Ordering number : ENA0520A

TND322VD

Excellent Power Device

Dual buffer driver for general purpose, Dual VEC8

ON Semiconductor®

http://onsemi.com

Features

- Dual buffer
- 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 Ta=25°C

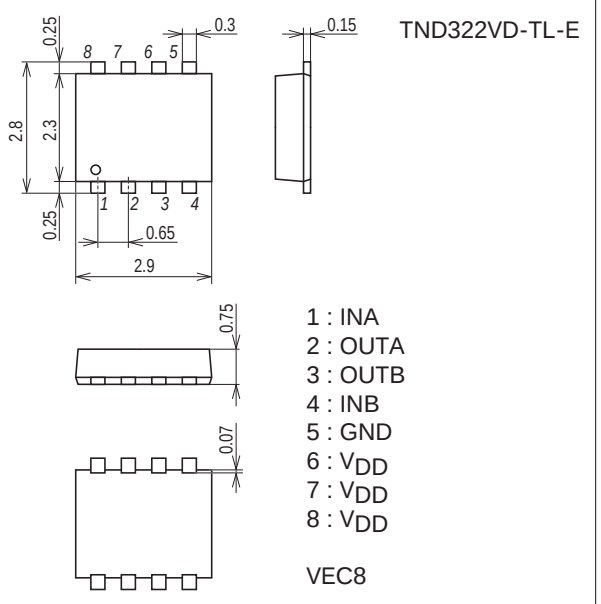
Parameter	Symbol	Conditions	Ratings	Unit
Supply Voltage	V_{DD}		0 to 25	V
Input Voltage	V_{IN}		GND-0.3 to V_{DD}+0.3	V
Allowable Power Dissipation	P_D max		0.2	W
Junction Temperature	Tj		-55 to +150	°C
Storage Temperature	Tstg		-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above t he Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

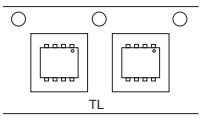
7012-006



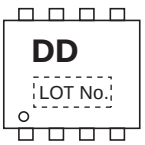
Product & Package Information

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

Packing Type : TL



Marking



Semiconductor Components Industries, LLC, 2013

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

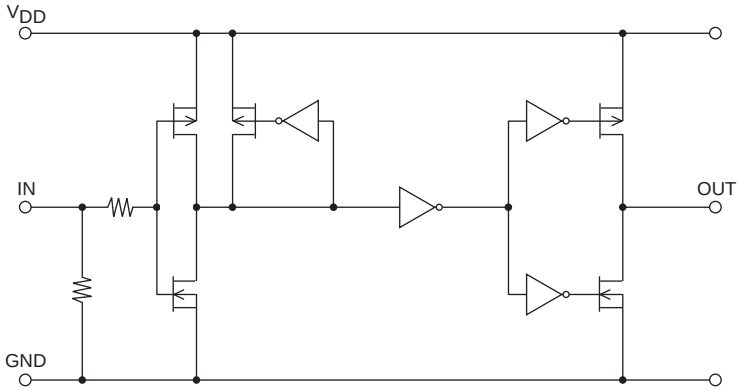
Electrical Characteristics (AC Characteristics) at Ta=25°C, V_{DD}=18V, V_{IN}=5V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-On Rise Time	t_r	CL=1000pF		35	50	ns
Turn-Off Fall Time	t_f	CL=1000pF		30	45	ns
Delay Time	t_D1	CL=1000pF		30	45	ns
	t_D2	CL=1000pF		45	60	ns

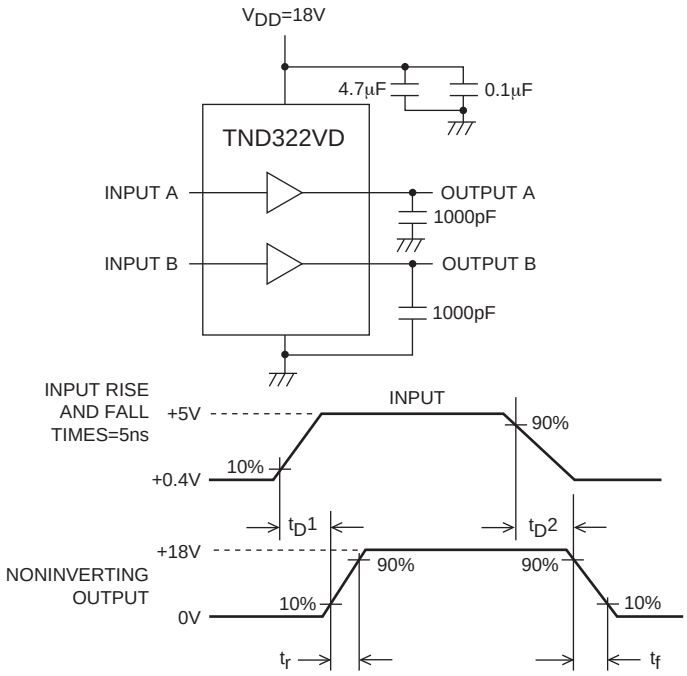
Electrical Characteristics (DC Characteristics) at Ta=25°C, V_{DD}=4.5 to 25V

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	Isupp	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	ROUT	V_{DD}=18V, Iload=10mA, V_{OUT}=“H”		11	16.5	Ω
		V_{DD}=18V, Iload=10mA, V_{OUT}=“L”		6	10	Ω

Block Diagram



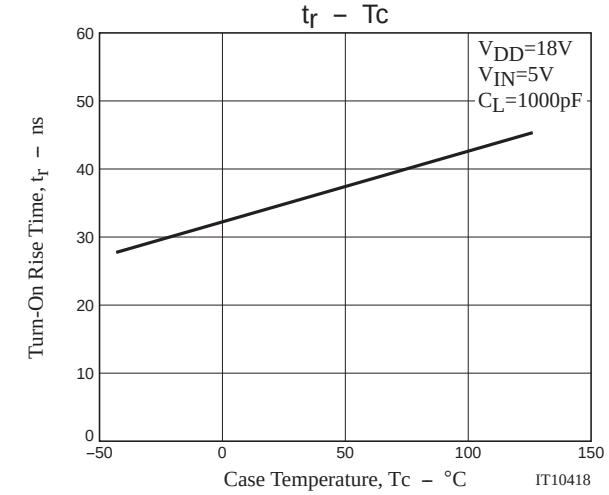
Switching Time Test Circuit



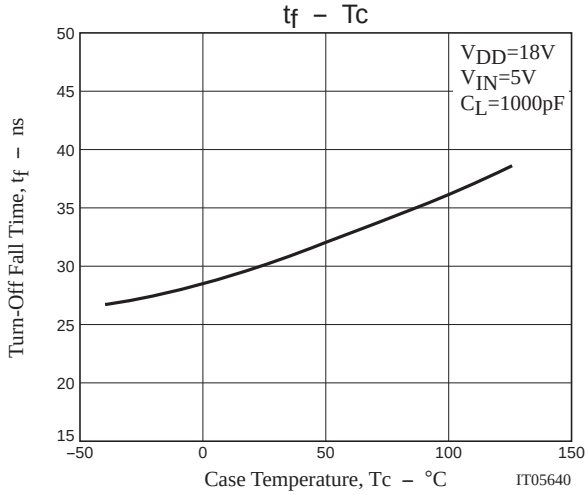
Ordering Information

Device	Package	Shipping	memo
TND322VD-TL-E	VEC8	3,000pcs./reel	Pb Free

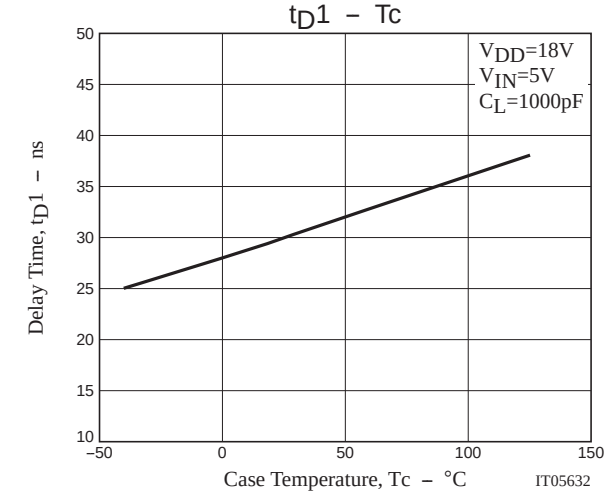
t_r – Tc



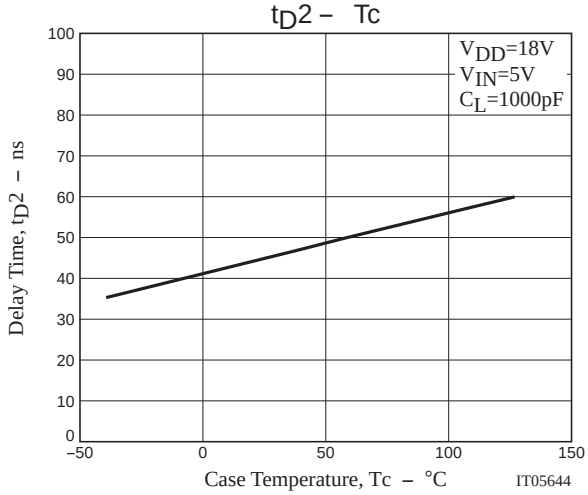
t_f – Tc



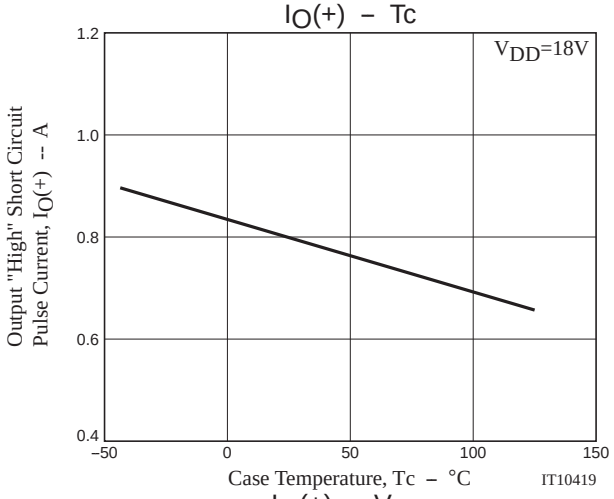
t_{D1} – Tc



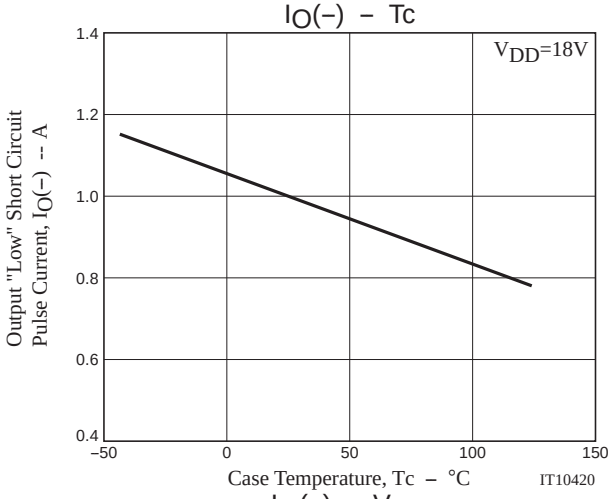
t_{D2} – Tc



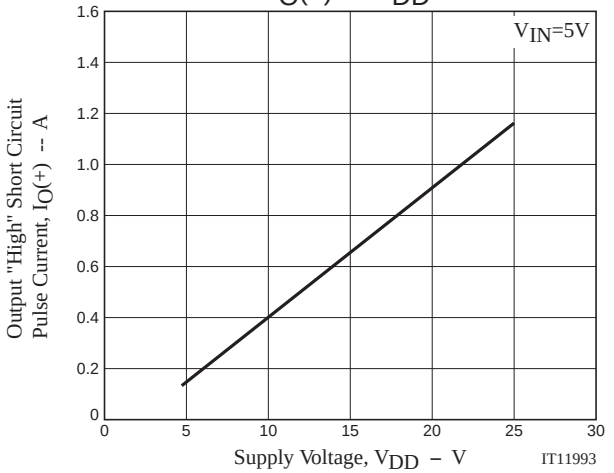
$I_{O(+)}$ – Tc



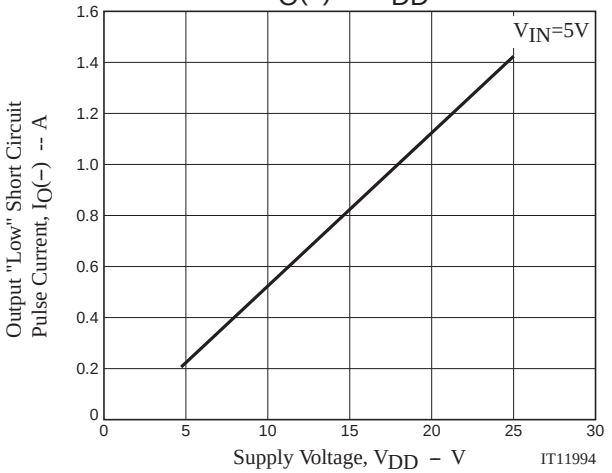
$I_{O(-)}$ – Tc

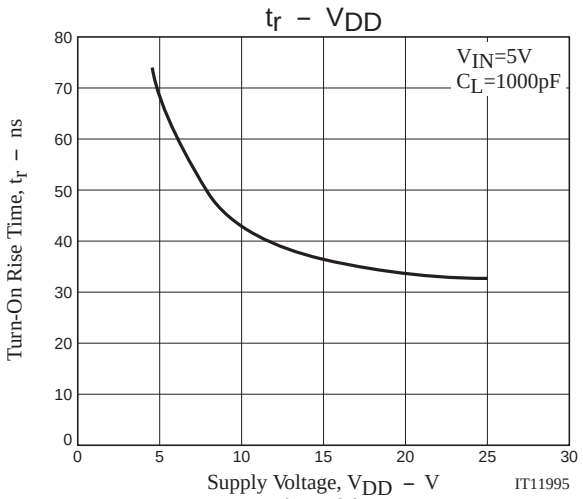


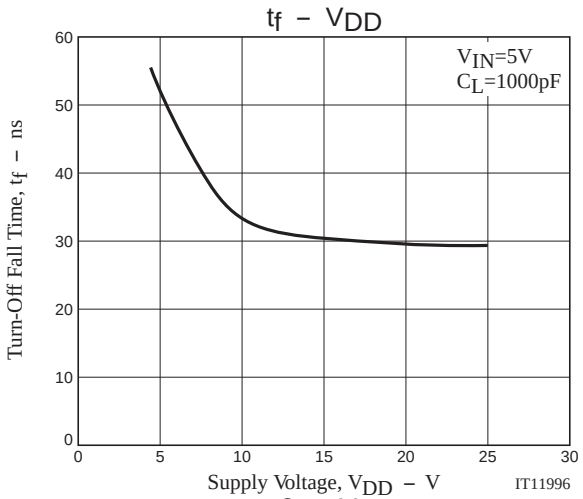
$I_{O(+)}$ – V_{DD}

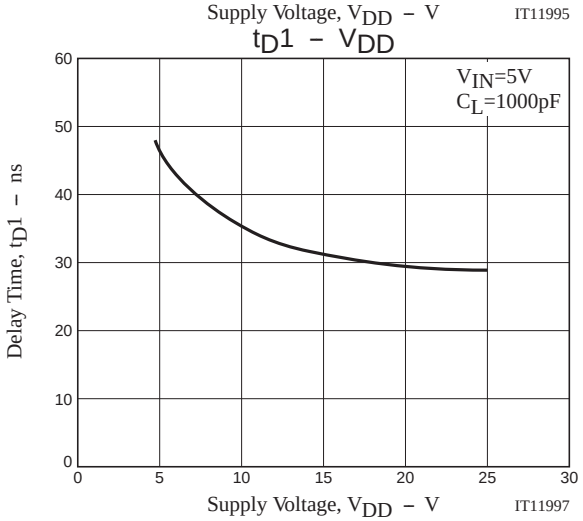


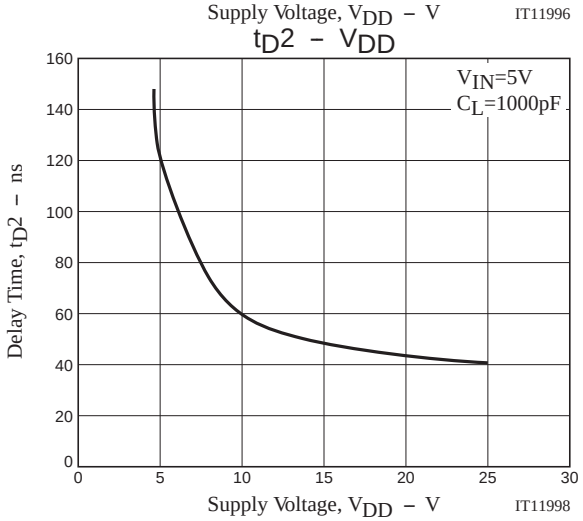
$I_{O(-)}$ – V_{DD}

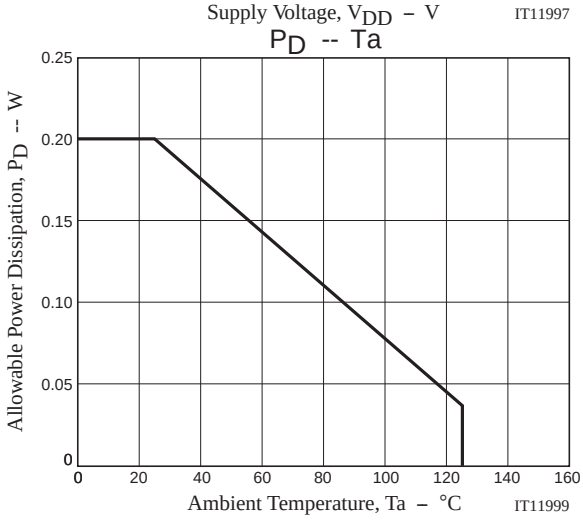



t_r – V_{DD}
V_{IN}=5V
C_L=1000pF
Turn-On Rise Time, t_r – ns
Supply Voltage, V_{DD} – V
IT11995


t_f – V_{DD}
V_{IN}=5V
C_L=1000pF
Turn-Off Fall Time, t_f – ns
Supply Voltage, V_{DD} – V
IT11996


t_{D1} – V_{DD}
V_{IN}=5V
C_L=1000pF
Delay Time, t_{D1} – ns
Supply Voltage, V_{DD} – V
IT11997


t_{D2} – V_{DD}
V_{IN}=5V
C_L=1000pF
Delay Time, t_{D2} – ns
Supply Voltage, V_{DD} – V
IT11998


P_D -- Ta
Allowable Power Dissipation, P_D -- W
Ambient Temperature, Ta – °C
IT11999

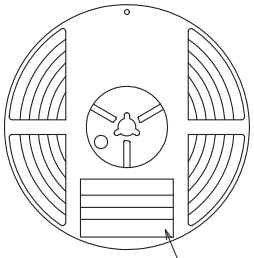
Taping Specification

TND322VD-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

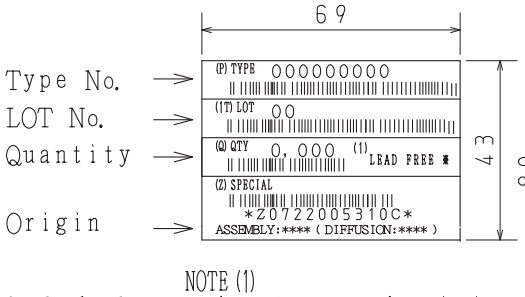
Packing method



Reel label

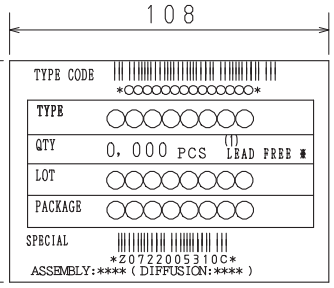
Reel label, Inner box label

(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.



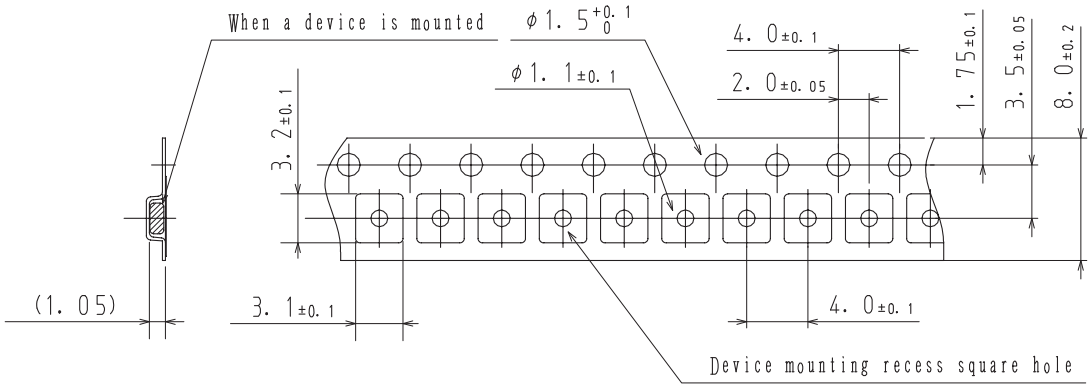
NOTE (1)

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

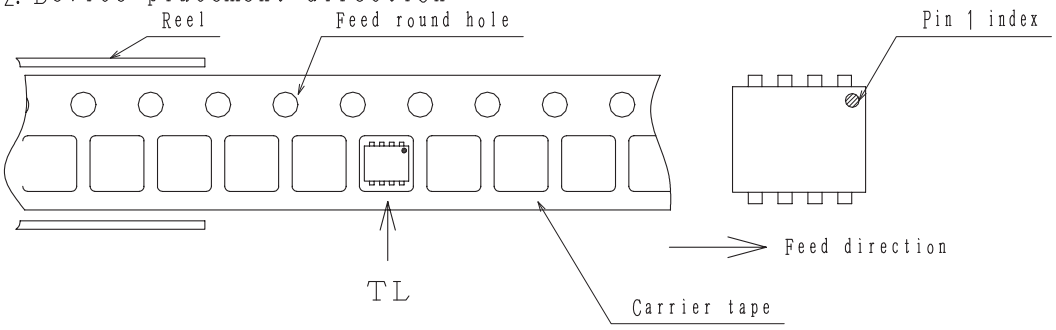
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

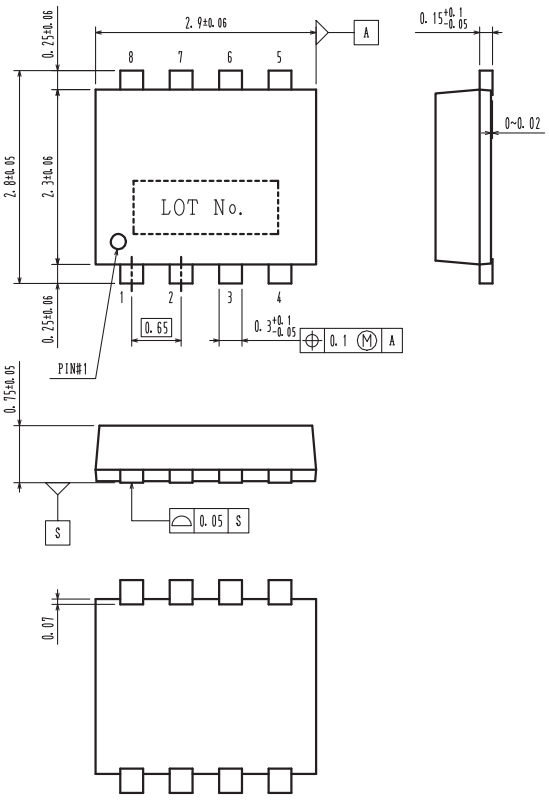


Those with oen electrode terminal on the feed hole side·····TL

Outline Drawing

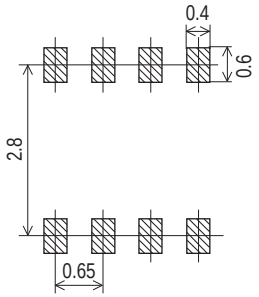
TND322VD-TL-E

Mass (g)	Unit
0.015 * For reference	mm



Land Pattern Example

Unit: mm



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