



ECH8502

Bipolar Transistor

(-50V, (-)30A, Low $V_{CE(sat)}$ Complementary Dual ECH8

ON Semiconductor®

<http://onsemi.com>

Features

- Composite type, facilitating high-density mounting
- Low collector-to-emitter saturation voltage
- Halogen free compliance
- Mounting height 0.9mm
- NPN : $V_{CE(sat)}=0.08V(\text{typ.})@I_C=2.5A$
- PNP : $V_{CE(sat)}=-0.12V(\text{typ.})@I_C=-2.5A$

Specifications () : PNP

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

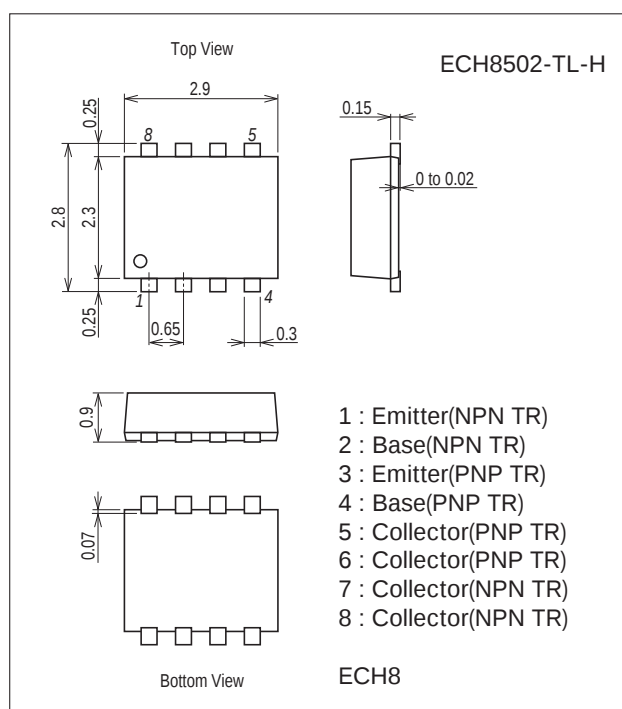
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-50)100	V
Collector-to-Emitter Voltage	V_{CEO}		(-)50	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)5	A
Collector Current (Pulse)	I_{CP}	$PW \leq 1\mu s$, duty cycle $\leq 1\%$	(-)30	A
Base Current	I_B		(-)600	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	P_T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.6	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)

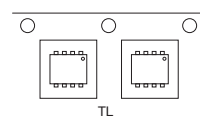
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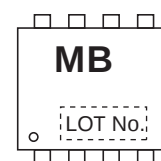
Product & Package Information

- Package : ECH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

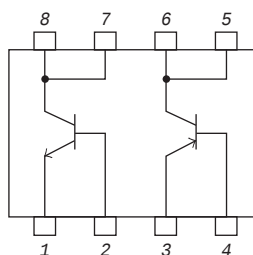
Packing Type : TL



Marking



Electrical Connection

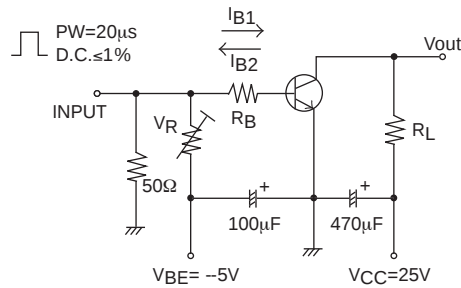


Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	VCB=(-)50V, IE=0A			(-)0.1	μA
Emitter Cutoff Current	IEBO	VEB=(-)4V, IC=0A			(-)0.1	μA
DC Current Gain	hFE	VCE=(-)2V, IC=(-)500mA	200		560	
Gain-Bandwidth Product	fT	VCE=(-)10V, IC=(-)500mA		(260)290		MHz
Output Capacitance	Cob	VCB=(-)10V, f=1MHz		(45)25		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=(-)2.5A, IB=(-)125mA		(-120)80	(-200)120	mV
Base-to-Emitter Saturation Voltage	VBE(sat)	IC=(-)2.5A, IB=(-)125mA		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=(-)10μA, IE=0A	(-50)100			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=(-)1mA, RBE=∞	(-)50			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=(-)10μA, IC=0A	(-)6			V
Turn-On Time	ton	See specified Test Circuit.		(30)30		ns
Storage Time	tstg			(180)280		ns
Fall Time	tf			(20)25		ns

Note : The specifications shown above are for each individual transistor.

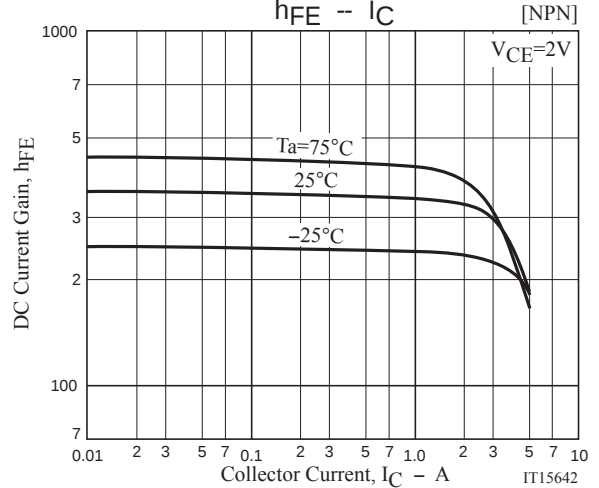
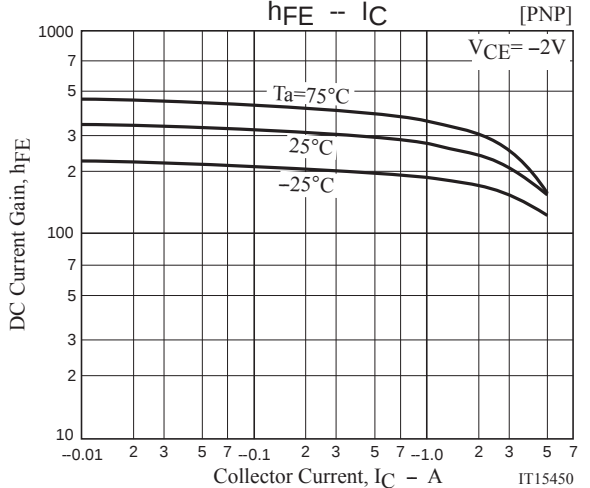
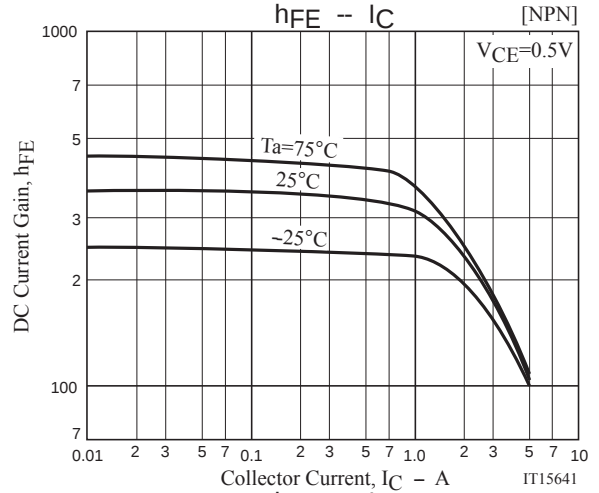
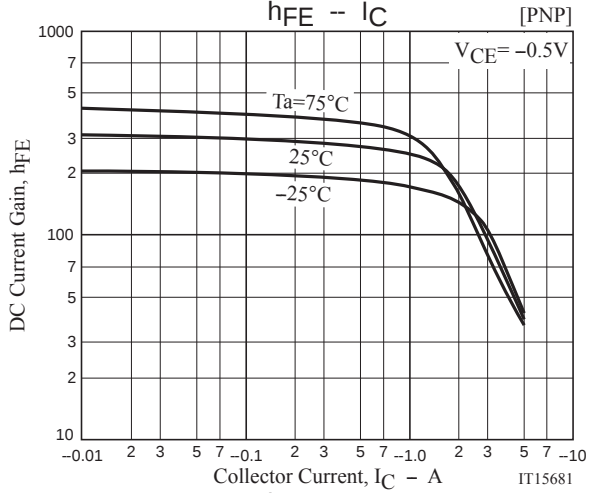
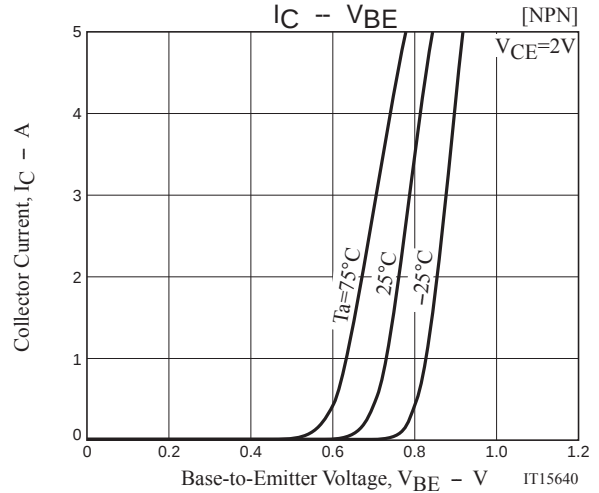
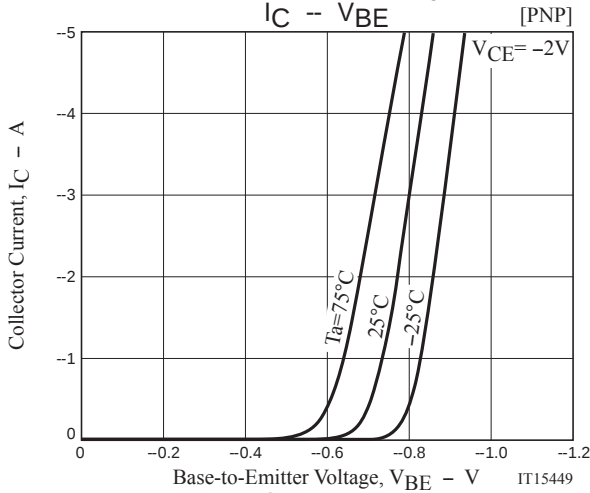
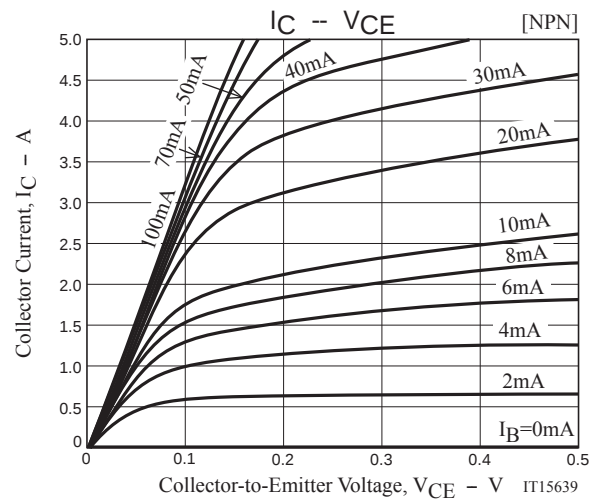
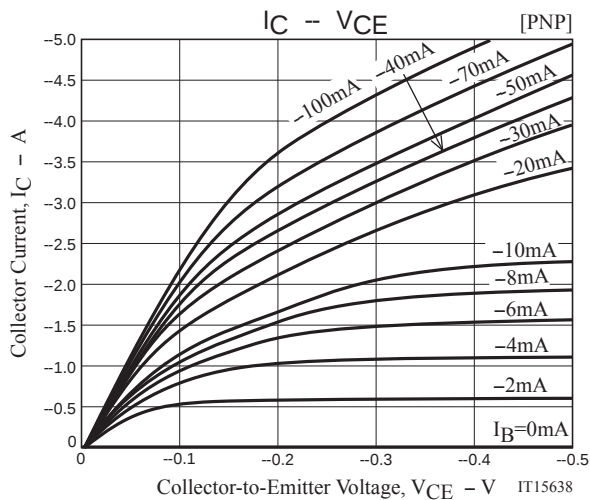
Switching Time Test Circuit

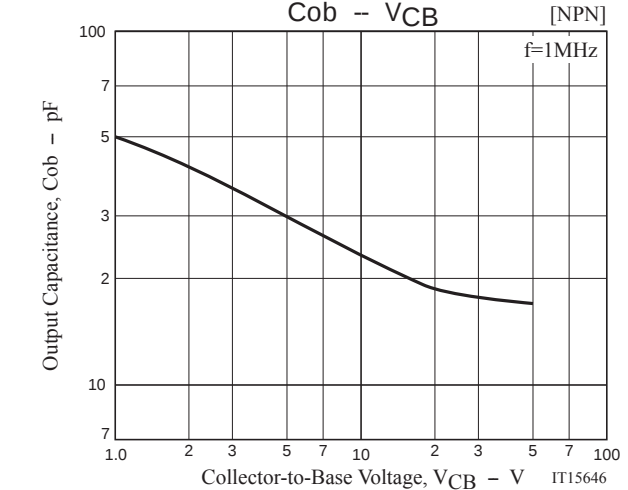
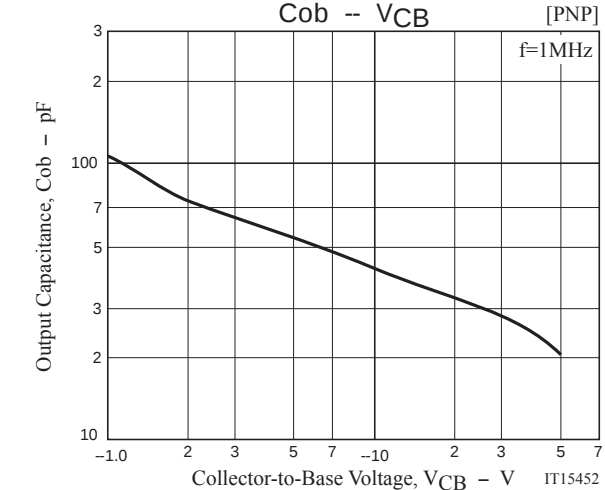
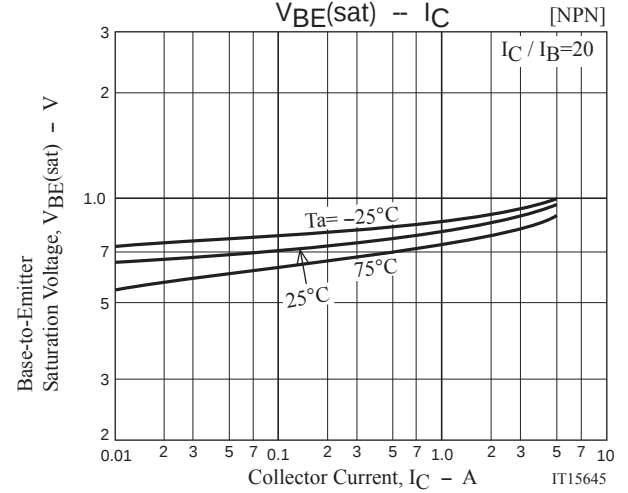
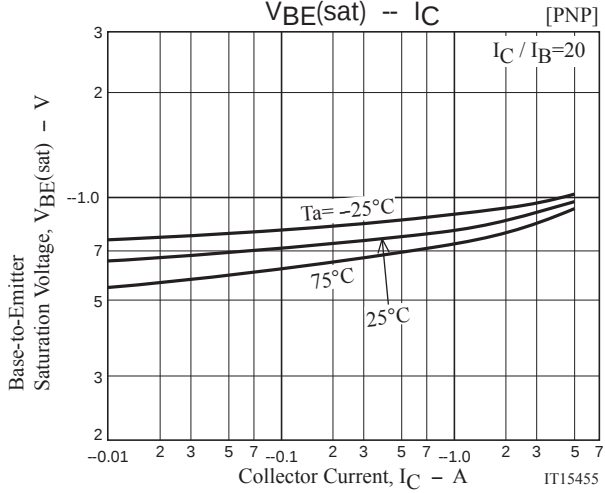
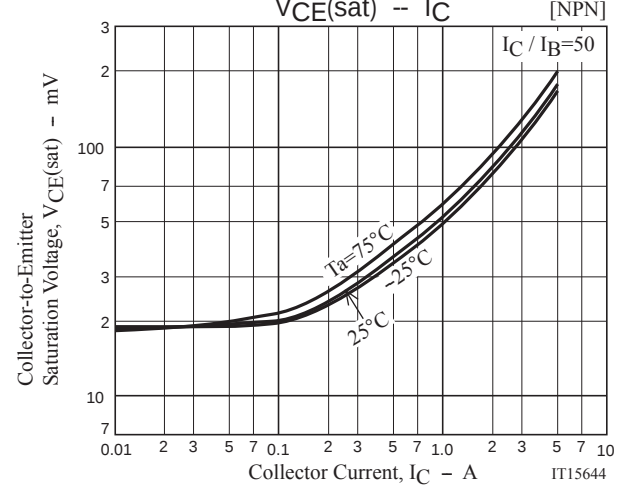
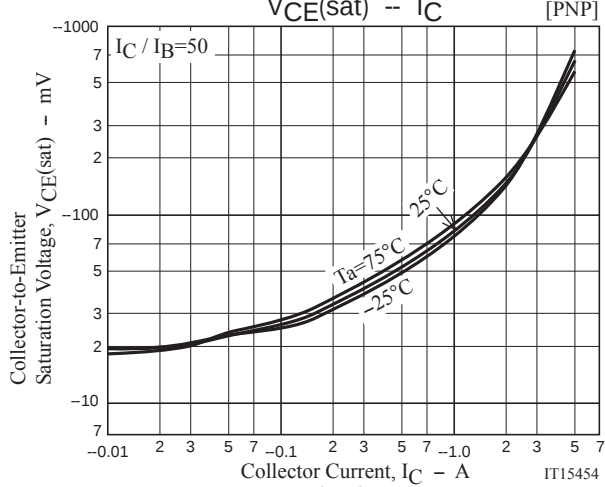
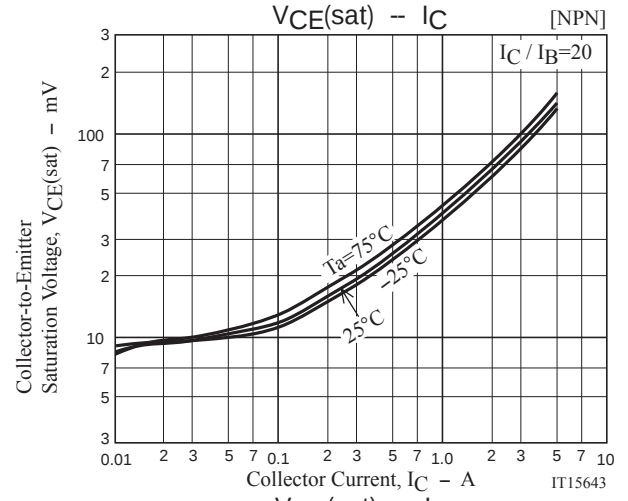
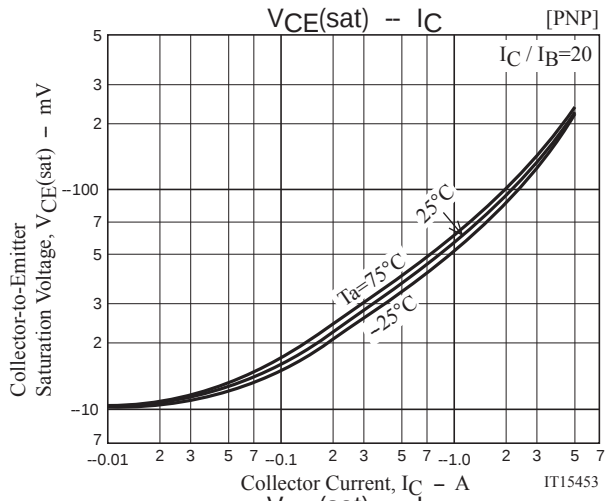


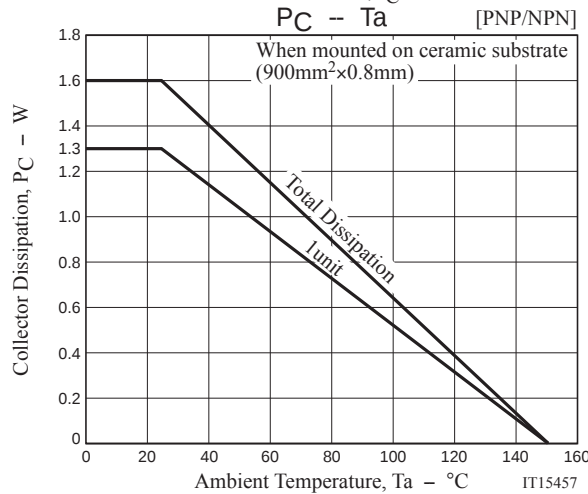
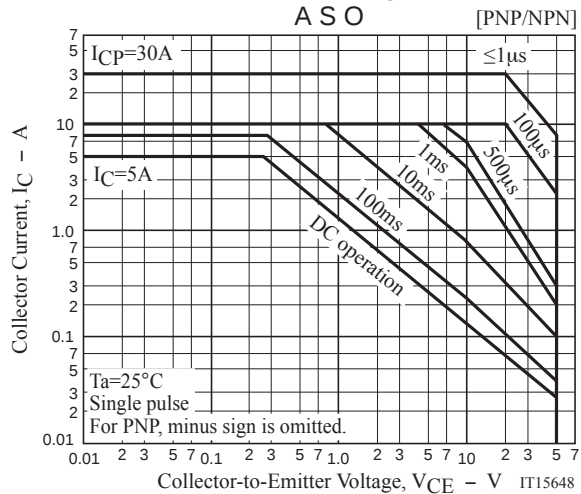
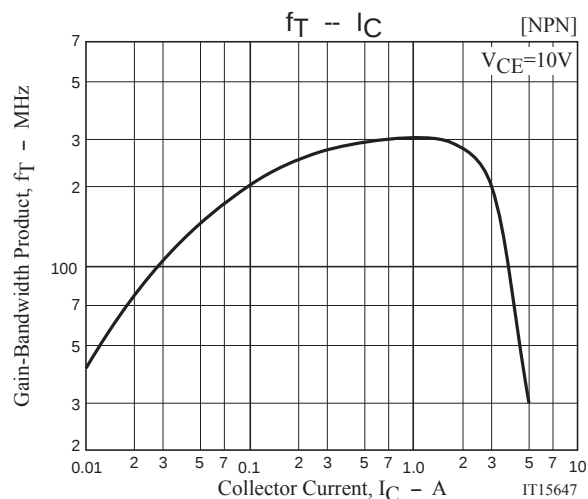
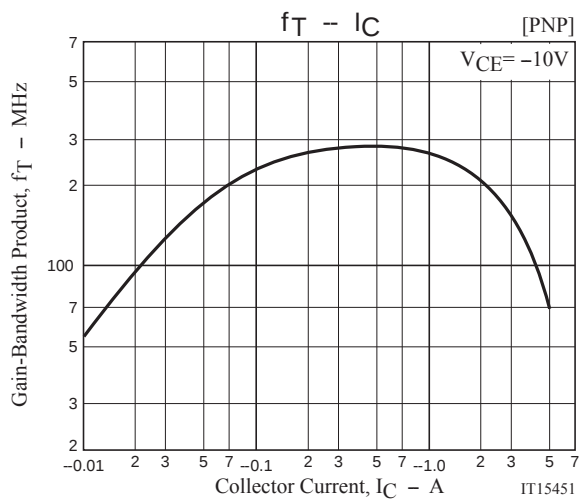
IC=20IB1= -20IB2=2.5A
(For PNP, the polarity is reversed.)

Ordering Information

Device	Package	Shipping	memo
ECH8502-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free







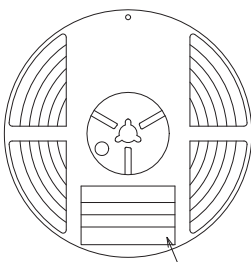
Embossed Taping Specification

ECH8502-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)
ECH8	CPH6	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)

(P) TYPE	000000000
(1) LOT	00
(Q) QTY	0,000 (1) LEAD FREE *
(2) SPECIAL	
	20722005310C
	ASSEMBLY:**** (DIFFUSION:****)

Outer box label

It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

TYPE CODE	00000000000000000000
TYPE	00000000
QTY	0,000 PCS (1) LEAD FREE *
LOT	00000000
PACKAGE	00000000
SPECIAL	
	20722005310C
	ASSEMBLY:**** (DIFFUSION:****)

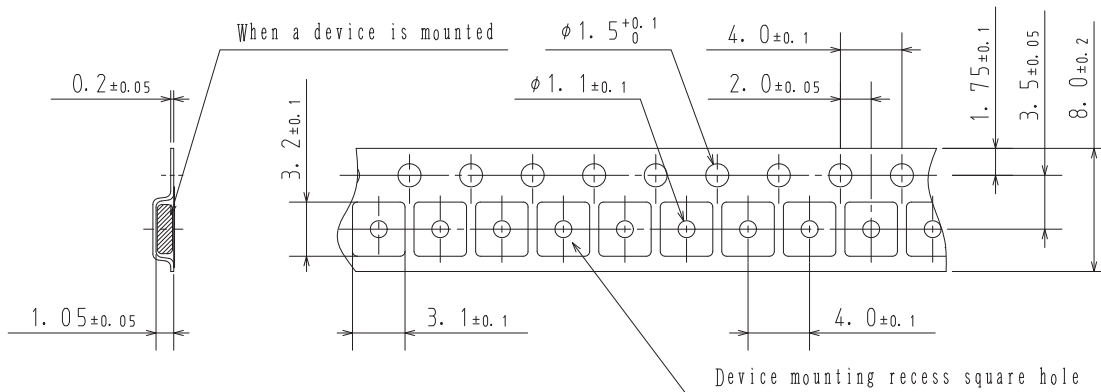
NOTE (1)

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

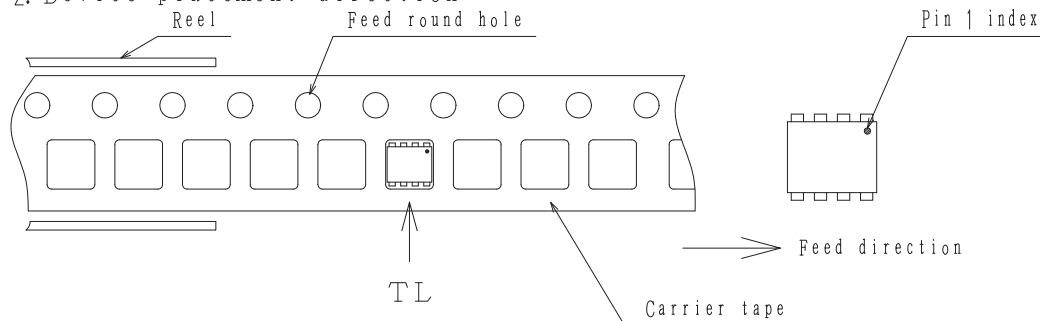
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

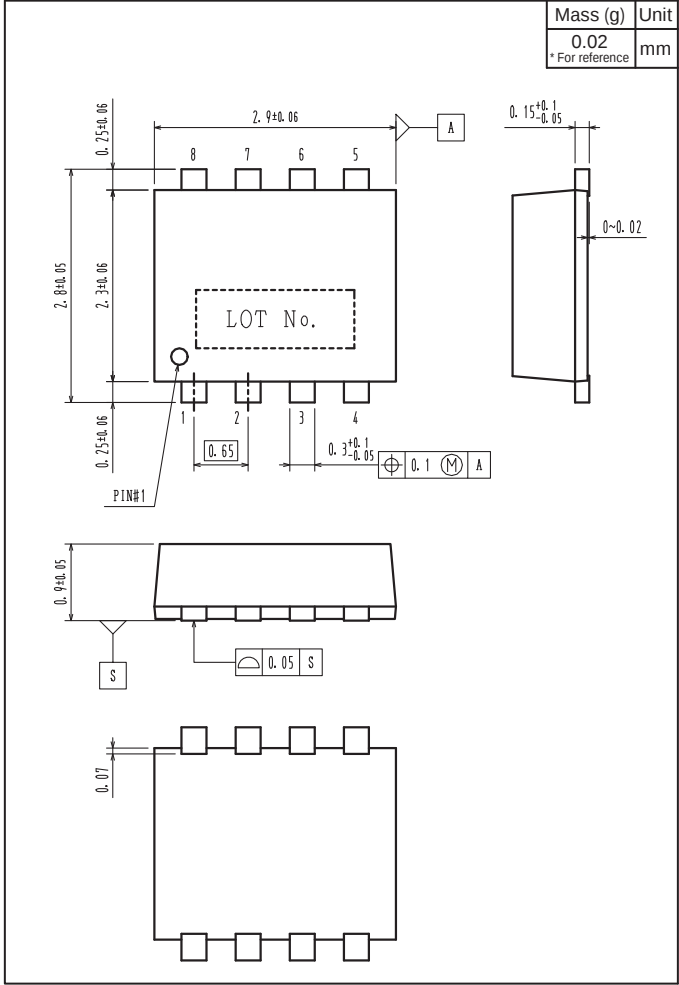


2-2. Device placement direction

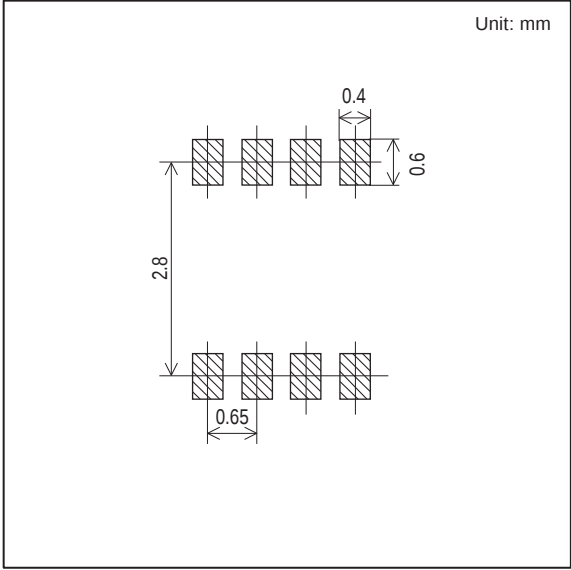


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
ECH8502-TL-H



Land Pattern Example



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