



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

ECH8102 — PNP Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- High-power IGBT / MOSFET gate drivers, DC / DC converters, lamp drivers, motor drivers

Features

- Adoption of FBET, MBIT process
- Low collector-to-emitter saturation voltage
- High allowable power dissipation
- IECO is guaranteed for preventing reverse flow from the collector to the emitter
- High current capacitance
- High speed switching
- Halogen free compliance

Specifications

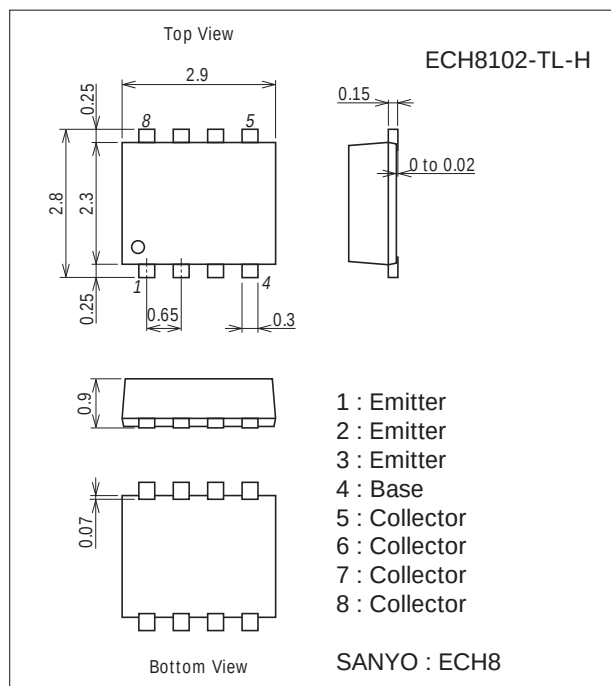
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		-30	V
Collector-to-Emitter Voltage	V _{CES}		-30	V
Collector-to-Emitter Voltage	V _{CEO}		-30	V
Emitter-to-Base Voltage	V _{EB0}		-6	V
Collector Current	I _C		-12	A
Collector Current (Pulse)	I _{CP}		-24	A
Base Current	I _B		-1.2	A
Collector Dissipation	P _C	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

Package Dimensions

unit : mm (typ)

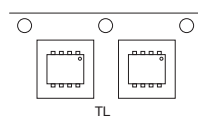
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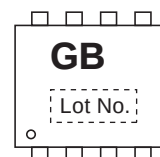
Product & Package Information

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

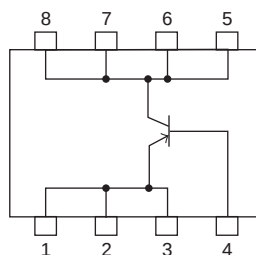
Packing Type : TL



Marking



Electrical Connection



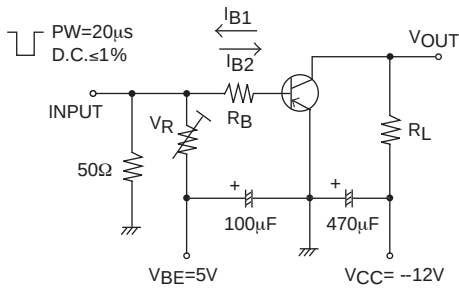
SANYO Semiconductor Co., Ltd.

<http://semicon.sanyo.com/en/network>

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -30V, I_E = 0A$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4V, I_C = 0A$			-0.1	μA
Emitter Cutoff Current	I_{ECO}	$V_{EC} = -4.5V, I_C = 0A$			-1	μA
DC Current Gain	h_{FE1}	$V_{CE} = -2V, I_C = -500mA$	200		560	
	h_{FE2}	$V_{CE} = -2V, I_C = -4A$	150			
	h_{FE3}	$V_{CE} = -2V, I_C = -10A$	100			
Gain-Bandwidth Product	f_T	$V_{CE} = -10V, I_C = -500mA$		140		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10V, f = 1MHz$		120		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -6A, I_B = -300mA$		-80	-135	mV
	$V_{CE(sat)2}$	$I_C = -2A, I_B = -40mA$		-50	-85	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -2A, I_B = -40mA$		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0A$	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -100\mu A, R_{BE} = 0\Omega$	-30			V
	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-30			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.		91		ns
Storage Time	t_{stg}			125		ns
Fall Time	t_f			17		ns

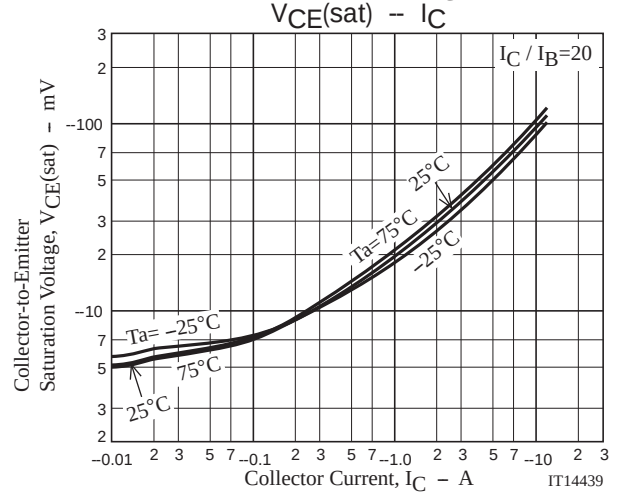
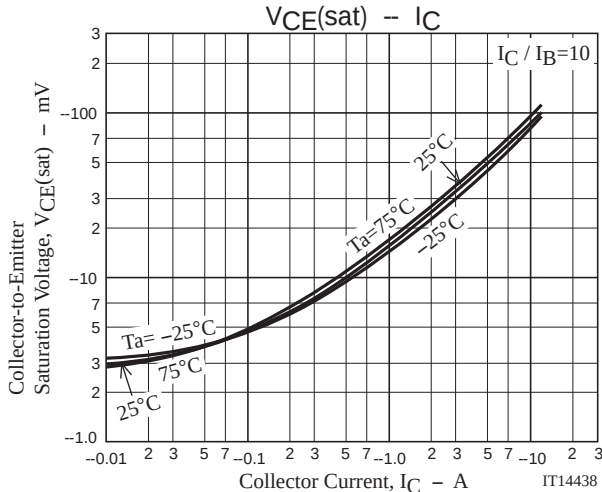
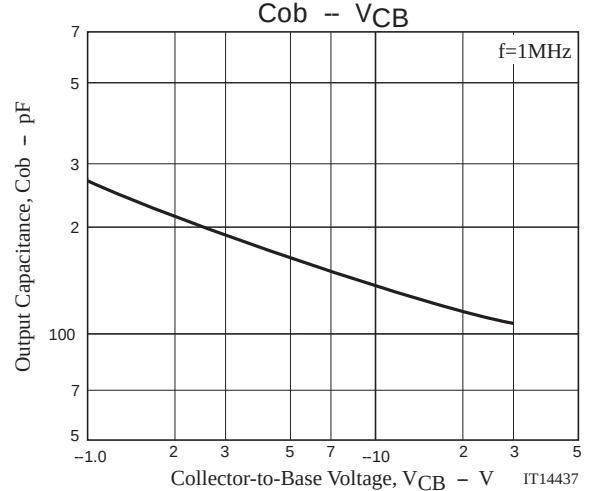
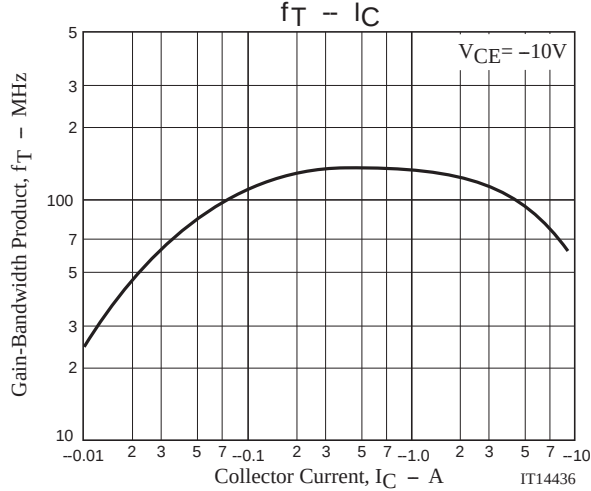
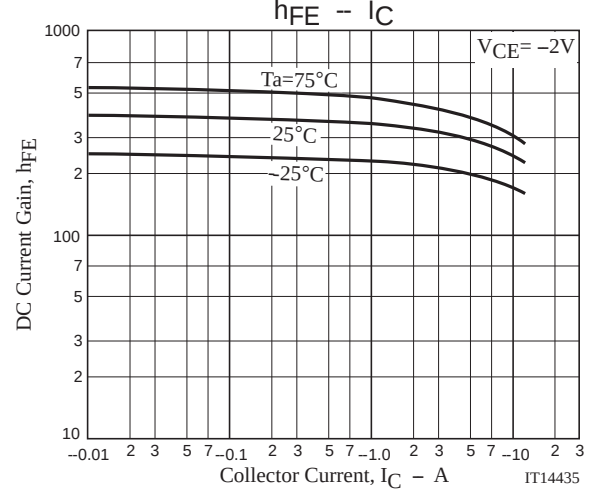
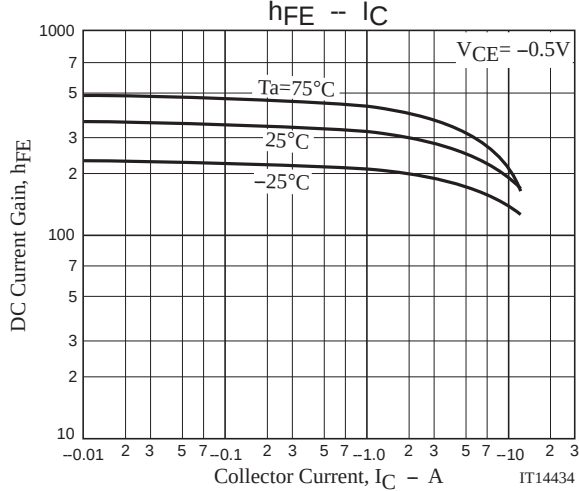
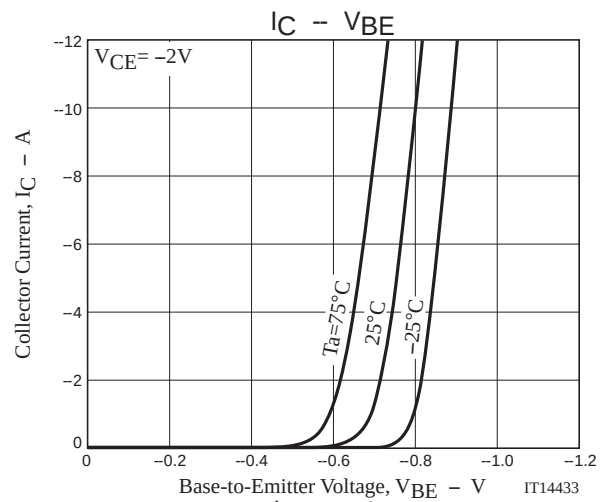
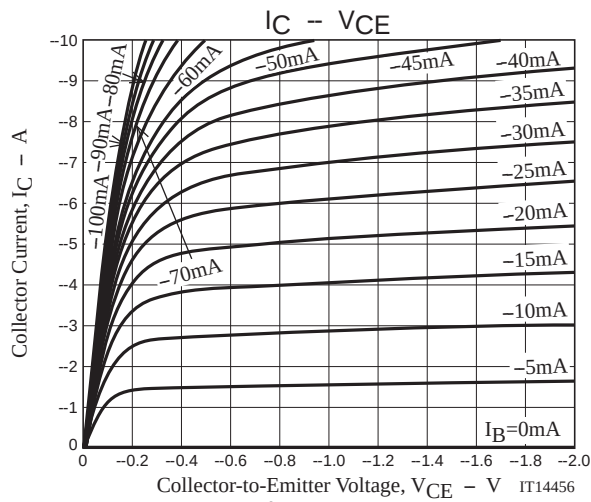
Switching Time Test Circuit

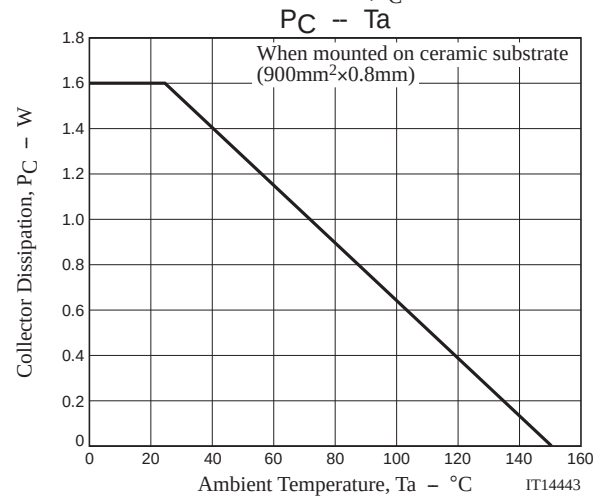
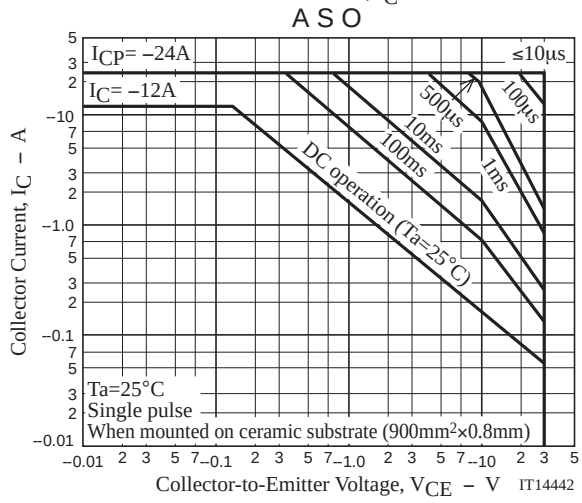
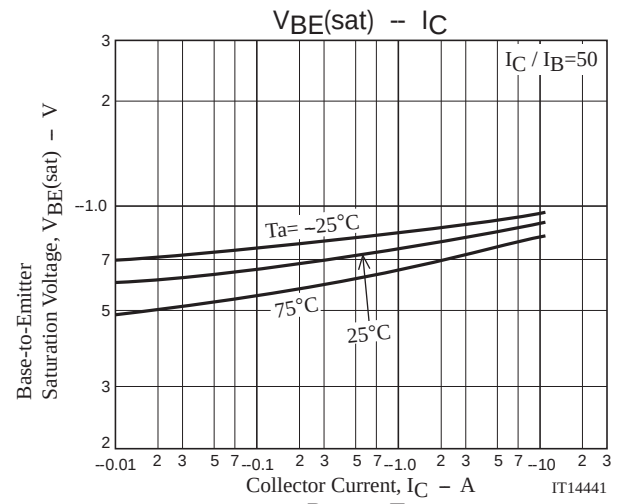
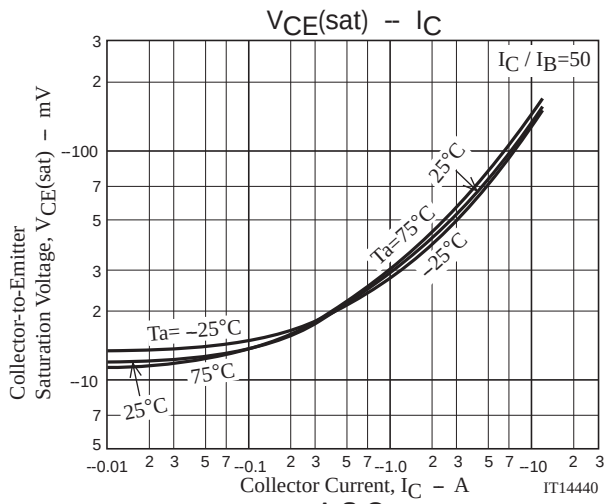


$$I_C = -50I_{B1} = 25I_{B2} = -5A$$

Ordering Information

Device	Package	Shipping	memo
ECH8102-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free





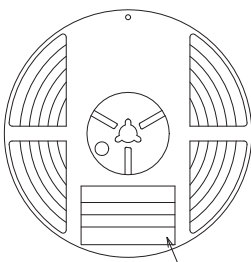
Embossed Taping Specification

ECH8102-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:****)

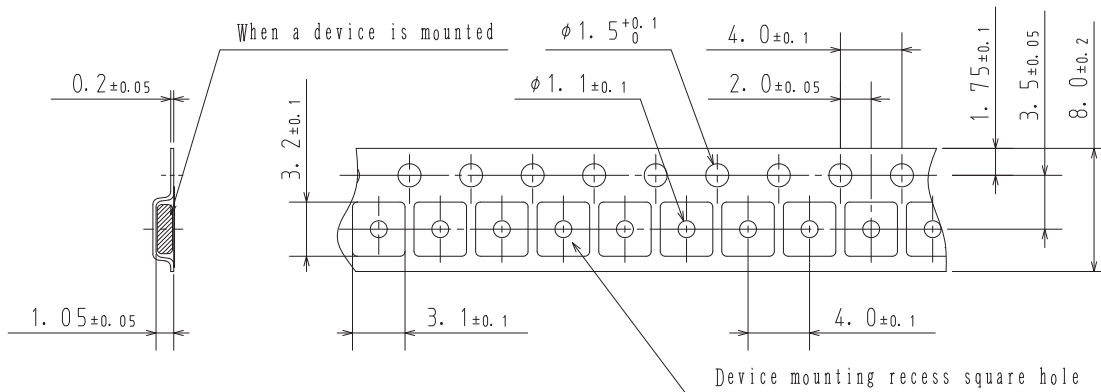
NOTE (1)

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

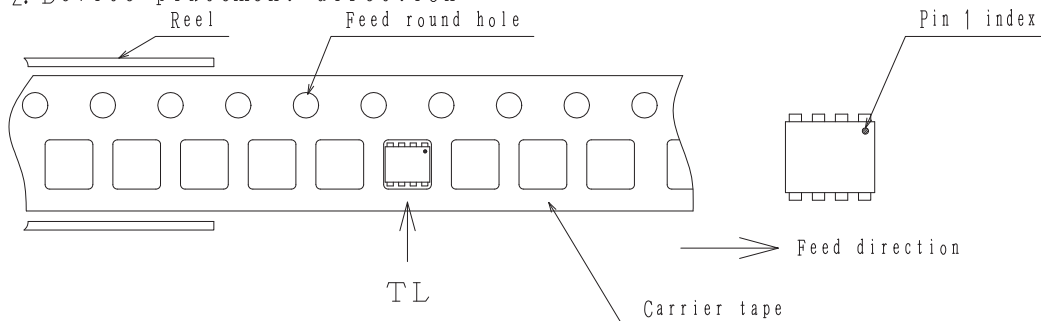
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

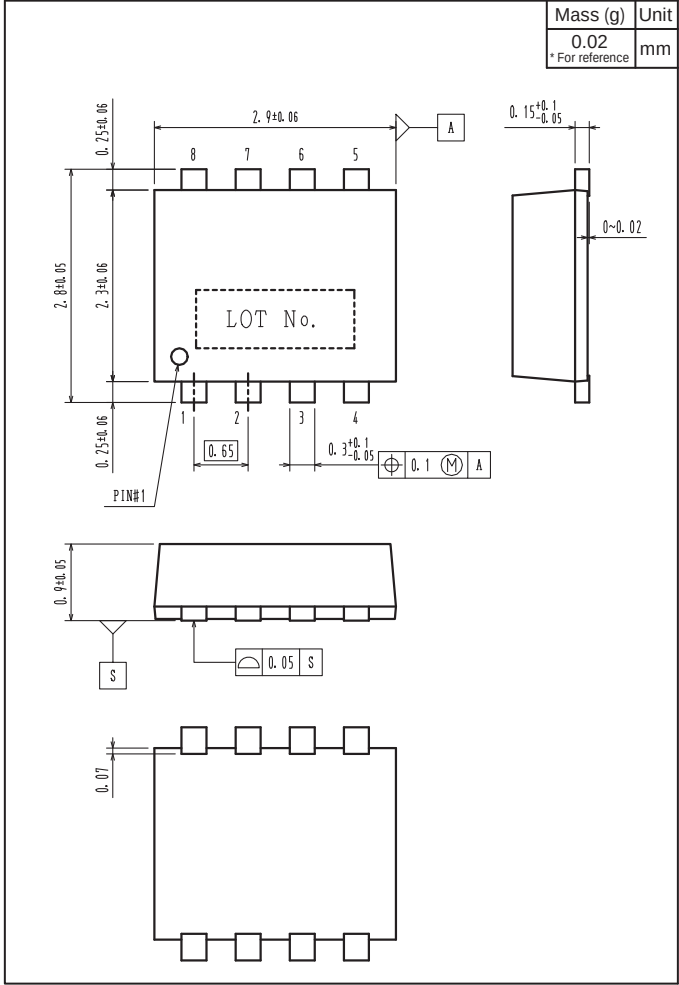


2-2. Device placement direction

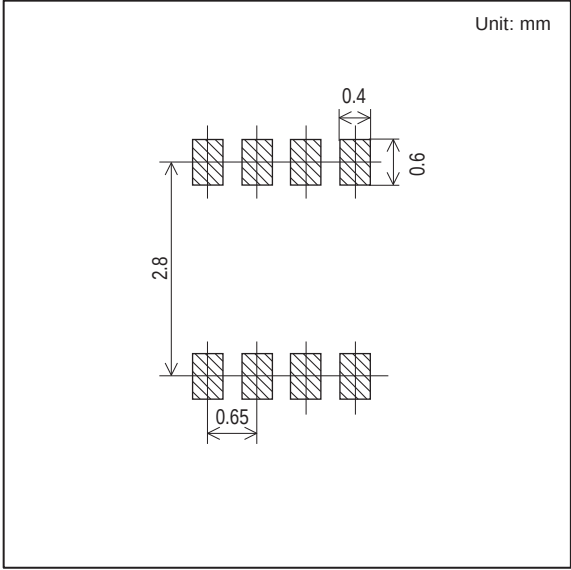


Those with pin 1 index on the feed hole side.....TL

Outline Drawing
ECH8102-TL-H



Land Pattern Example



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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

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