



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

TND321VD — ExPD (Excellent Power Device) General Purpose Driver for PDP Sustain Pulse Drive, Motor Drive, Switching Power Supply, and DC / DC Converter Applications

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 : IO+/IO-=0.8A /1A
- Fast switching time (30ns typical at 1000pF load)
- Fully compatible input to TTL / CMOS (VIH=up to 2.6V, at VDD=4.5 to 25V)
- Built-in input pull-down resistance

Specifications

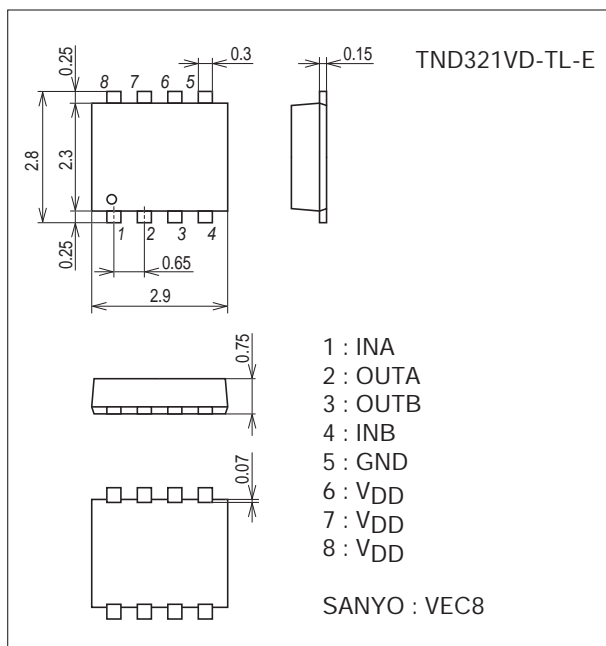
Absolute Maximum Ratings at Ta=25°C

| 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 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Package Dimensions

unit : mm (typ)

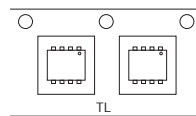
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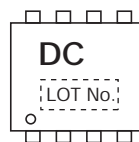
Product & Package Information

- 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

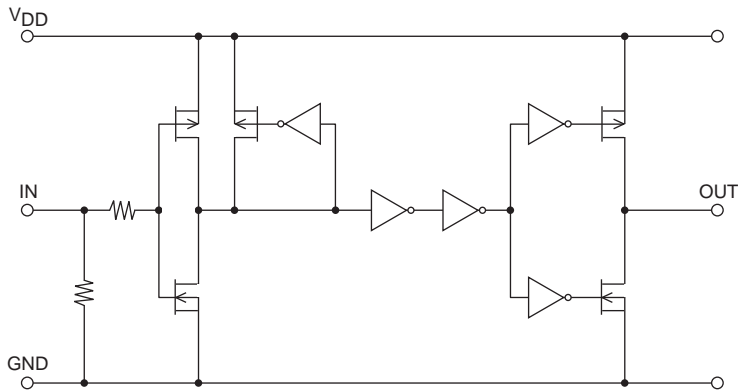
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------|-----------------|------------------------|---------|-----|-----|------|
| | | | min | typ | max | |
| Turn-On Rise Time | t _r | C _L =1000pF | | 35 | 50 | ns |
| Turn-Off Fall Time | t _f | C _L =1000pF | | 30 | 45 | ns |
| 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

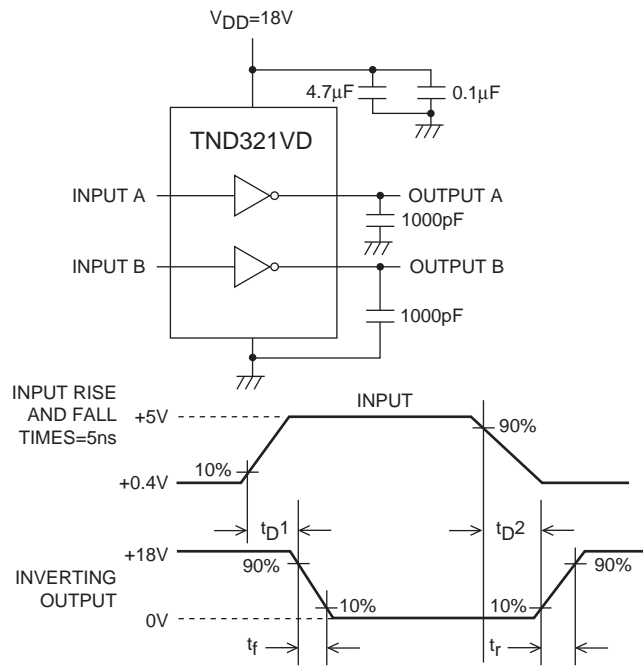
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|-------------------|--|----------------------|-----|------|------|
| | | | min | typ | max | |
| Logic "1" Input Voltage | V _{IH} | | 2.6 | | | V |
| Logic "0" Input Voltage | V _{IL} | | | | 0.8 | V |
| Logic "1" Input Bias Current | I _{IN+} | 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 |

TND321VD

Block Diagram



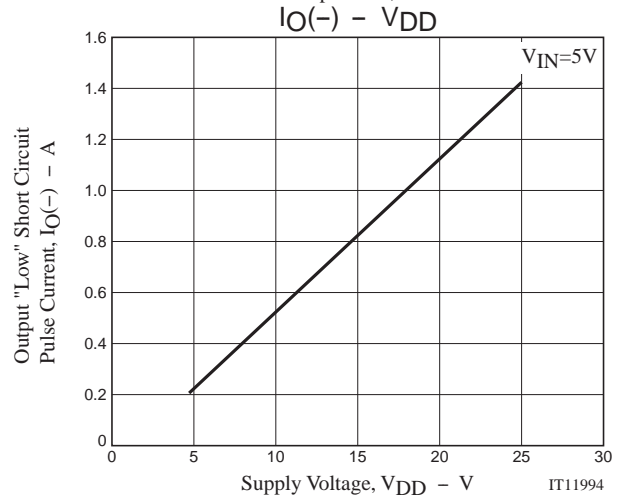
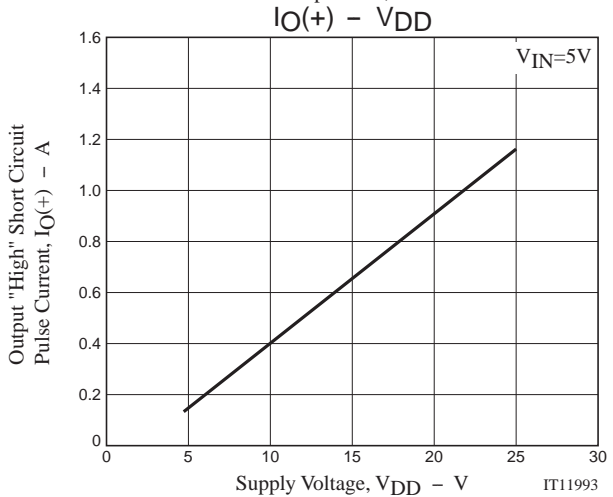
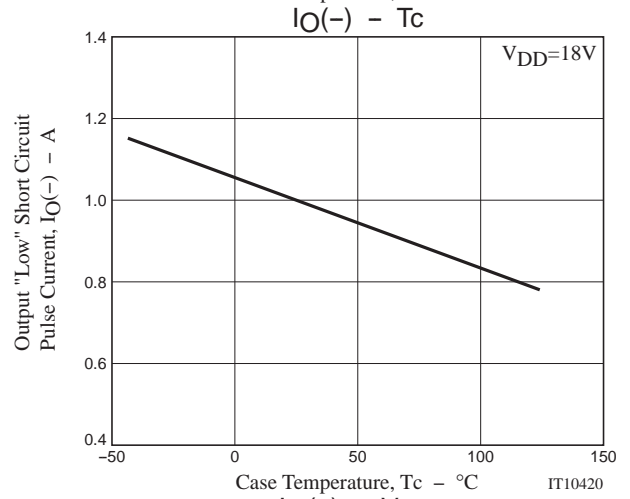
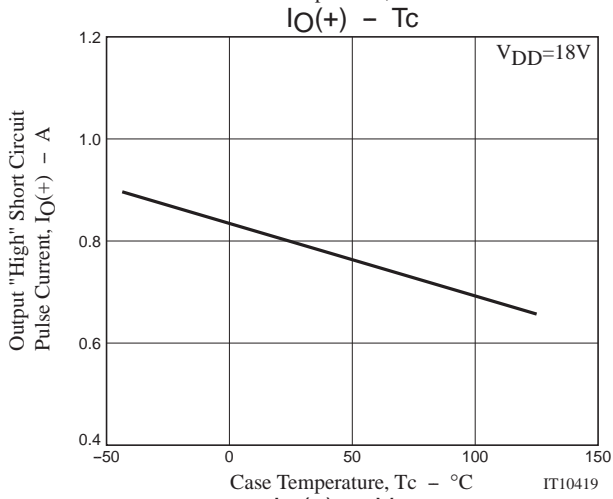
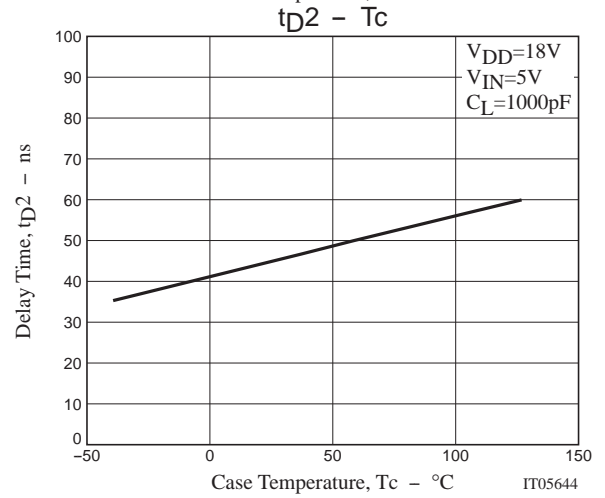
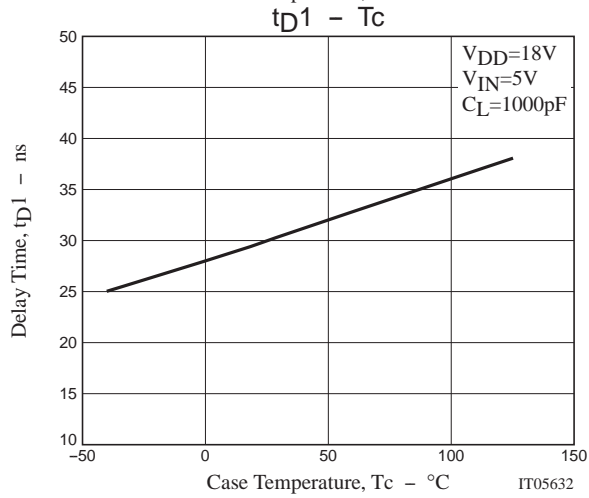
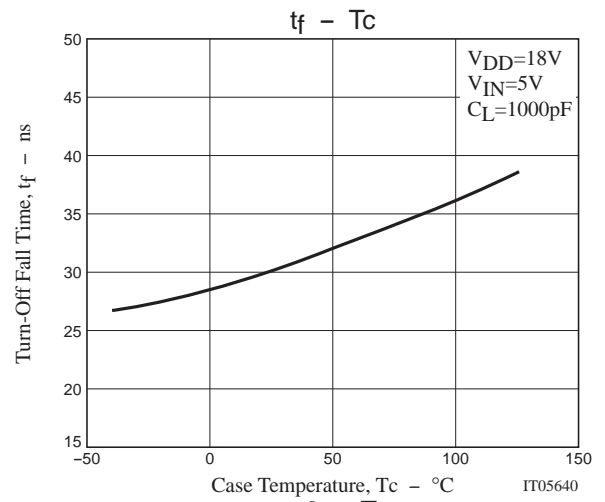
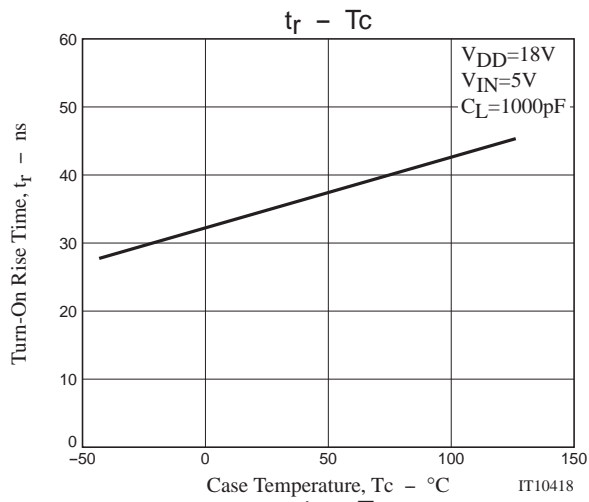
Switching Time Test Circuit



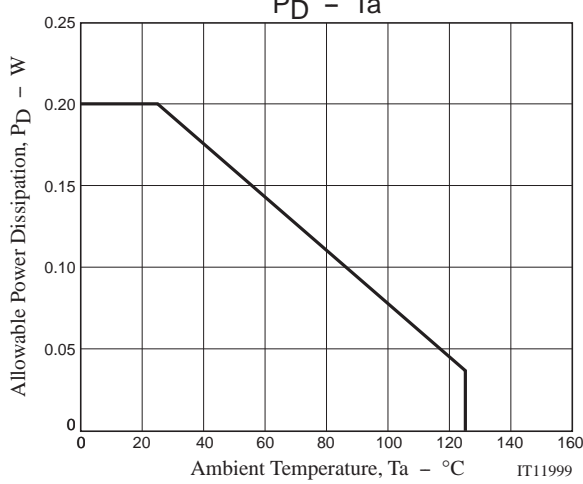
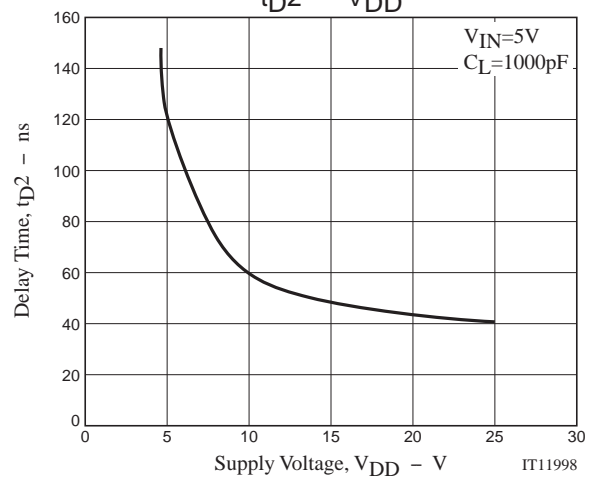
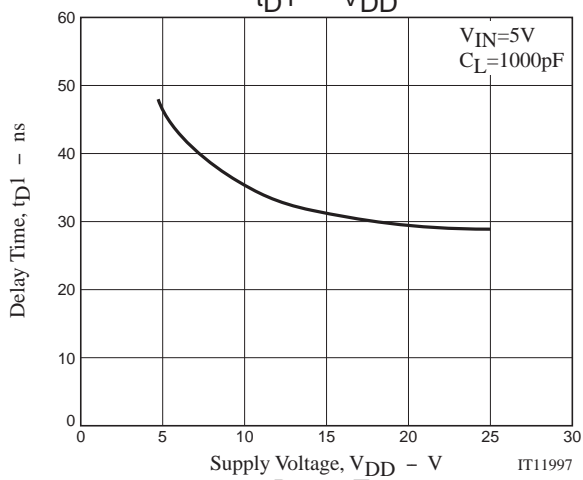
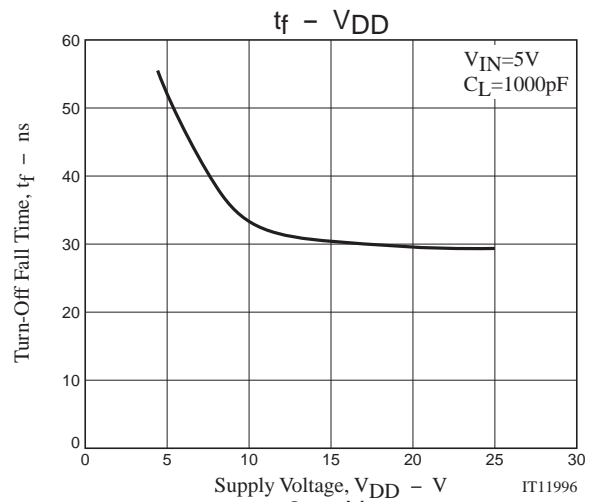
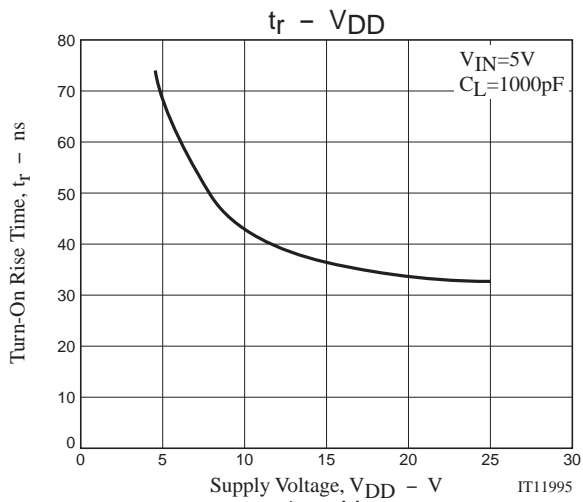
Ordering Information

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

TND321VD



TND321VD



TND321VD

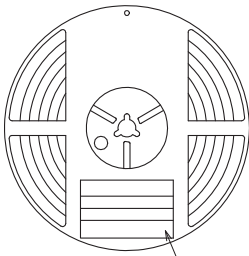
Taping Specification

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 |

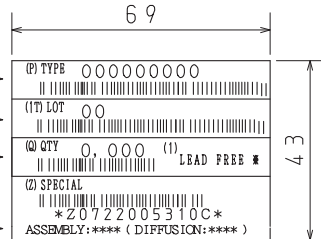
Packing method



Reel label

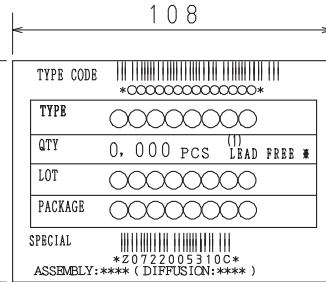
Type No.
LOT No.
Quantity
Origin

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.



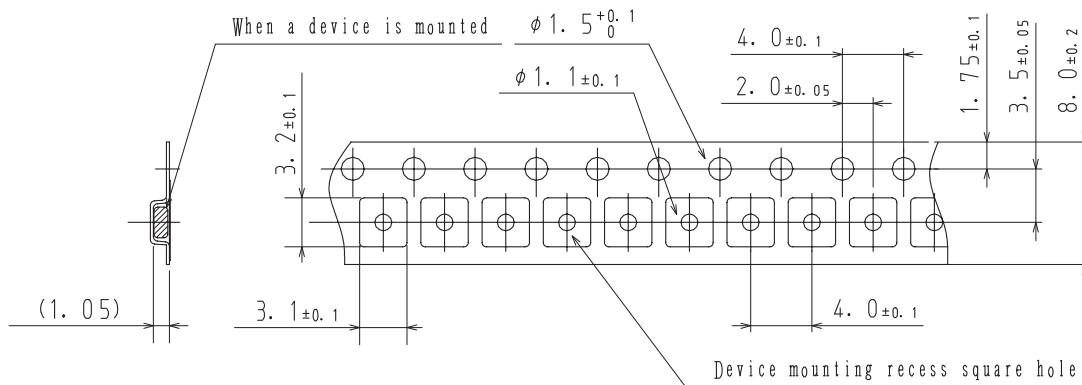
NOTE (1)

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

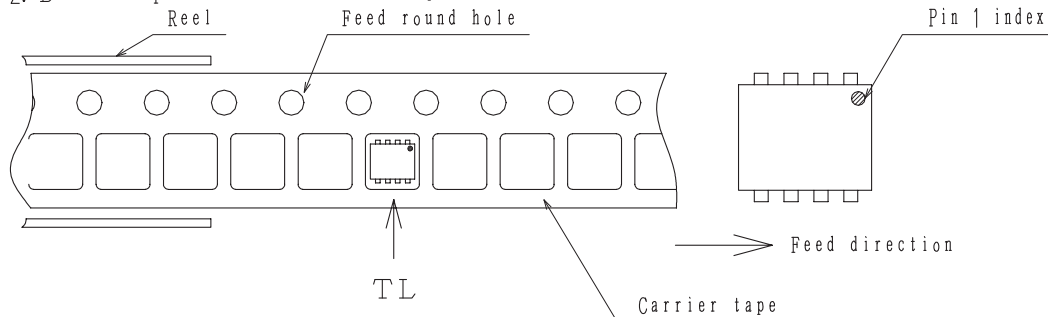
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

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



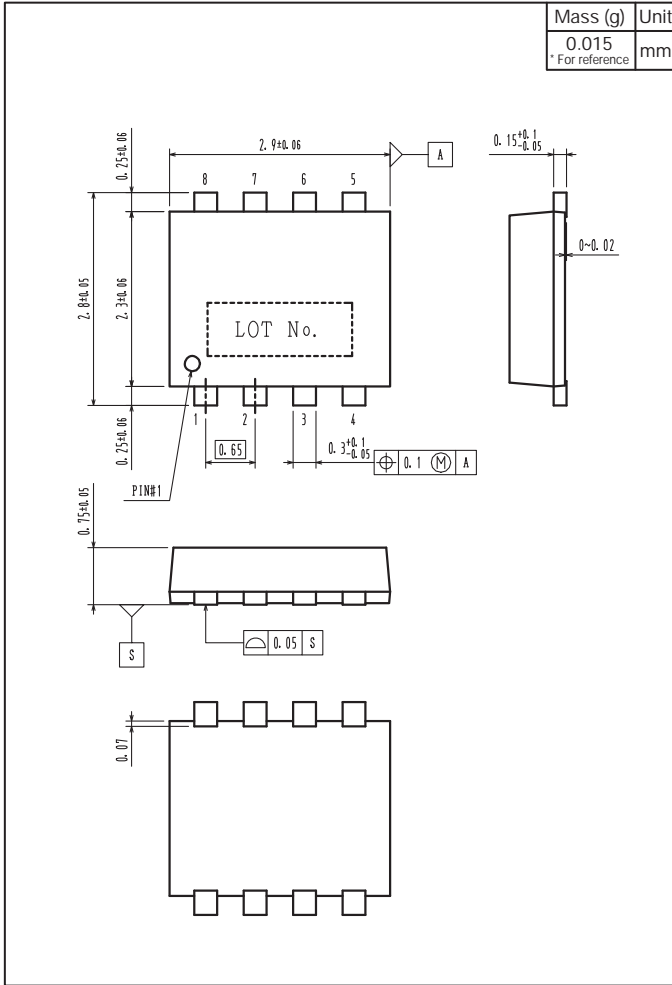
2-2. Device placement direction



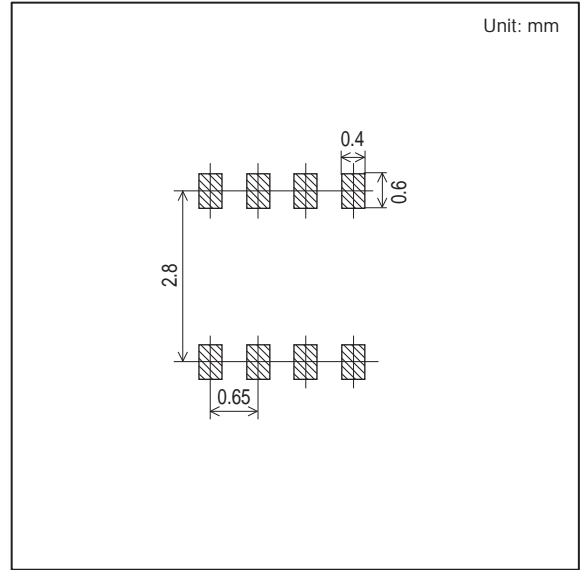
Those with oen electrode terminal on the feed hole side.....TL

TND321VD

Outline Drawing TND321VD-TL-E



Land Pattern Example



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