



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## TND315S — ExPD (Excellent Power Device) General Purpose Driver for PDP Sustain Pulse Drive, Motor Drive, Switching Power Supply, and DC / DC Converter Applications

### Features

- Dual buffer
- Withstand voltage of 25V is assured
- Peak output current : 1A
- Fully compatible input to TTL / CMOS (VIH=up to 2.6V, at VDD=4.5 to 25V)
- Monolithic structure (High voltage CMOS process adopted)
- Wide range of operating voltage : 4.5V to 25V
- Fast switching time (30ns typical at 1000pF load)
- Built-in input pull-down resistance

### Specifications

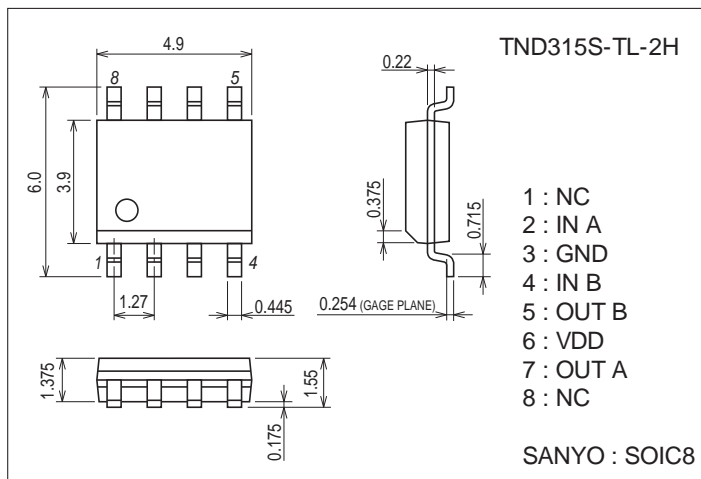
Absolute Maximum Ratings at Ta=25°C

| Parameter                   | Symbol | Conditions | Ratings             | Unit |
|-----------------------------|--------|------------|---------------------|------|
| Supply Voltage              | VDD    |            | 0 to 25             | V    |
| Input Voltage               | VIN    |            | GND -0.3 to VDD+0.3 | V    |
| Allowable Power Dissipation | PD max |            | 0.3                 | V    |
| Junction Temperature        | Tj     |            | -55 to 150          | °C   |
| Storage Temperature         | Tstg   |            | -55 to 150          | °C   |

### Package Dimensions

unit : mm (typ)

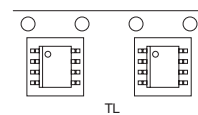
7072-005



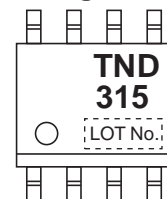
### Product & Package Information

- Package : SOIC8
- JEITA, JEDEC : SC-87, SOT-96
- Minimum Packing Quantity : 2,500 pcs./reel

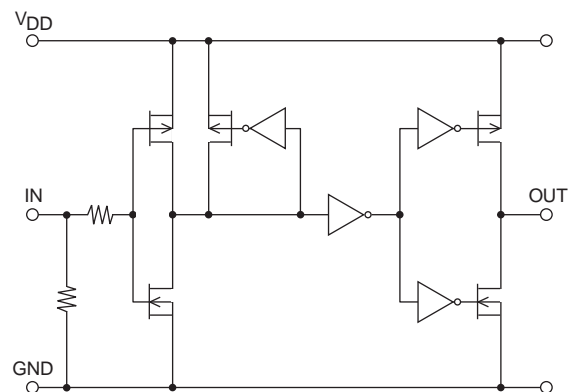
### Packing Type: TL



### Marking



### Block Diagram



# TND315S

## Recommend Operating Conditions at Ta=25°C

| Parameter                | Symbol          | Conditions | Ratings     | Unit |
|--------------------------|-----------------|------------|-------------|------|
| Operating Supply Voltage | V <sub>DD</sub> |            | 4.5 to 25   | V    |
| Operating Temperature    | Topr            |            | -40 to +125 | °C   |

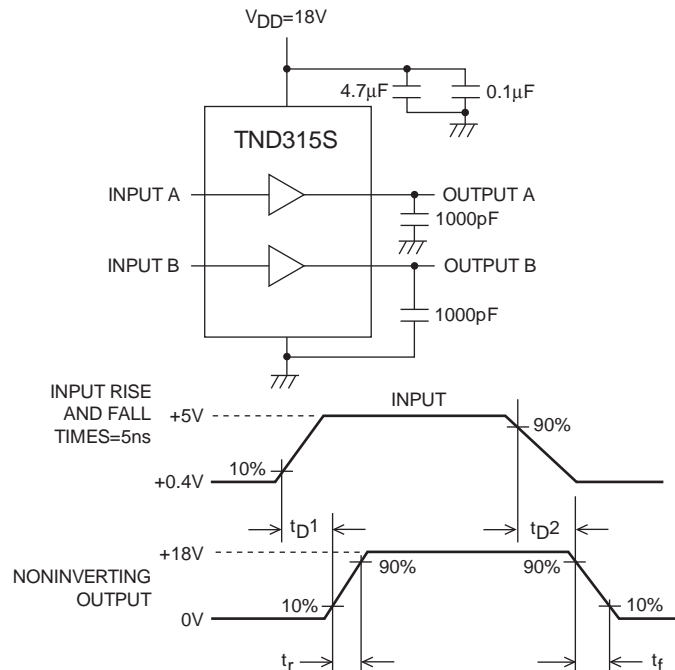
## Electrical Characteristics (AC Characteristics) at Ta=25°C, V<sub>DD</sub>=18V, V<sub>IN</sub>=5V

| Parameter          | Symbol          | Conditions             | Ratings |     |     | Unit |
|--------------------|-----------------|------------------------|---------|-----|-----|------|
|                    |                 |                        | min     | typ | max |      |
| Turn-ON Rise Time  | t <sub>r</sub>  | C <sub>L</sub> =1000pF |         | 30  | 45  | ns   |
| Turn-OFF Fall Time | t <sub>f</sub>  | C <sub>L</sub> =1000pF |         | 30  | 45  | ns   |
| Delay Time         | t <sub>D1</sub> | C <sub>L</sub> =1000pF |         | 30  | 45  | ns   |
|                    | t <sub>D2</sub> | C <sub>L</sub> =1000pF |         | 45  | 60  | ns   |

## Electrical Characteristics (DC Characteristics) at Ta=25°C, V<sub>DD</sub>=4.5 to 25V

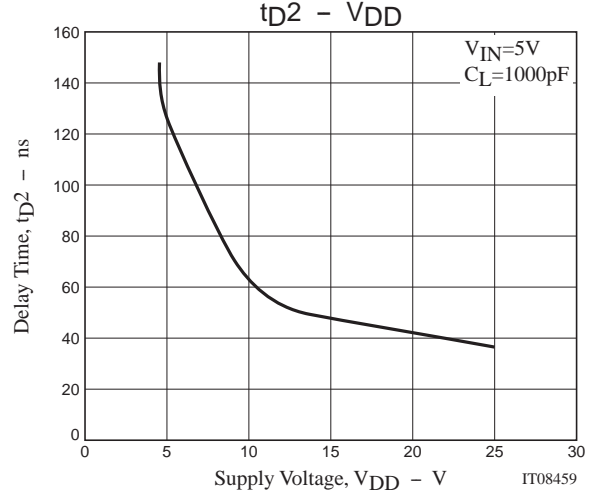
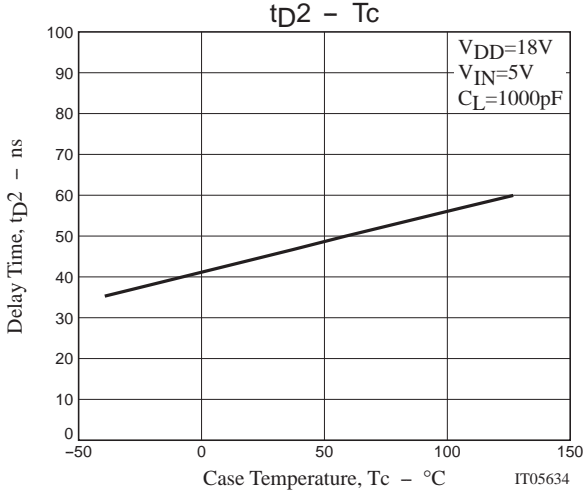
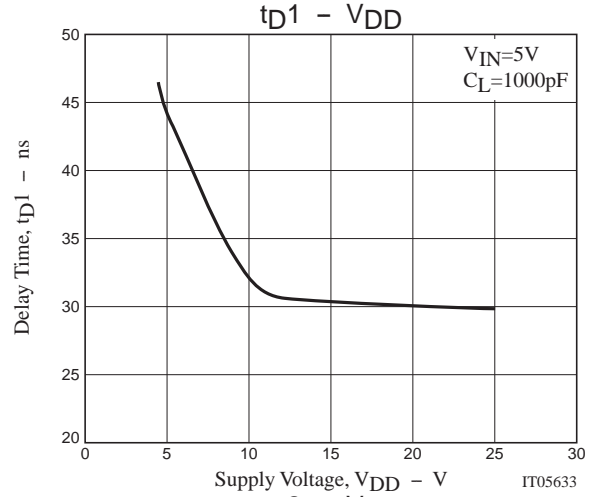
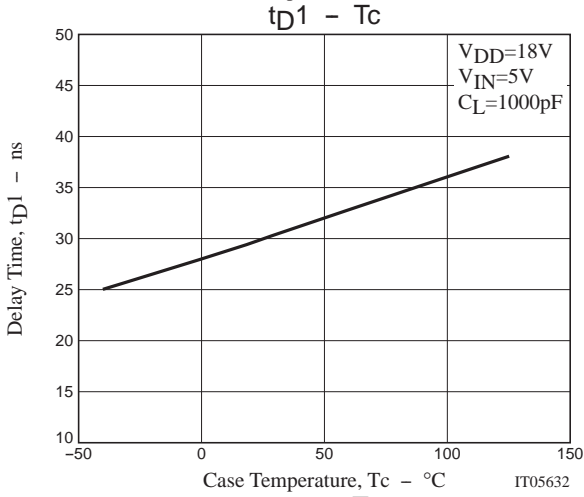
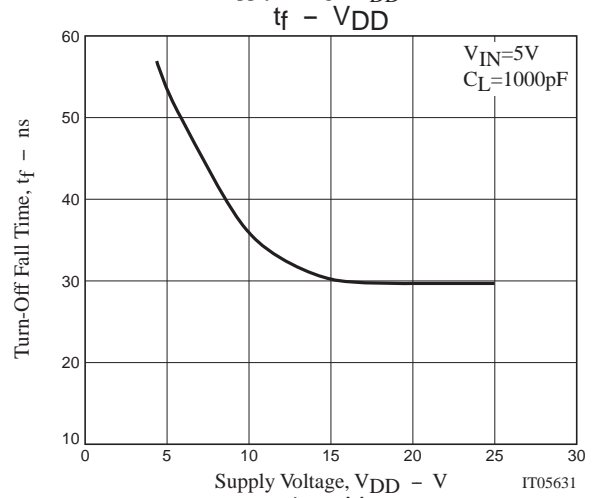
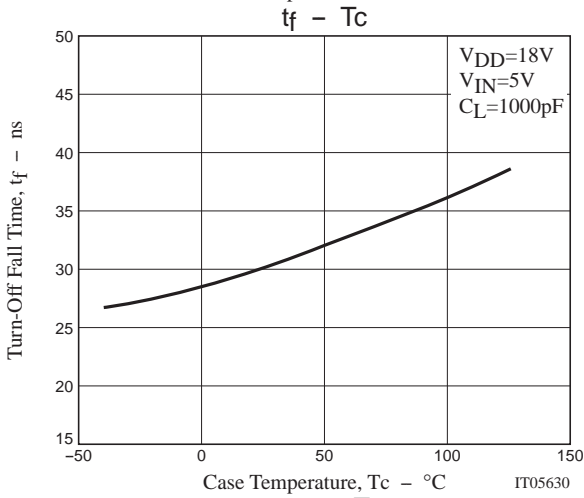
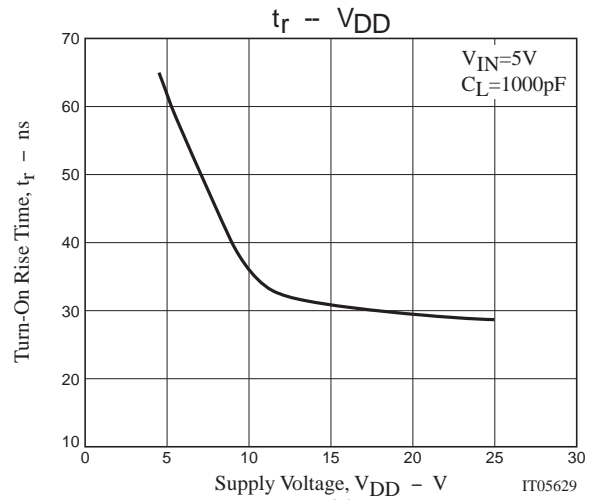
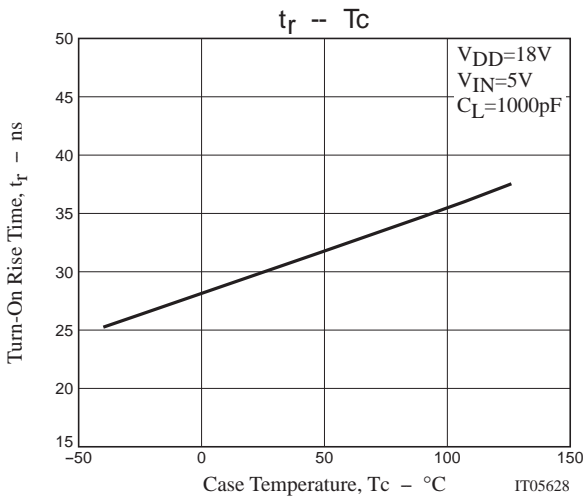
| Parameter                               | Symbol            | Conditions   | Ratings              |     |     | Unit |
|---|-------------------|--|----------------------|-----|-----|------|
|   |                   |  | min                  | typ | max |      |
| Logic "1" Input Voltage                 | V <sub>IH</sub>   |  | 2.6                  |     |     | V    |
| Logic "0" Input Voltage                 | V <sub>IL</sub>   |  |                      |     | 0.8 | V    |
| Logic "1" Input Bias Current            | I <sub>IN+</sub>  | V <sub>IN</sub> =V <sub>DD</sub> =25V                                |                      | 40  | 100 | μA   |
| Logic "0" Input Bias Current            | I <sub>IN-</sub>  | V <sub>IN</sub> =0V or V <sub>DD</sub>                               | -1                   |     | 1   | μA   |
| High Level Output Voltage               | V <sub>OH</sub>   | I <sub>O</sub> =0A   | V <sub>DD</sub> -0.1 |     |     | V    |
| Low Level Output Voltage                | V <sub>OL</sub>   | I <sub>O</sub> =0A   |                      |     | 0.1 | V    |
| V <sub>DD</sub> Supply Current          | I <sub>supp</sub> | V <sub>DD</sub> =10V, V <sub>IN</sub> =3V, (both inputs)             |                      | 1.0 | 4.5 | mA   |
|   |                   | V <sub>DD</sub> =10V, V <sub>IN</sub> =0V, (both inputs)             |                      |     | 0.2 | mA   |
| Output High Short Circuit Pulse Current | I <sub>O+</sub>   | V <sub>DD</sub> =18V, PW≤10μs, V <sub>OUT</sub> =0V                  |                      | 1.0 |     | A    |
| Output Low Short Circuit Pulse Current  | I <sub>O-</sub>   | V <sub>DD</sub> =18V, PW≤10μs, V <sub>OUT</sub> =18V                 |                      | 1.0 |     | A    |
| Output On Resistance                    | R <sub>OUT</sub>  | V <sub>DD</sub> =18V, I <sub>load</sub> =10mA, V <sub>OUT</sub> ="H" |                      | 8   | 12  | Ω    |
|   |                   | V <sub>DD</sub> =18V, I <sub>load</sub> =10mA, V <sub>OUT</sub> ="L" |                      | 6   | 10  | Ω    |

## Switching Time Test Circuit

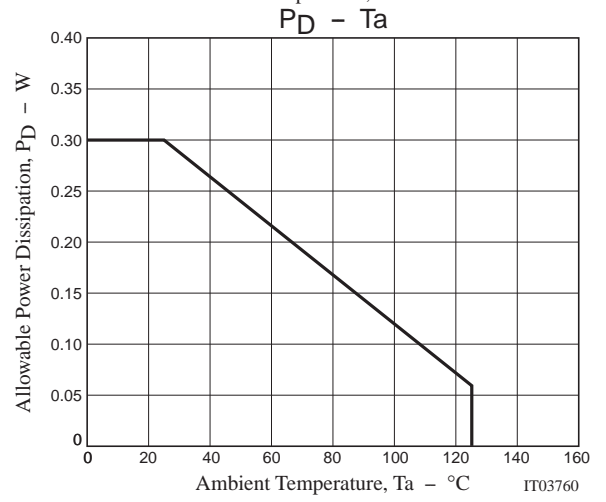
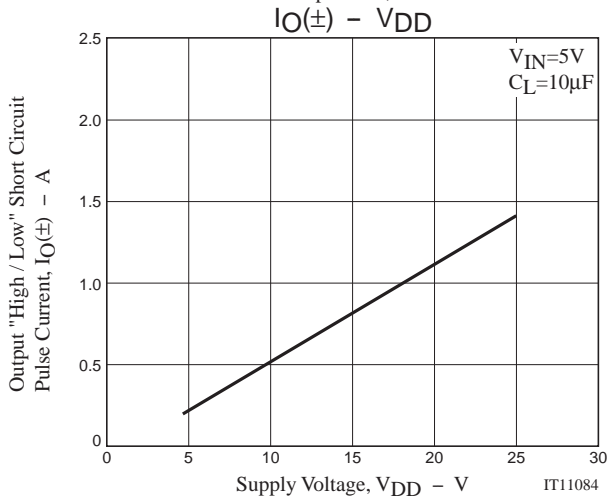
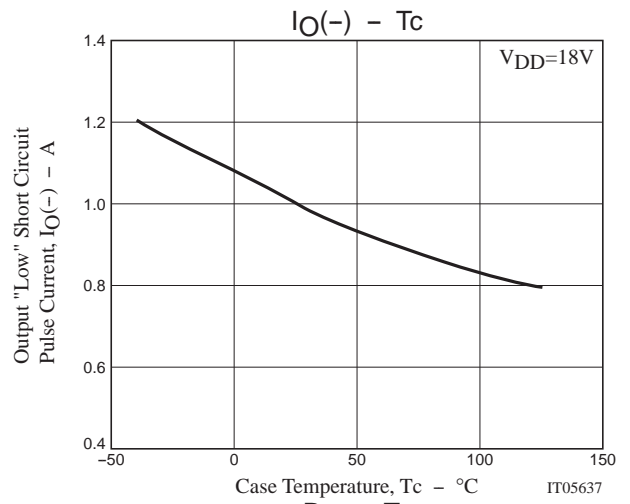
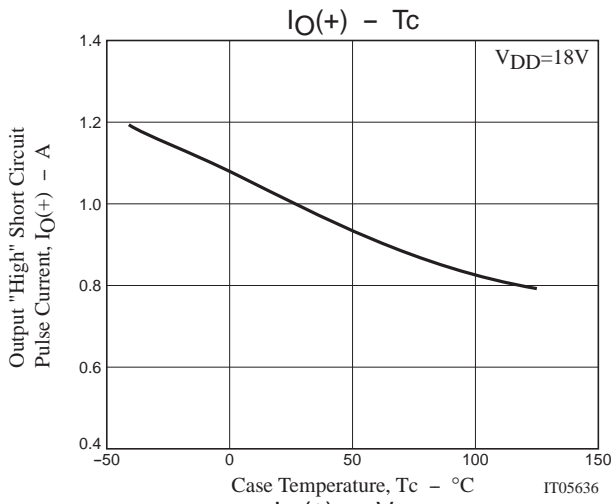


## Ordering Information

| Devices       | Package | Shipping       | memo                     |
|---------------|---------|----------------|--------------------------|
| TND315S-TL-2H | SOIC8   | 2,500pcs./reel | Pb Free and Halogen Free |



# TND315S



# TND315S

## Taping Specification

TND315S-TL-2H

### 1. Packing Format

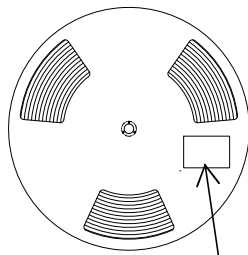
| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) |           |           | Packing format  |  |
|--------------|-------------------|---|-----------|-----------|---|--|
|              |                   | Reel                                      | Inner box | Outer box | Inner BOX W206-112  | Outer BOX W207-124   |
| SOIC8        | B202-101          | 2,500                                     | 12,500    | 25,000    | 5 reels contained<br>Dimensions :mm(external)<br>340×95×340 | 2 inner boxes contained<br>Dimensions :mm(external)<br>360×210×375 |

#### Packing method

#### 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.



Type No. →  
LOT No. →  
Quantity →  
Origin →

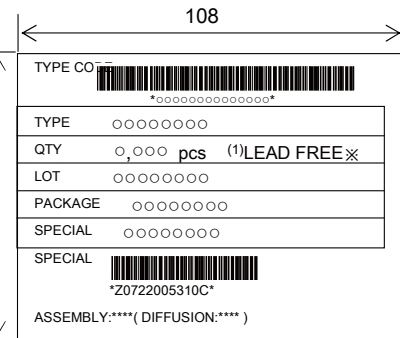
Reel label



NOTE(1)

The LEAD FREE 4 description shows that it is complete lead free.

43  
80

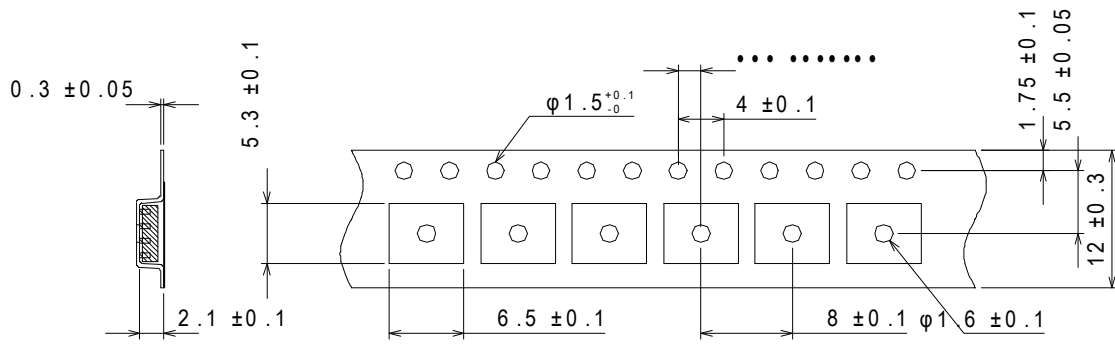


| Label       | JEITA Phase   |
|-------------|---------------|
| LEAD FREE 4 | JEITA Phase 3 |

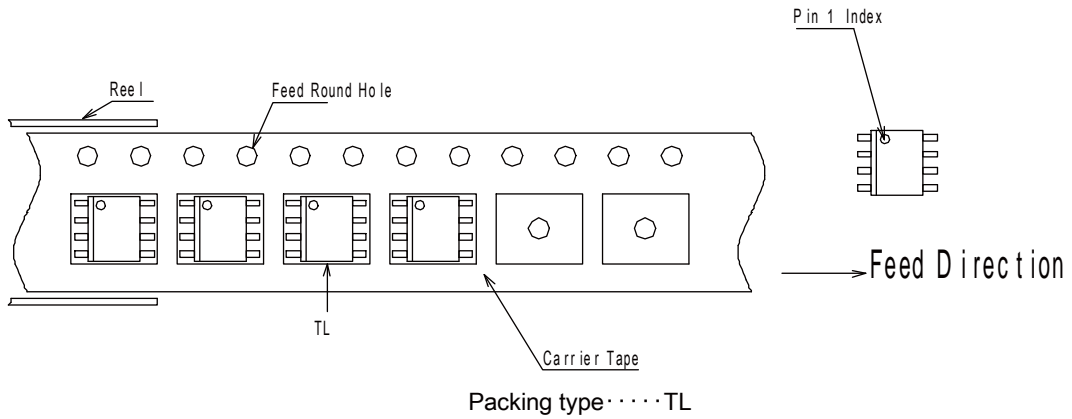
# TND315S

## 2. Taping configuration

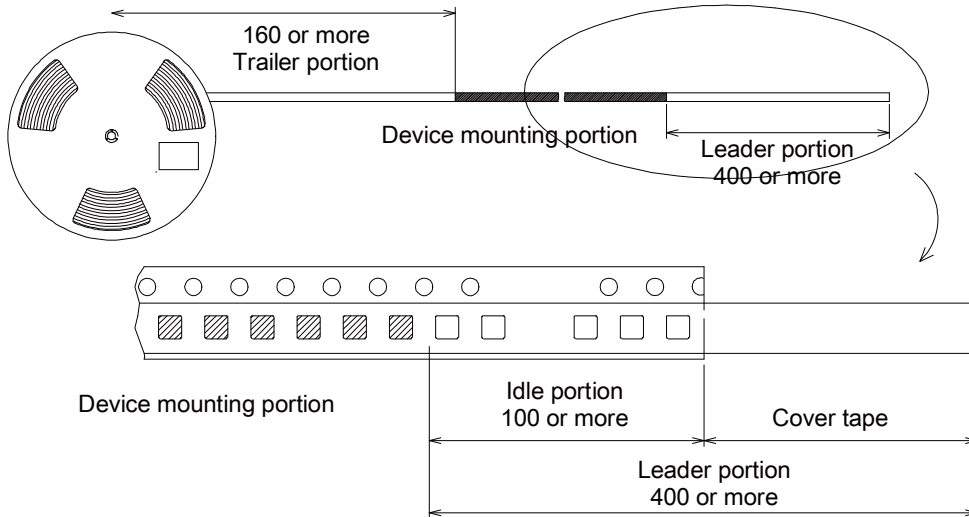
### 2-1. Carrier tape size (unit: mm)



### 2-2. Device placement direction



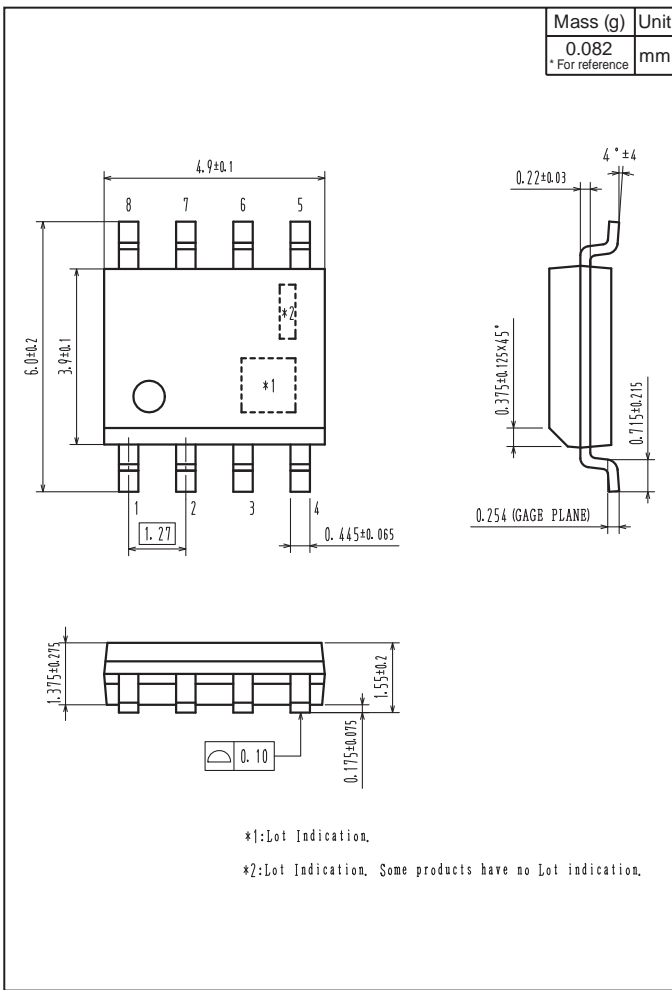
### 2-3. Leader portion and trailer portion (unit: mm)



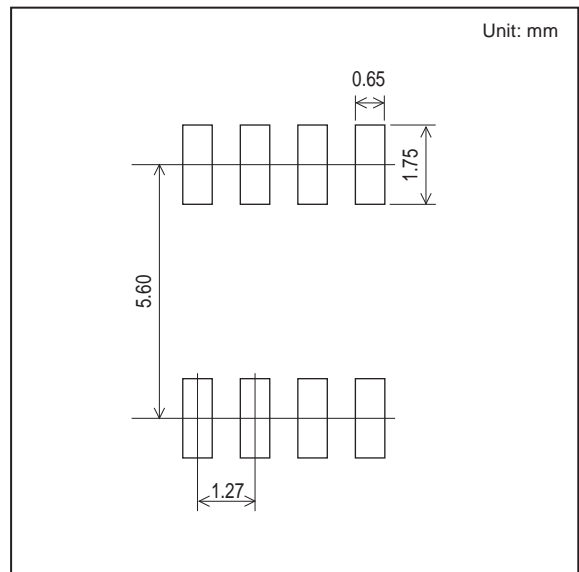
# TND315S

## Outline Drawing

TND315S-TL-2H



## Land Pattern Example



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