



ECH8503 — PNP Epitaxial Planar Silicon Transistor

Motor Drive Applications

Features

- Composite type, facilitating high-density mounting
- Mounting height 0.9mm
- Halogen free compliance

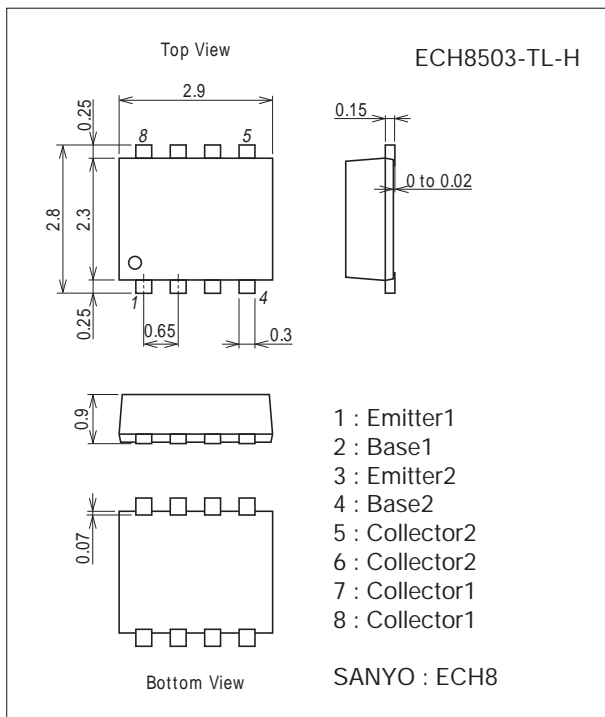
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-50	V
Collector-to-Emitter Voltage	VCEO		-50	V
Emitter-to-Base Voltage	VEBO		-6	V
Collector Current	IC		-5	A
Collector Current (Pulse)	ICP		-10	A
Base Current	IB		-1	A
Collector Dissipation	PC	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	PT	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.6	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Package Dimensions

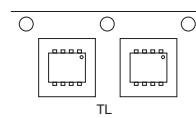
unit : mm (typ)
7011A-008



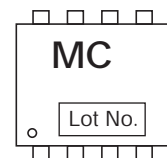
Product & Package Information

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

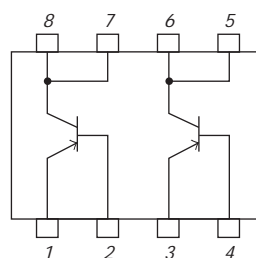
Taping Type : TL



Marking



Electrical Connection



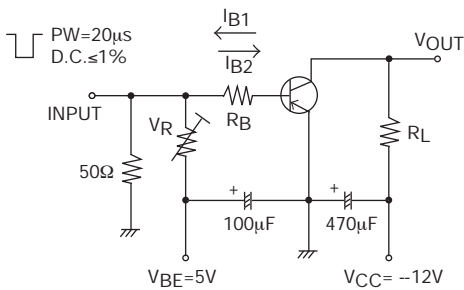
ECH8503

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -50V, I_E = 0A$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4V, I_C = 0A$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -2V, I_C = -500mA$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE} = -10V, I_C = -500mA$		280		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10V, f = 1MHz$		42		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -1A, I_B = -50mA$		-60	-100	mV
	$V_{CE(sat)2}$	$I_C = -2.5A, I_B = -125mA$		-110	-190	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -2.5A, I_B = -125mA$		-0.9	-1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0A$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-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.		30		ns
Storage Time	t_{stg}			170		ns
Fall Time	t_f			17		ns

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

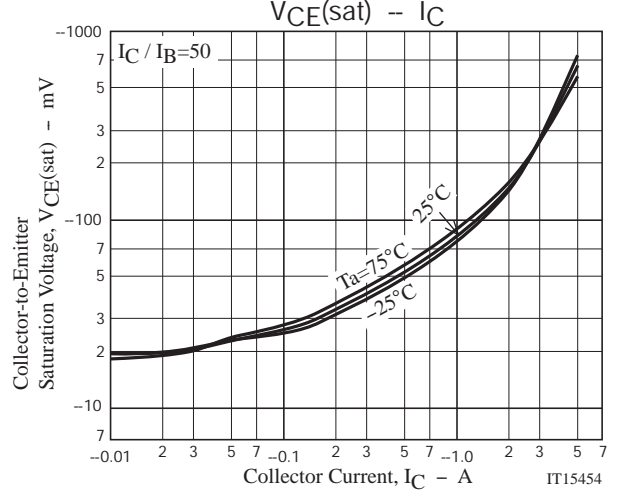
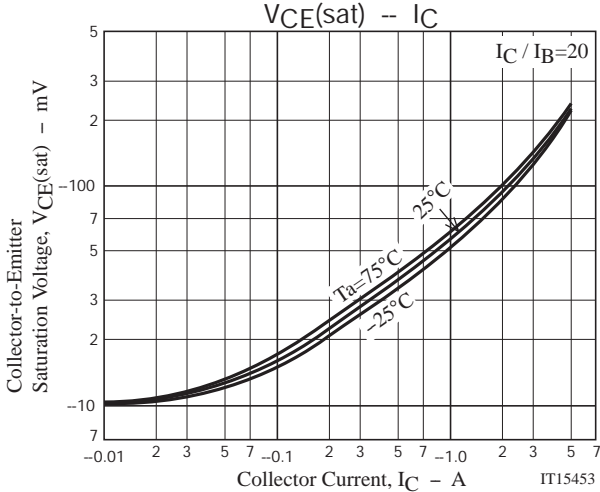
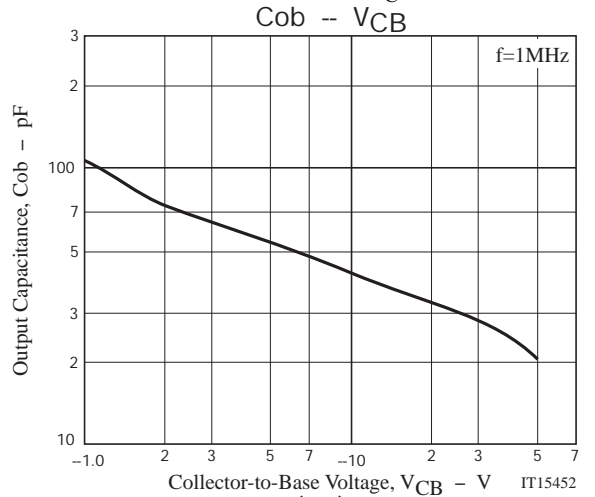
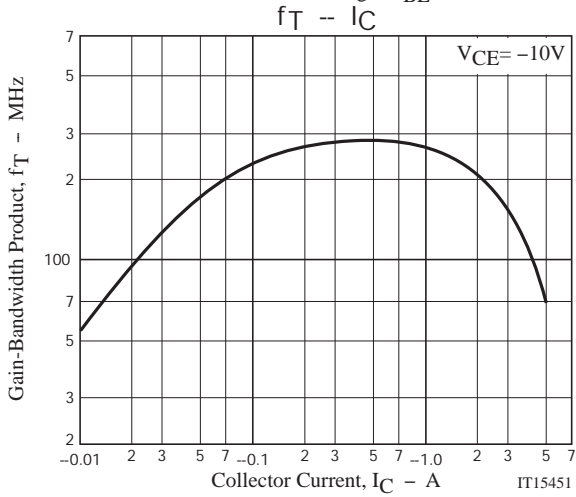
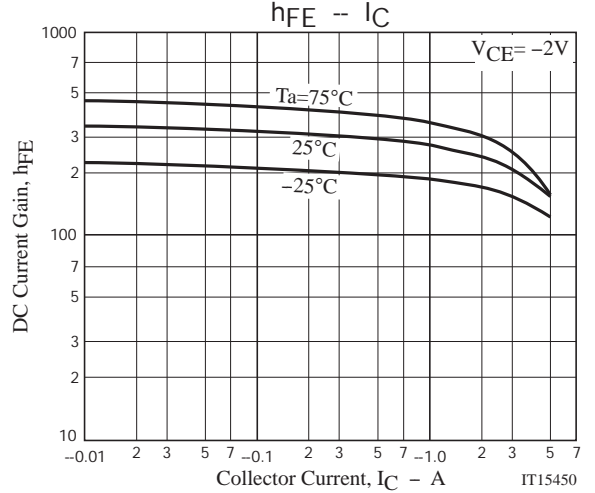
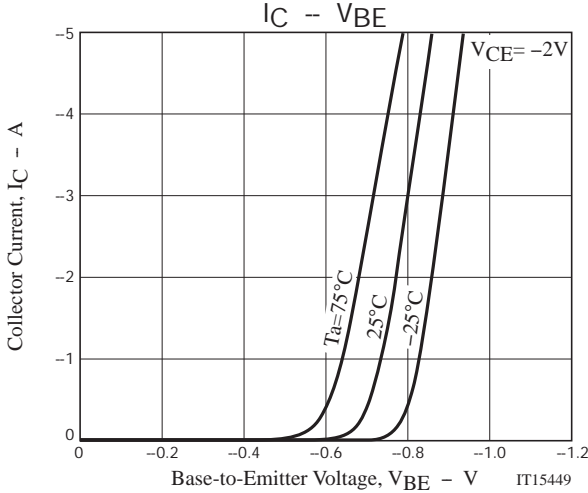
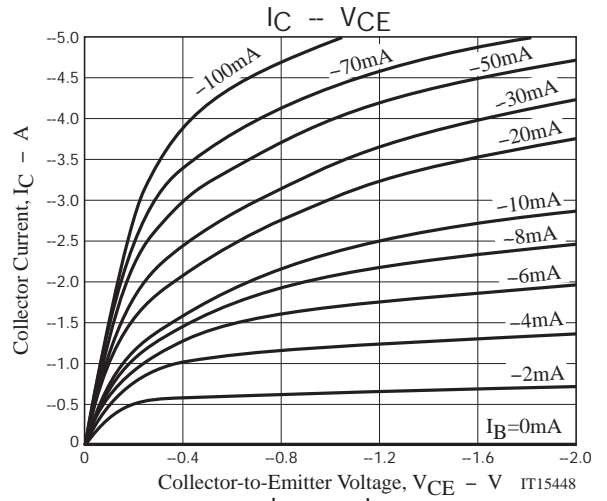
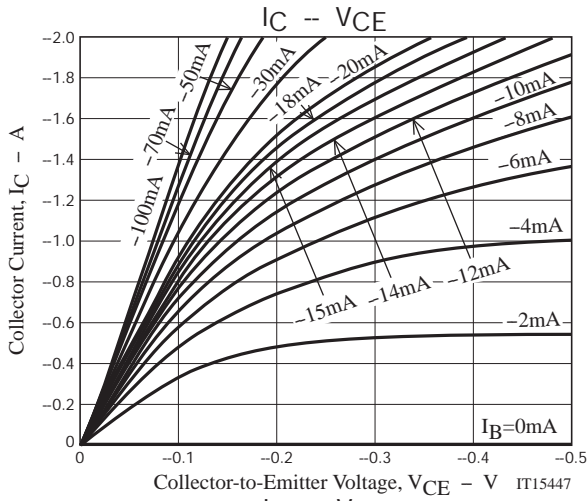
Switching Time Test Circuit

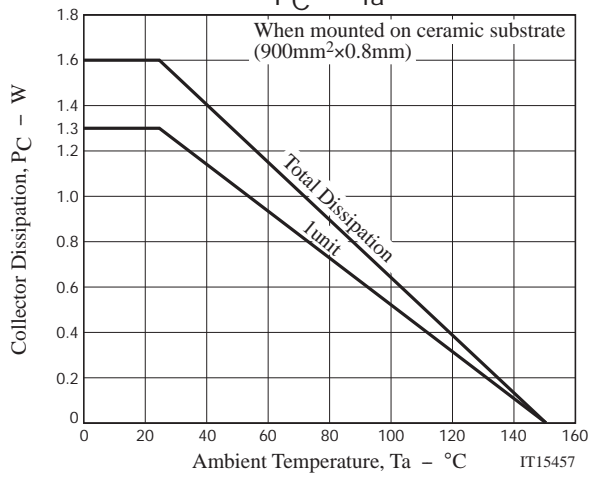
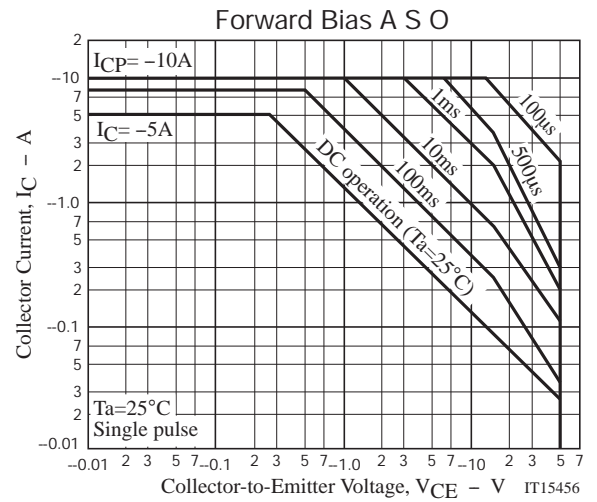
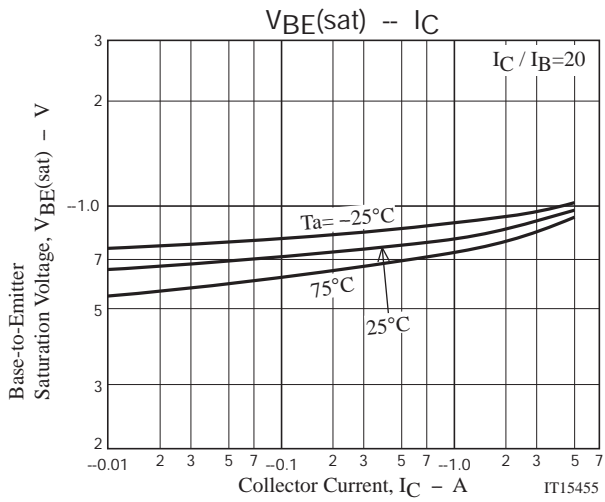


$$I_C = -20I_{B1} = 20I_{B2} = -2.5A$$

Ordering Information

Device	Package	Shipping	memo
ECH8503-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free





Embossed Taping Specification

ECH8503-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

Reel label, Inner box label
(unit :mm)

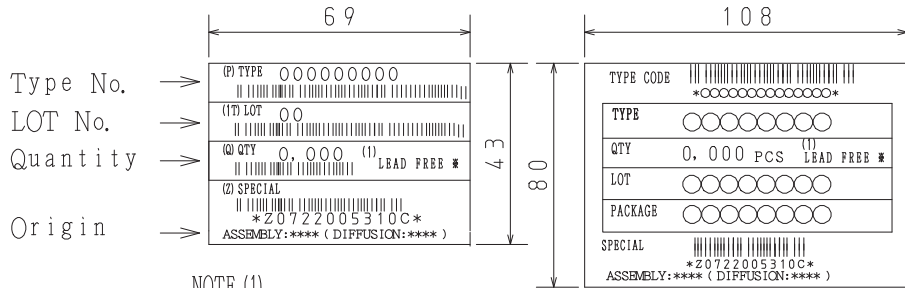
Outer box label

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

Packing method



Reel label



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)



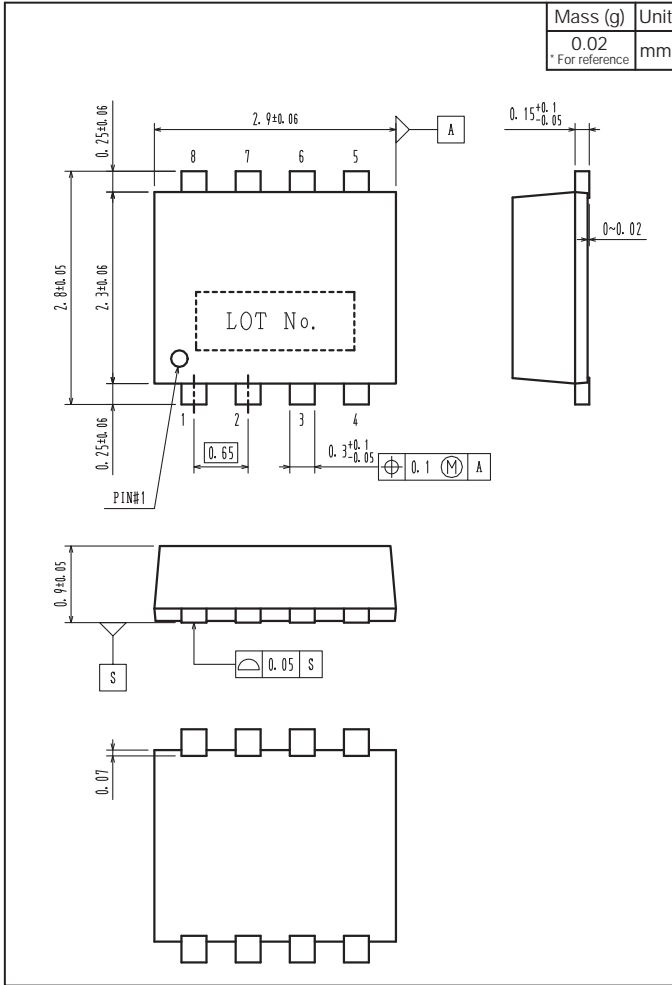
2-2. Device placement direction



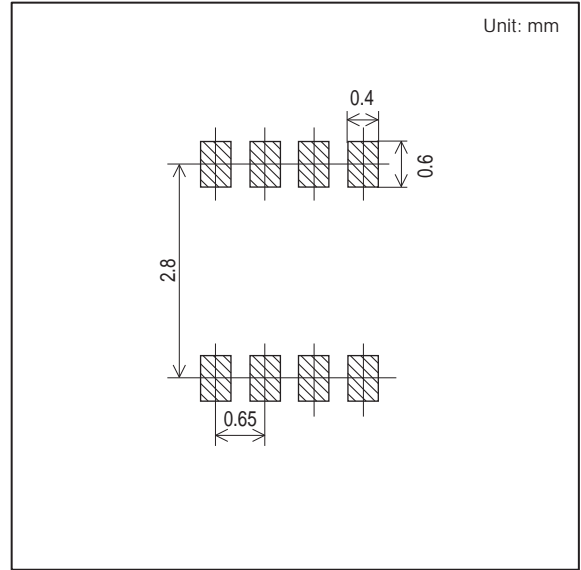
Those with pin 1 index on the feed hole side.....TL

ECH8503

Outline Drawing ECH8503-TL-H



Land Pattern Example



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