



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

TND316S — ExPD (Excellent Power Device)

General Purpose Driver for PDP Sustain Pulse Drive, Motor Drive, Switching Power Supply, and DC / DC Converter Applications

Features

- Inverter buffer
- Withstand voltage of 25V is assured
- Peak output current : 1A
- 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
- Monolithic structure (High voltage CMOS process adopted)
- Wide range of operating voltage : 4.5V to 25V
- Fast switching time (30ns typical at 1000pF load)

Specifications

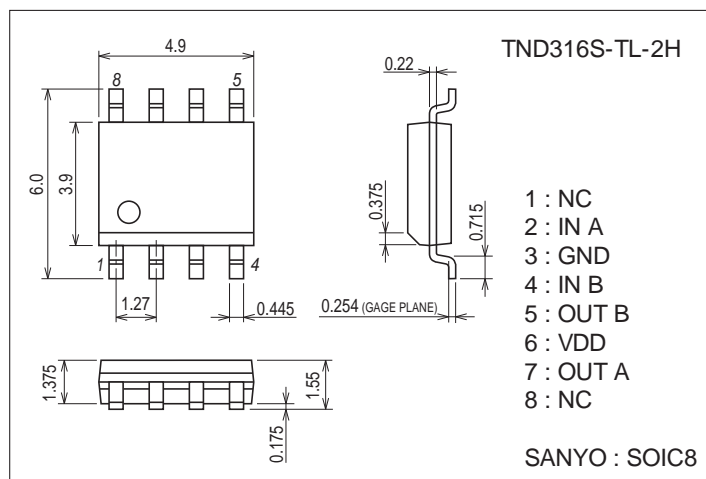
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

| 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 | | 0.3 | W |
| Junction Temperature | T_j | | -55 to +150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

Package Dimensions

unit : mm (typ)

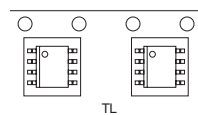
7072-005



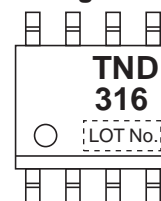
Product & Package Information

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

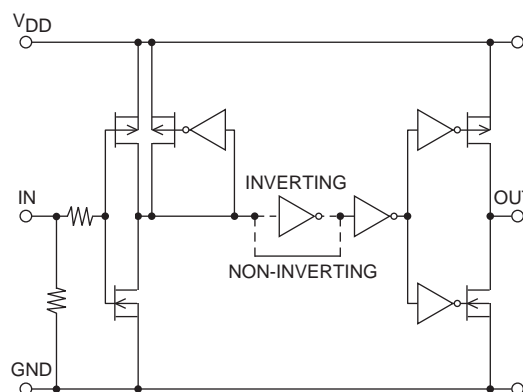
Packing Type: TL



Marking



Block Diagram



TND316S

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 |

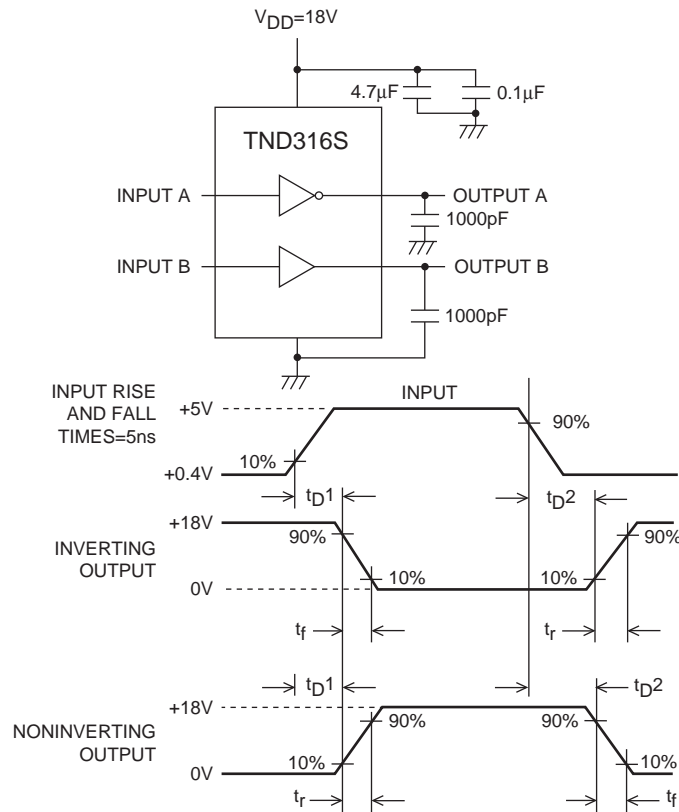
Electrical Characteristics (AC Characteristics) at Ta=25°C, V_{DD}=18V, V_{IN}=5V

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------|-----------------|------------------------|---------|-----|-----|------|
| | | | min | typ | max | |
| Turn-On Rise Time | t _r | C _L =1000pF | | 30 | 45 | 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

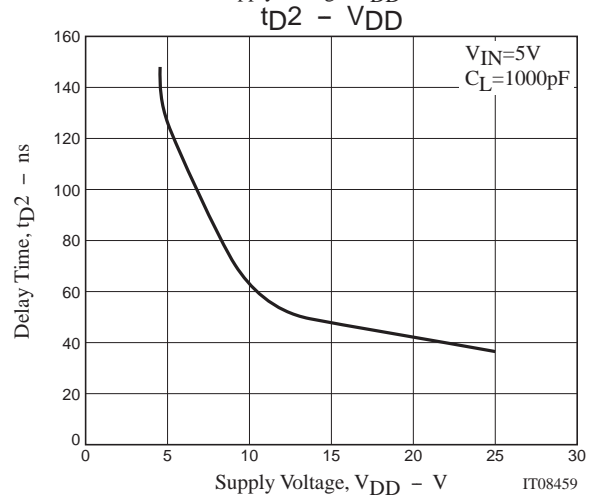
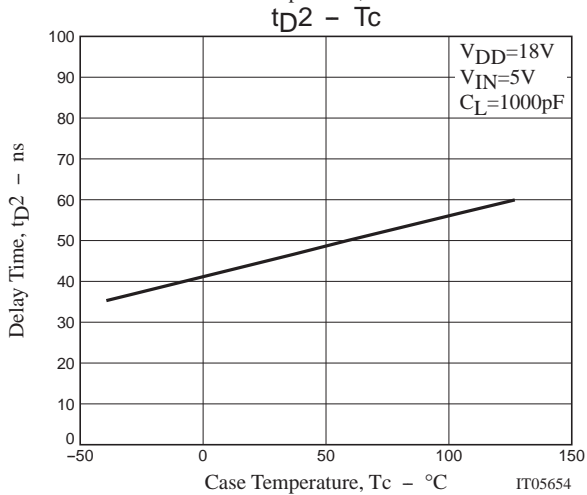
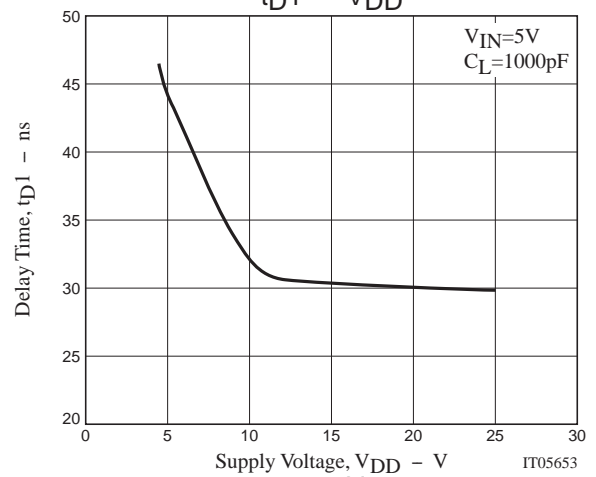
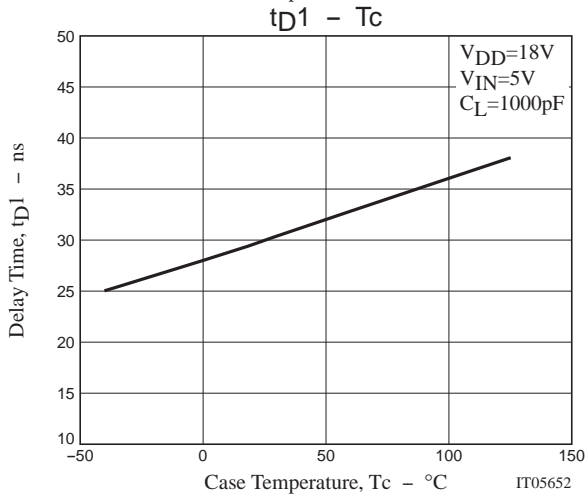
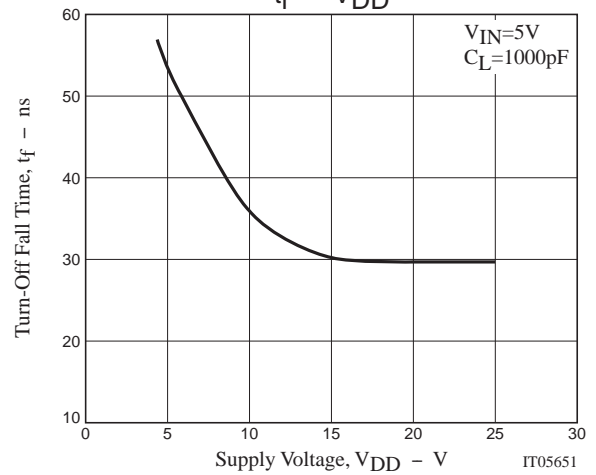
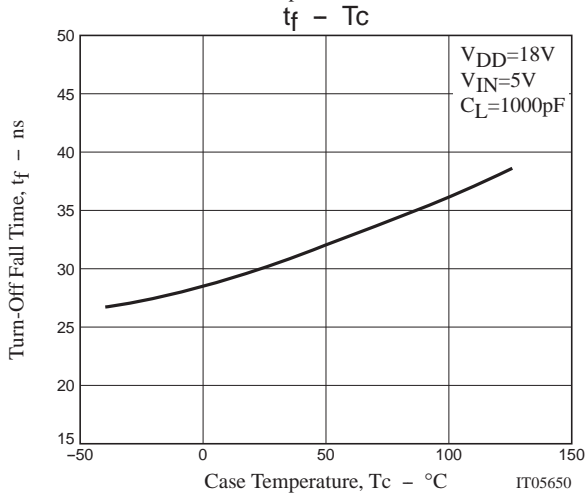
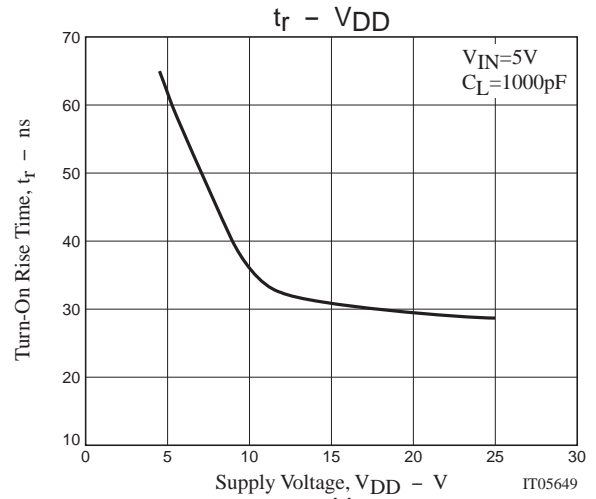
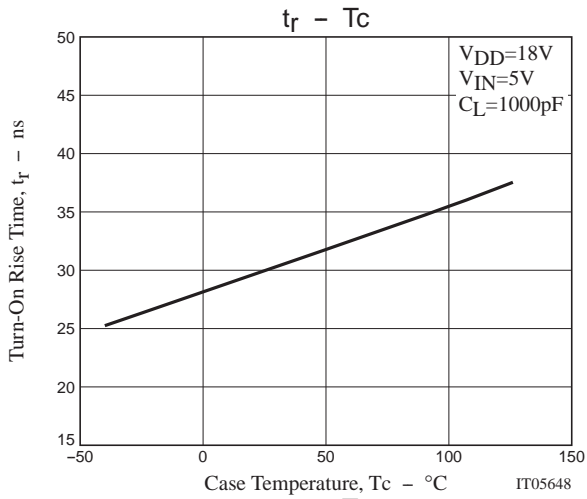
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|-------------------|--|----------------------|-----|-----|------|
| | | | min | typ | max | |
| Logic "1" Input Voltage | V _{IH} | | 2.6 | | | V |
| Logic "0" Input Voltage | V _{IL} | | | | 0.8 | V |
| Logic "1" Input Bias Current | I _{IN+} | V _{IN} =V _{DD} =25V | | 40 | 100 | μA |
| Logic "0" Input Bias Current | I _{IN-} | V _{IN} =0V or V _{DD} | -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 | | 1.0 | | 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" | | 8 | 12 | Ω |
| | | V _{DD} =18V, I _{load} =10mA, V _{OUT} ="L" | | 6 | 10 | Ω |

Switching Time Test Circuit

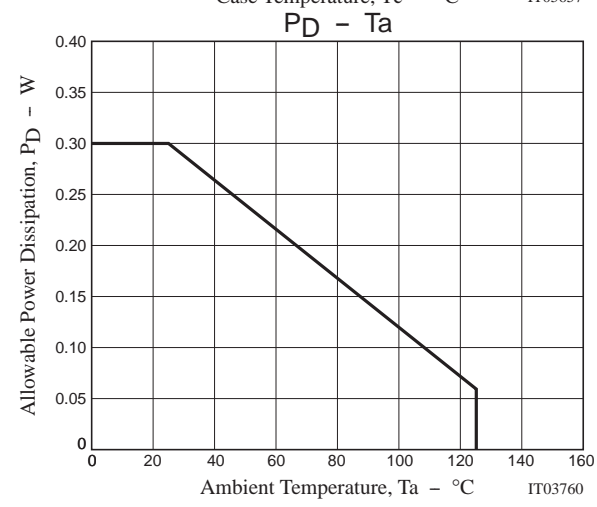
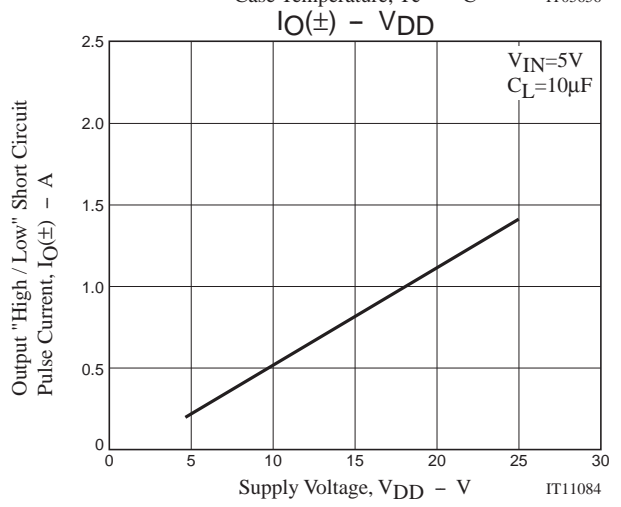
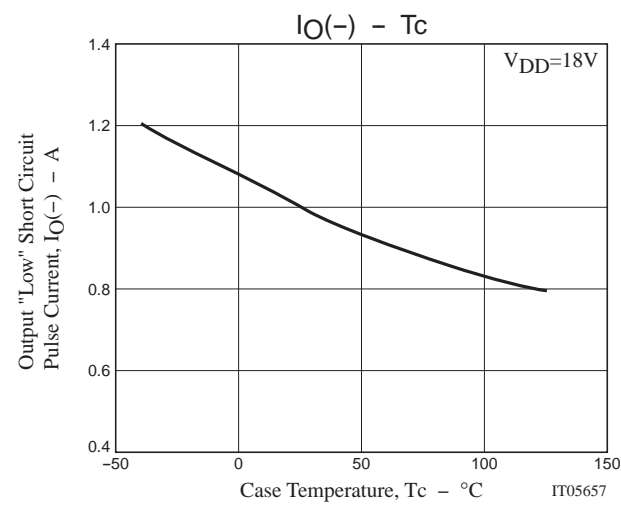
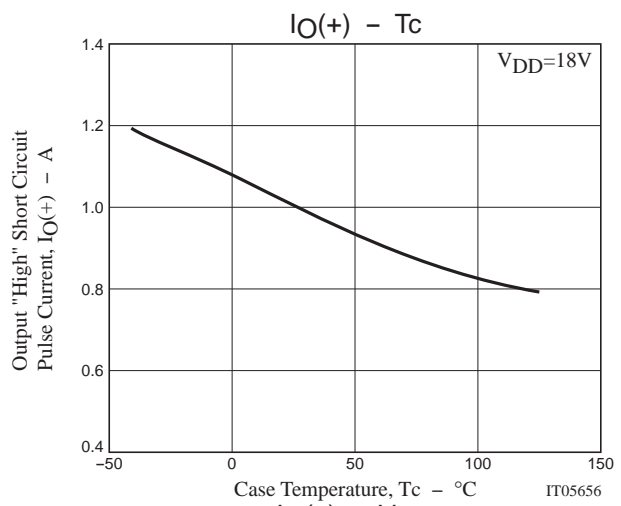


Ordering Information

| Devices | Package | Shipping | memo |
|---------------|---------|----------------|--------------------------|
| TND316S-TL-2H | SOIC8 | 2,500pcs./reel | Pb Free and Halogen Free |



TND316S



TND316S

Taping Specification

TND316S-TL-2H

1. Packing Format

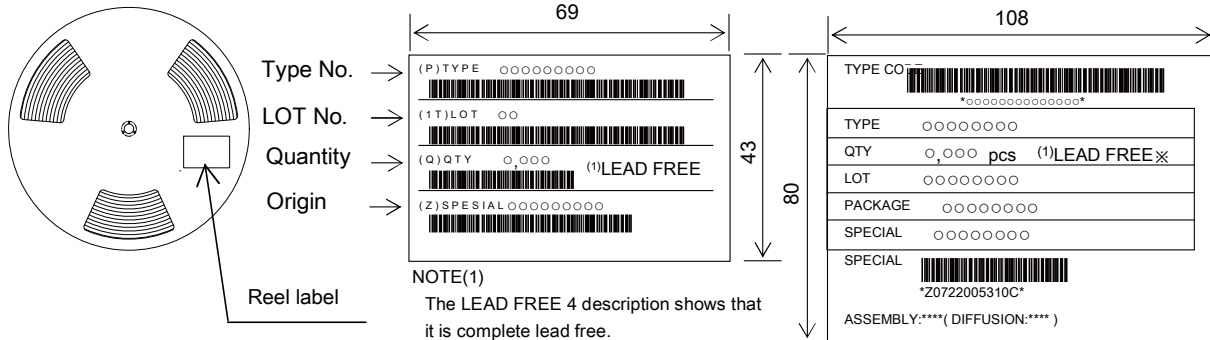
| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) | | | Packing format | |
|--------------|-------------------|---|-----------|-----------|---|--|
| | | Reel | Inner box | Outer box | Inner BOX W206-112 | Outer BOX W207-124 |
| SOIC8 | B202-101 | 2,500 | 12,500 | 25,000 |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

Packing method

Reel label, Inner box label (unit: mm)

Outer box label

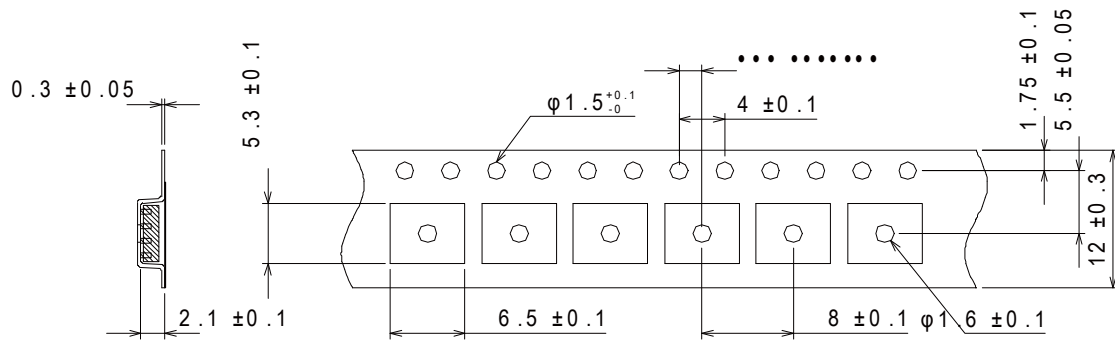
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.



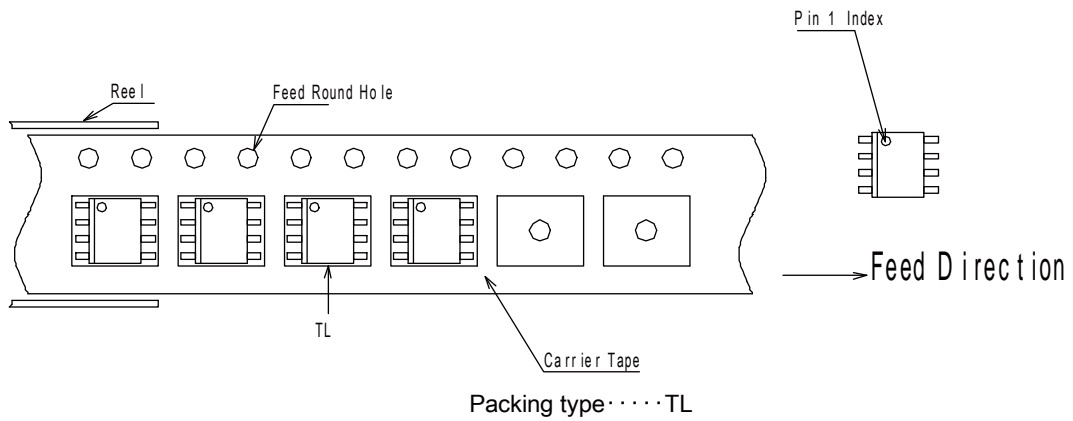
| Label | JEITA Phase |
|-------------|---------------|
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

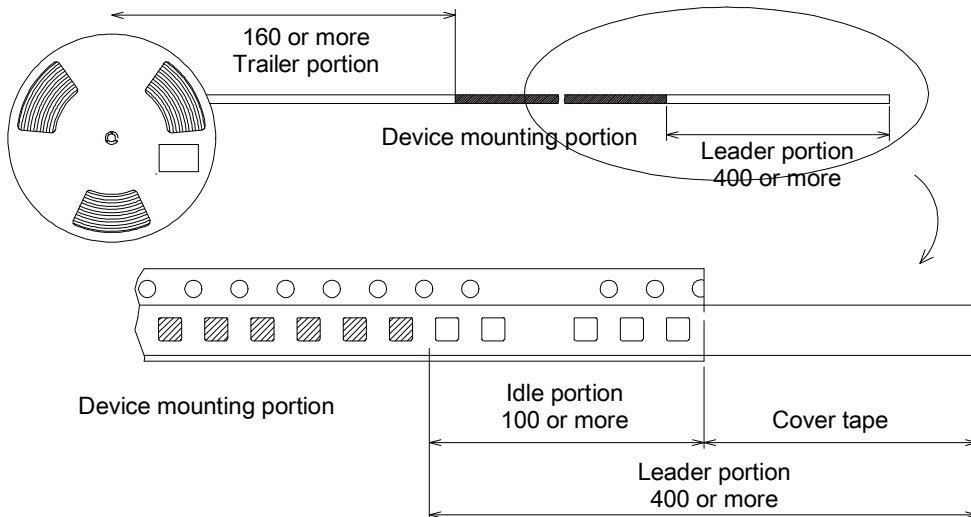
2-1. Carrier tape size (unit: mm)



2-2. Device placement direction



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

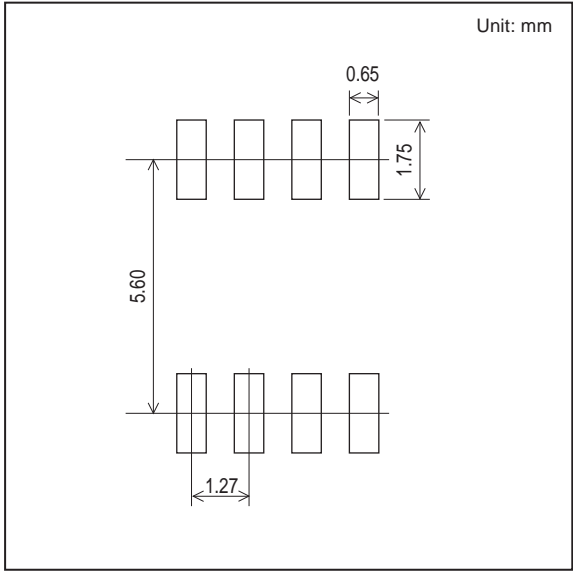
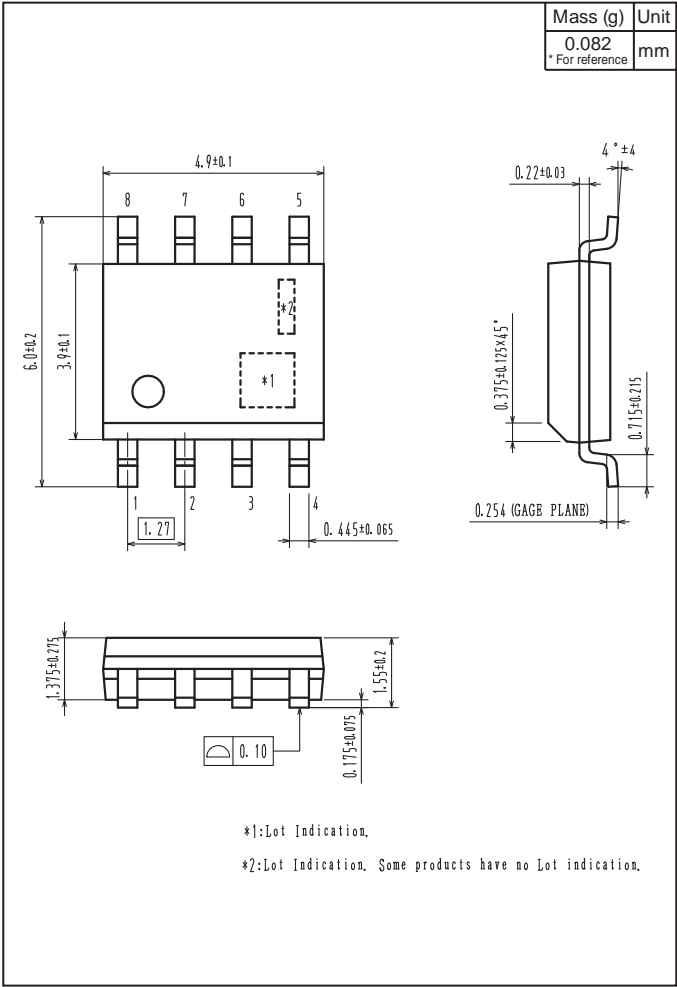


TND316S

Outline Drawing

TND316S-TL-2H

Land Pattern Example



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