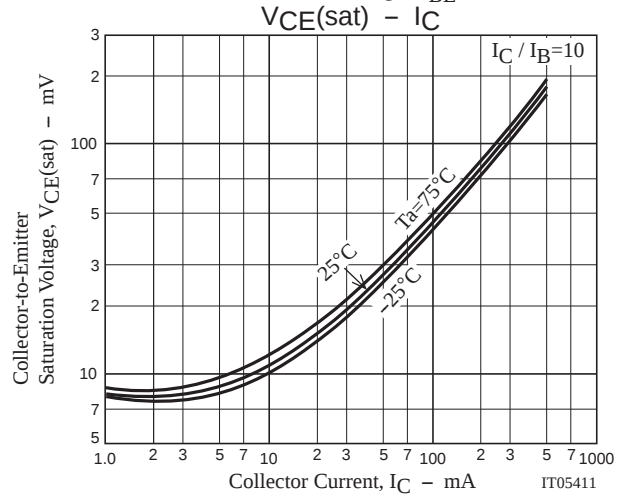
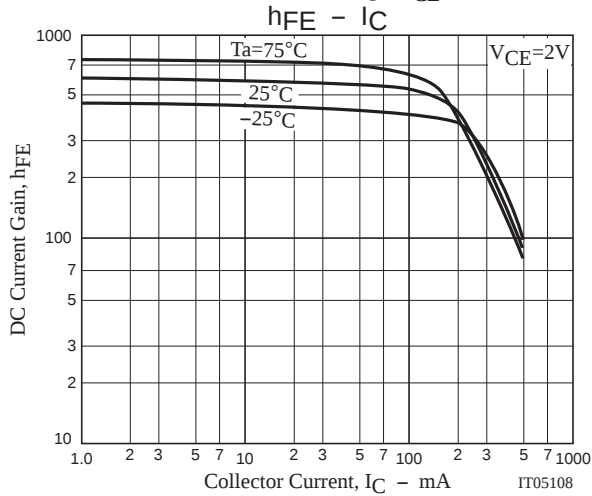
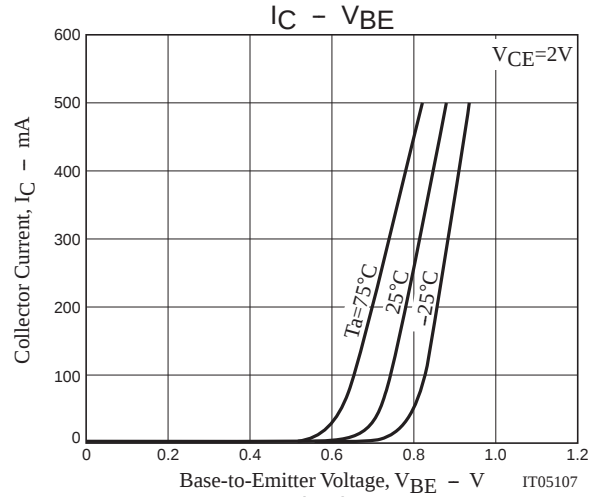
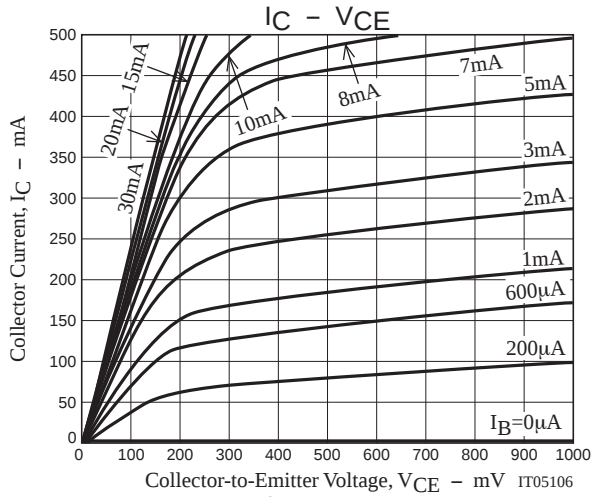
Switching Time Test Circuit

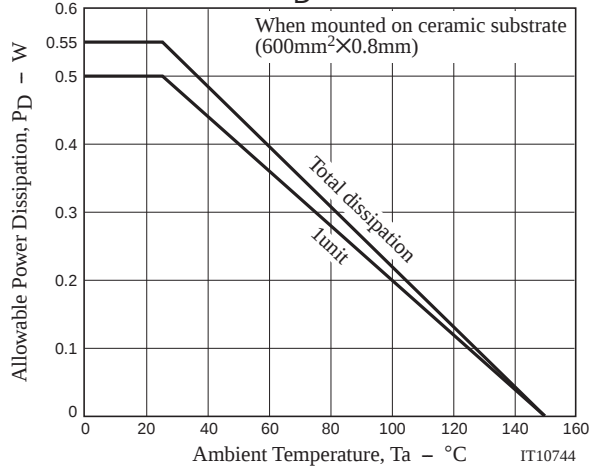
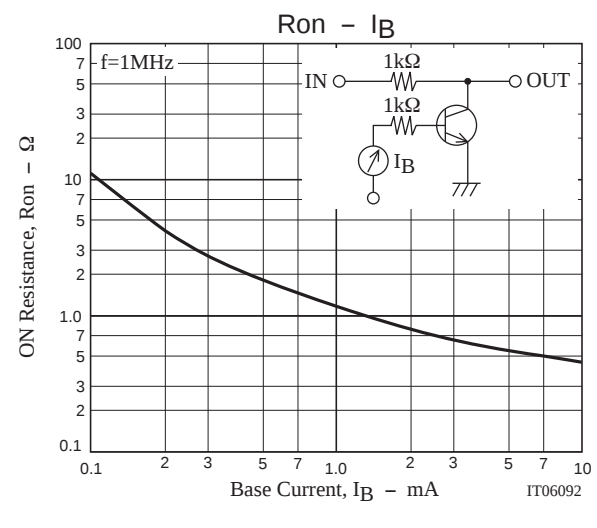
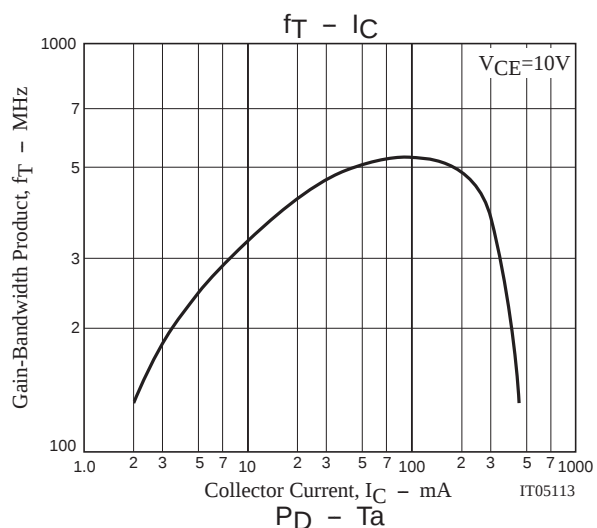


$I_C = 20I_{B1} = -20I_{B2} = 200\text{mA}$

Ordering Information

Device	Package	Shipping	memo
MCH6544-TL-E	MCPH6	3,000pcs./reel	Pb Free





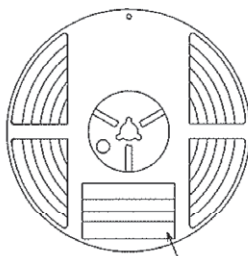
Embossed Taping Specification

MCH6544-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

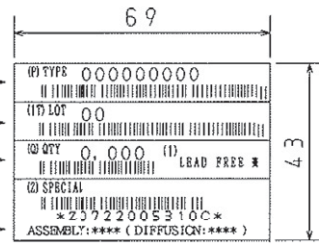
Packing method



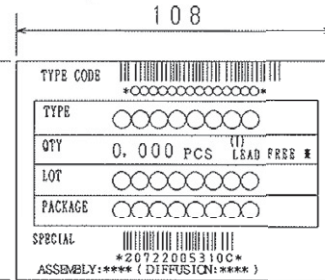
Reel label

Type No.
LOT No.
Quantity
Origin

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.



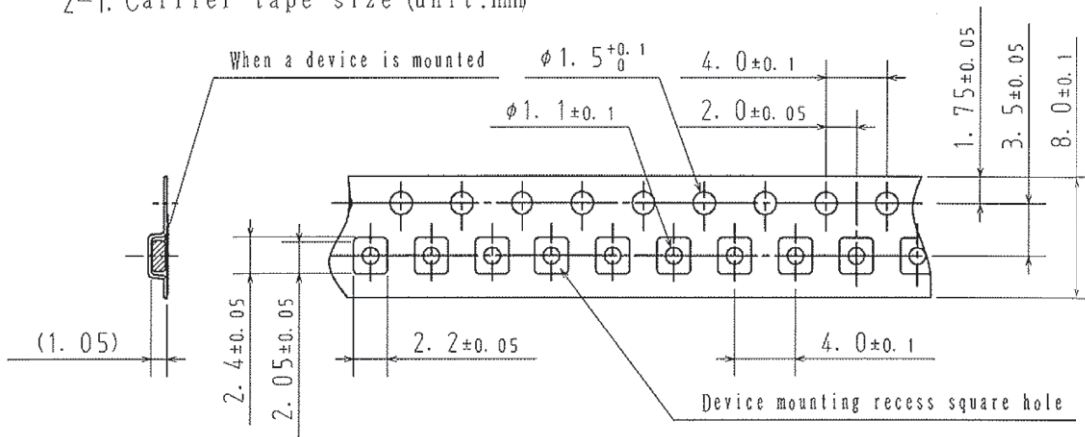
NOTE (1)

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

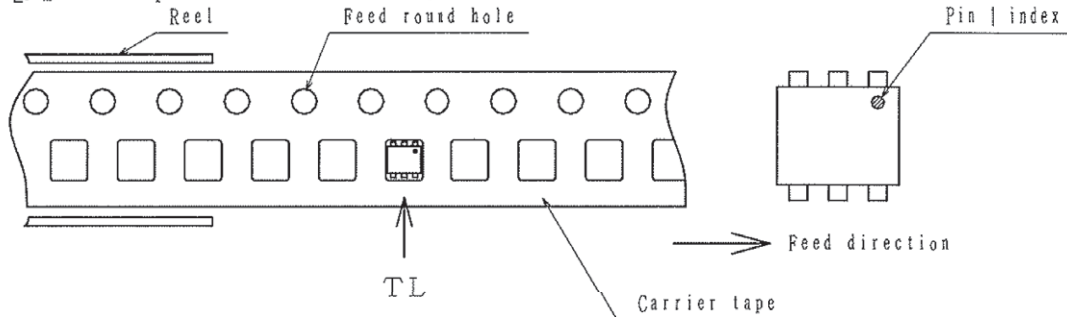
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

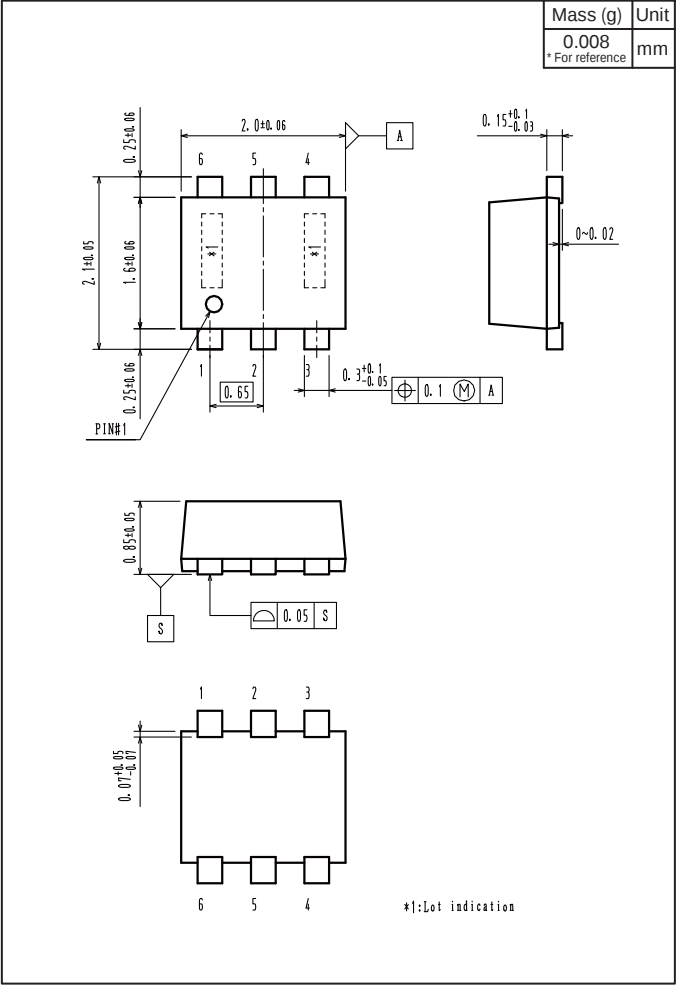


2-2. Device placement direction

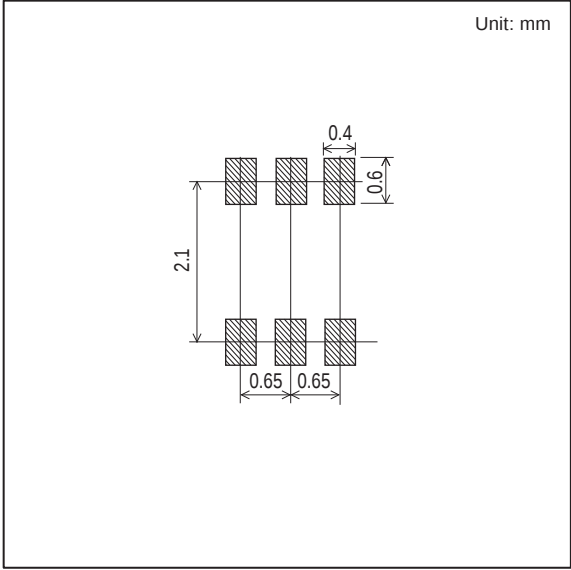


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
MCH6544-TL-E



Land Pattern Example



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