



TND321VD

Excellent Power Device

Dual inverter driver for general purpose, Dual VEC8

ON Semiconductor®

<http://onsemi.com>

Features

- Dual inverter
- Monolithic structure (High voltage CMOS process adopted)
- Withstand voltage of 25V is assured
- Wide range of operating voltage : 4.5V to 25V
- Peak output current : $I_{O+}/I_{O-}=0.8A/1A$
- Fast switching time (30ns typical at 1000pF load)
- Fully compatible input to TTL / CMOS (V_{IH} =up to 2.6V, at V_{DD} =4.5 to 25V)
- Built-in input pull-down resistance

Specifications

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

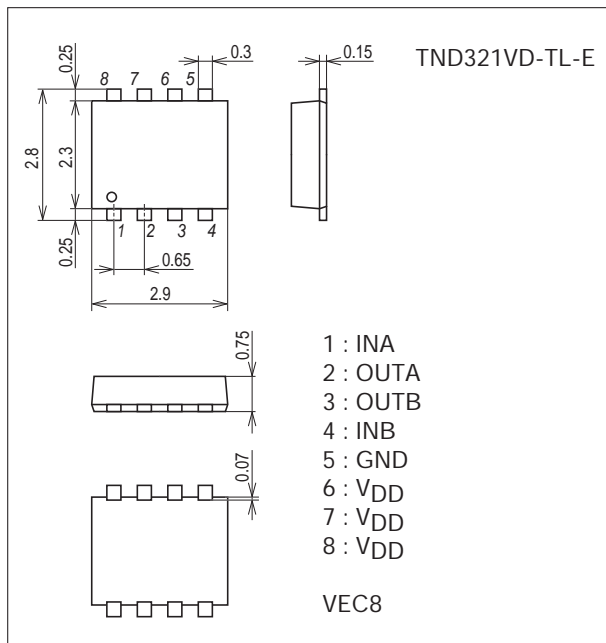
Parameter	Symbol	Conditions	Ratings	Unit
Supply Voltage	V_{DD}		0 to 25	V
Input Voltage	V_{IN}		GND-0.3 to $V_{DD}+0.3$	V
Allowable Power Dissipation	P_D max		0.2	W
Junction Temperature	T_j		-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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)

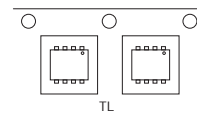
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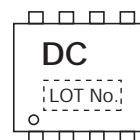
Product & Package Information

- Package : VEC8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

Packing Type : TL



Marking



TND321VD

Recommend Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Operating Supply Voltage	V _{DD}		4.5 to 25	V
Operating Temperature	Topr		-40 to +125	°C

Electrical Characteristics (AC Characteristics) at Ta=25°C, V_{DD}=18V, V_{IN}=5V

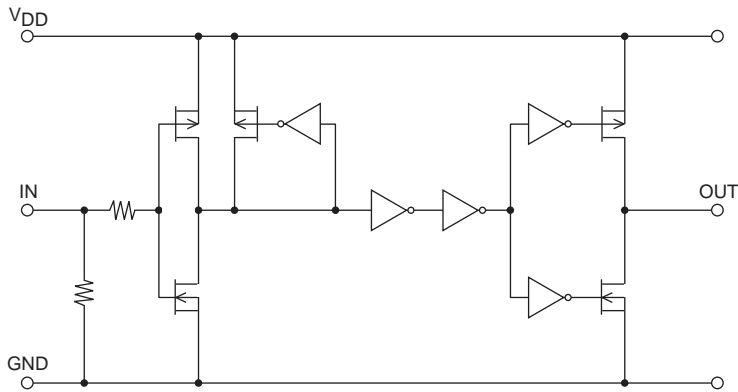
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-On Rise Time	t _r	C _L =1000pF		35	50	ns
Turn-Off Fall Time	t _f	C _L =1000pF		30	45	ns
Delay Time	t _{D1}	C _L =1000pF		30	45	ns
	t _{D2}	C _L =1000pF		45	60	ns

Electrical Characteristics (DC Characteristics) at Ta=25°C, V_{DD}=4.5 to 25V

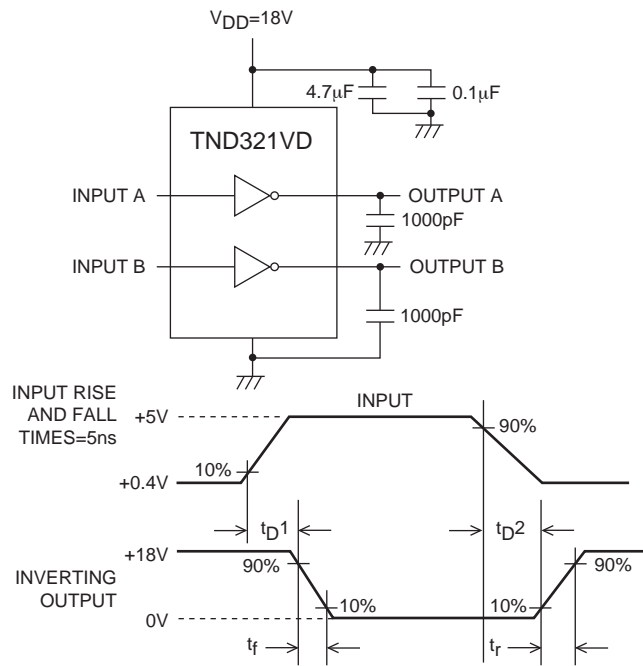
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Logic "1" Input Voltage	V _{IH}		2.6			V
Logic "0" Input Voltage	V _{IL}				0.8	V
Logic "1" Input Bias Current	I _{IN+}	V _{IN} =V _{DD} =25V		40	100	μA
Logic "0" Input Bias Current	I _{IN-}	V _{IN} =0V	-1		1	μA
High-level Output Voltage	V _{OH}	I _O =0A	V _{DD} -0.1			V
Low-level Output Voltage	V _{OL}	I _O =0A			0.1	V
V _{DD} Supply Current	I _{supp}	V _{DD} =10V, V _{IN} =3V, (both inputs)		1.0	4.5	mA
		V _{DD} =10V, V _{IN} =0V, (both inputs)			0.2	mA
Output High Short Circuit Pulsed Current	I _{O+}	V _{DD} =18V, PW≤10μs, V _{OUT} =0V		0.8		A
Output Low Short Circuit Pulsed Current	I _{O-}	V _{DD} =18V, PW≤10μs, V _{OUT} =18V		1.0		A
Output On Resistance	R _{OUT}	V _{DD} =18V, I _{load} =10mA, V _{OUT} ="H"		11	16.5	Ω
		V _{DD} =18V, I _{load} =10mA, V _{OUT} ="L"		6	10	Ω

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Block Diagram



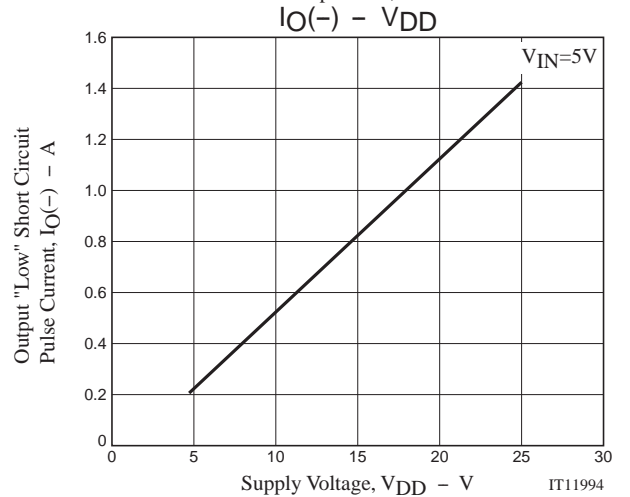
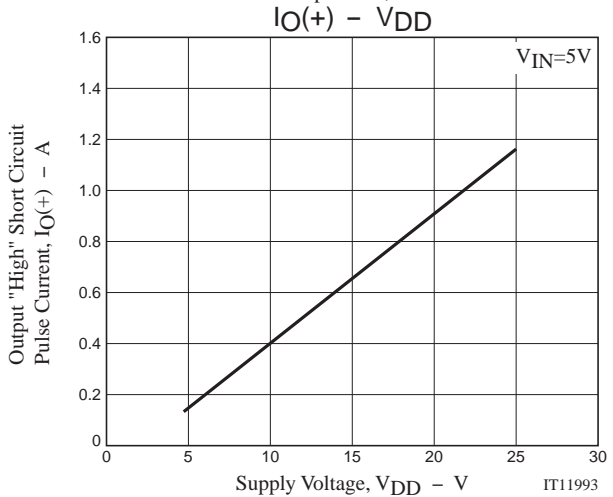
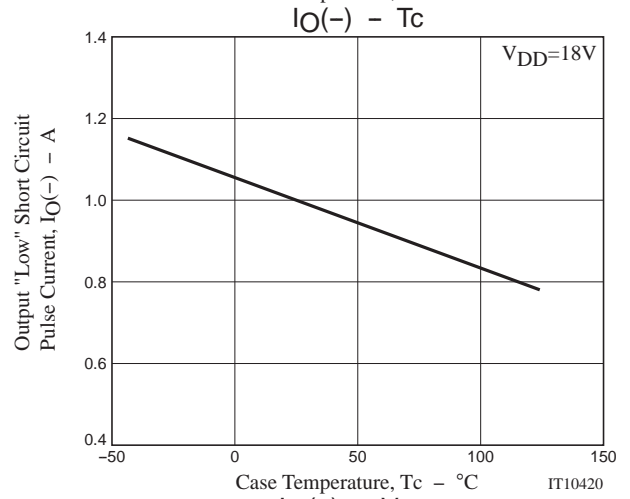
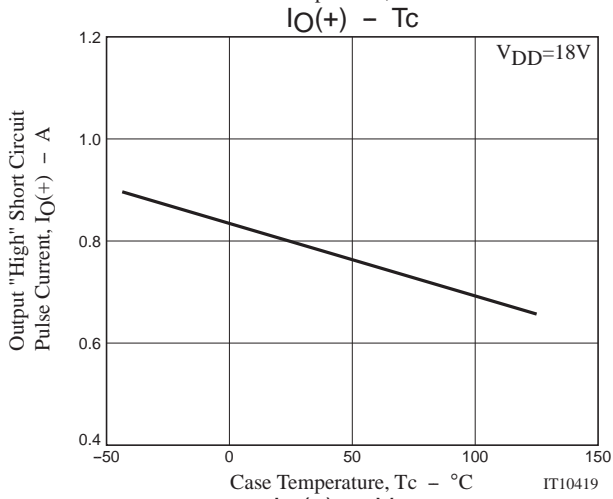
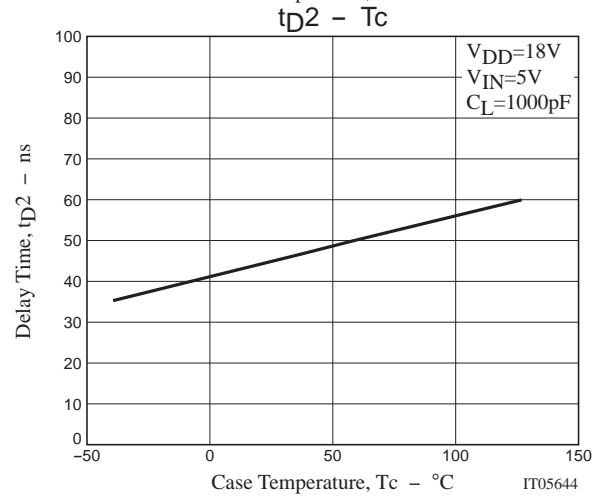
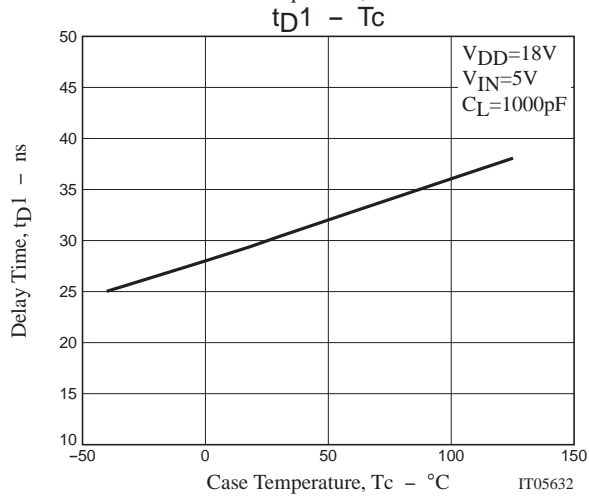
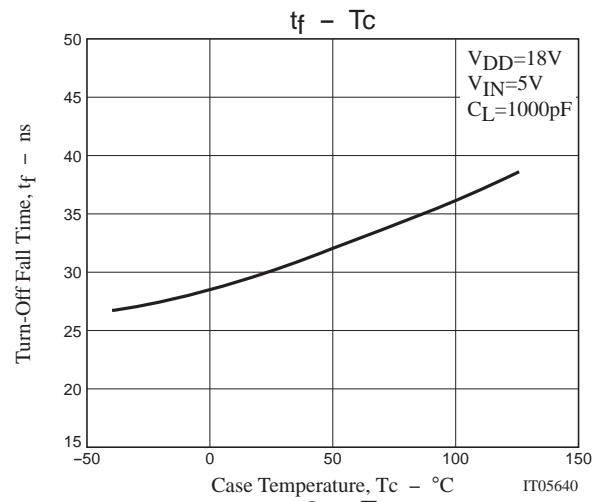
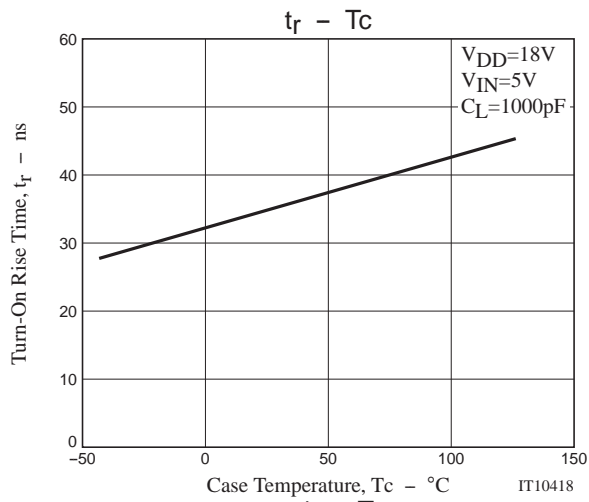
Switching Time Test Circuit



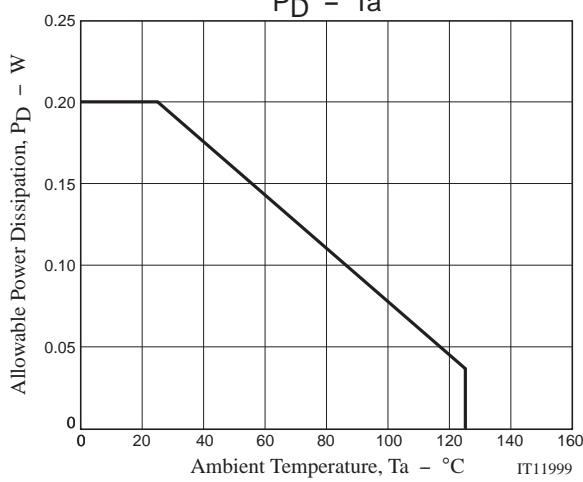
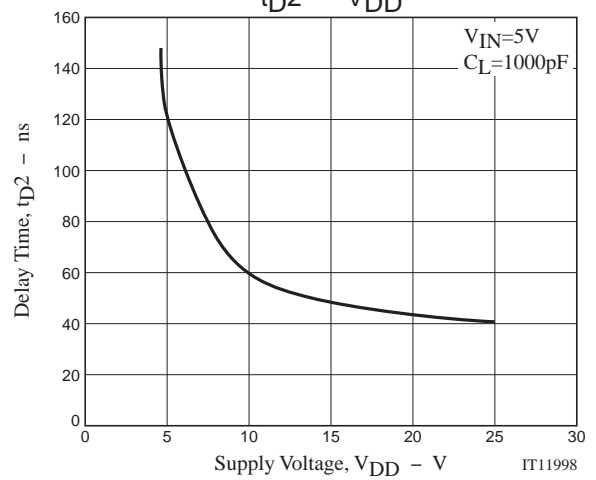
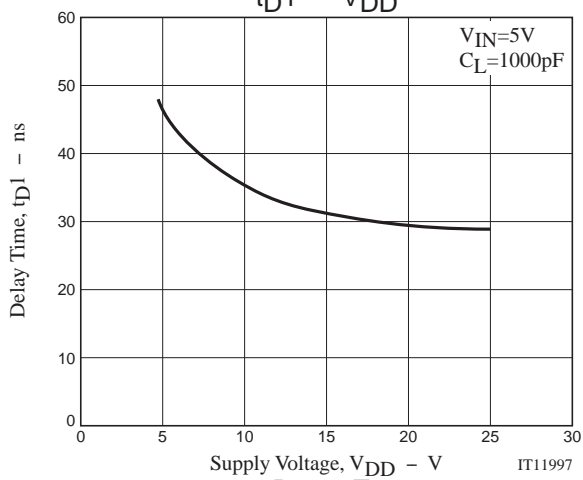
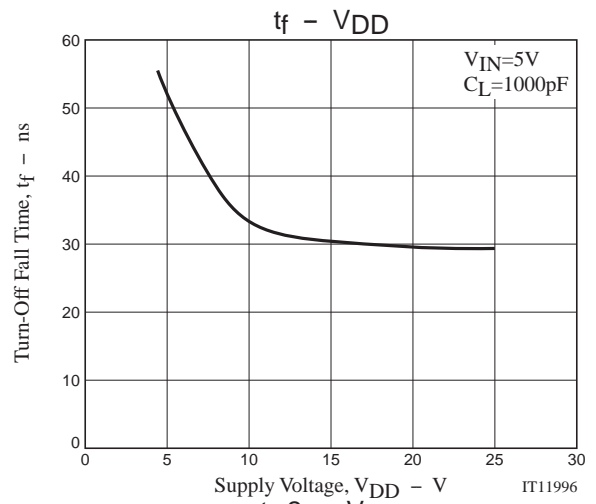
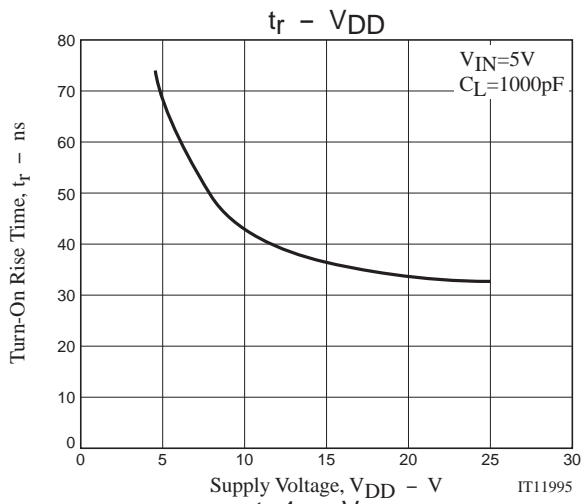
Ordering Information

Device	Package	Shipping	memo
TND321VD-TL-E	VEC8	3,000pcs./reel	Pb Free

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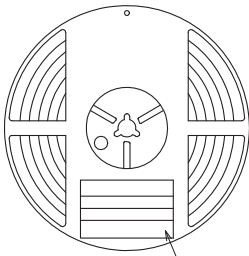
Taping Specification

TND321VD-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)
VEC8	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

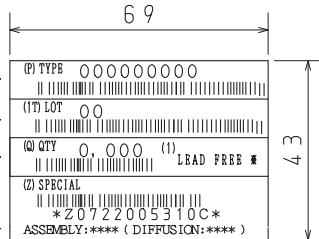
Packing method



Reel label

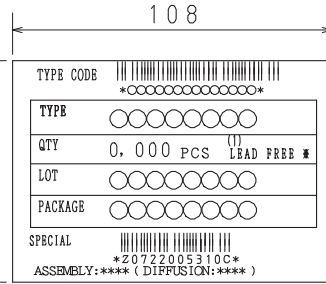
Type No.
LOT No.
Quantity
Origin

Reel label, Inner box label (unit:mm)



Outer box label

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



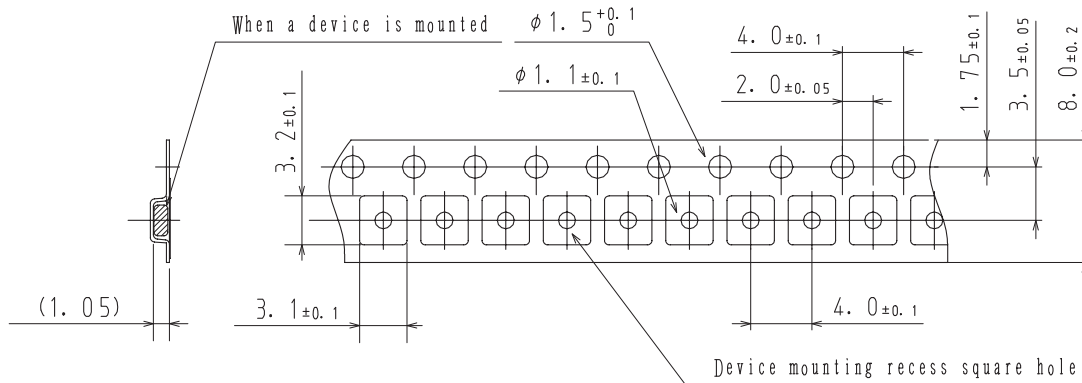
NOTE (1)

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

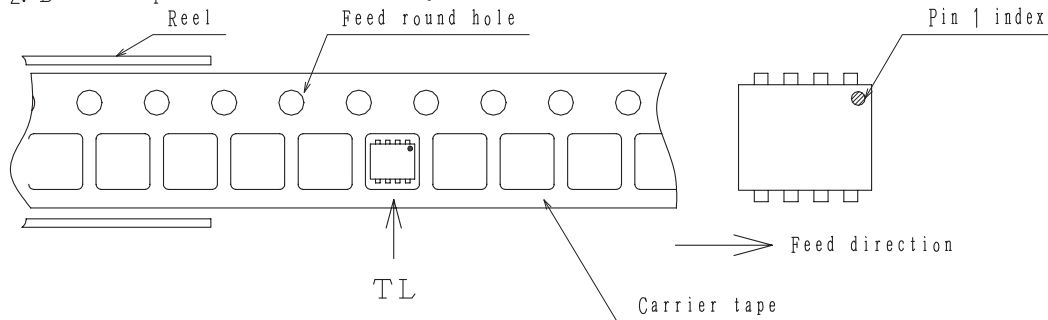
2. Taping configuration

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



Device mounting recess square hole

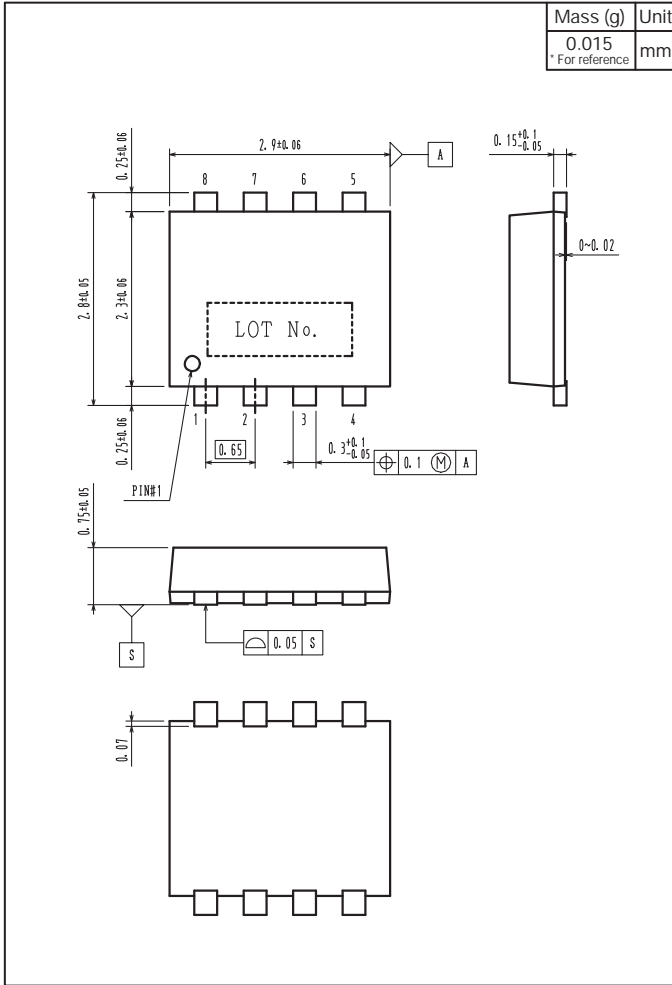
2-2. Device placement direction



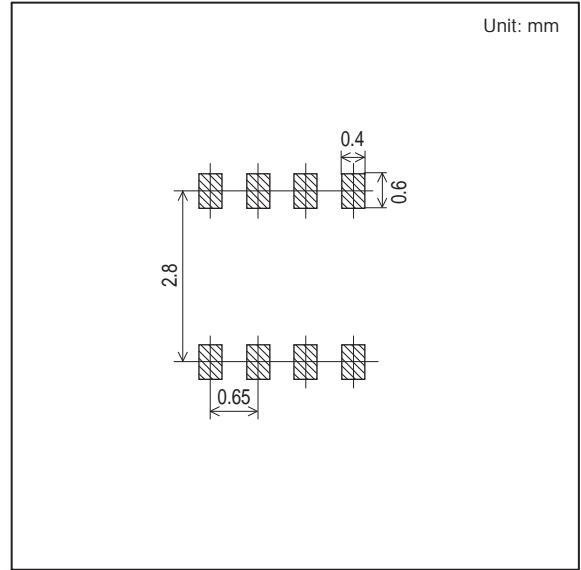
Those with oen electrode terminal on the feed hole side.....TL

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Outline Drawing TND321VD-TL-E



Land Pattern Example



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