

# TND321VD

## Excellent Power Device Dual inverter driver for general purpose



ON Semiconductor®

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### 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

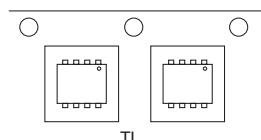
### Specifications

#### Absolute Maximum Ratings at $T_a=25^\circ C$

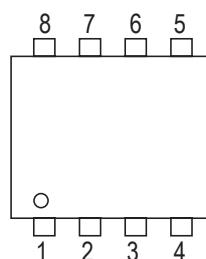
Parameter	Symbol	Conditions	Ratings	Unit
Supply Voltage	$V_{DD}$		0 to 25	V
Input Voltage	$V_{IN}$		$GND-0.3$ to $V_{DD}+0.3$	V
Allowable Power Dissipation	$P_D$ max		0.2	W
Junction Temperature	$T_j$		-55 to +150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### Packing Type : TL



### Pin Assignment

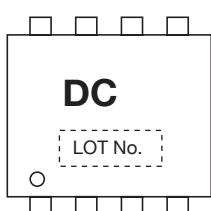


TND321VD-TL-E  
TND321VD-TL-H

- 1 : INA
- 2 : OUTA
- 3 : OUTB
- 4 : INB
- 5 : GND
- 6 : VDD
- 7 : VDD
- 8 : VDD

SOT-28FL / VEC8

### Marking



### ORDERING INFORMATION

See detailed ordering and shipping information on page 7 of this data sheet.

## 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	T <sub>OPR</sub>		-40 to +125	°C

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

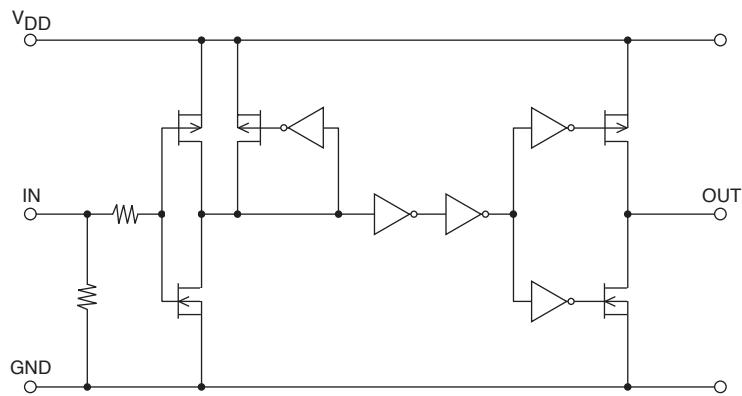
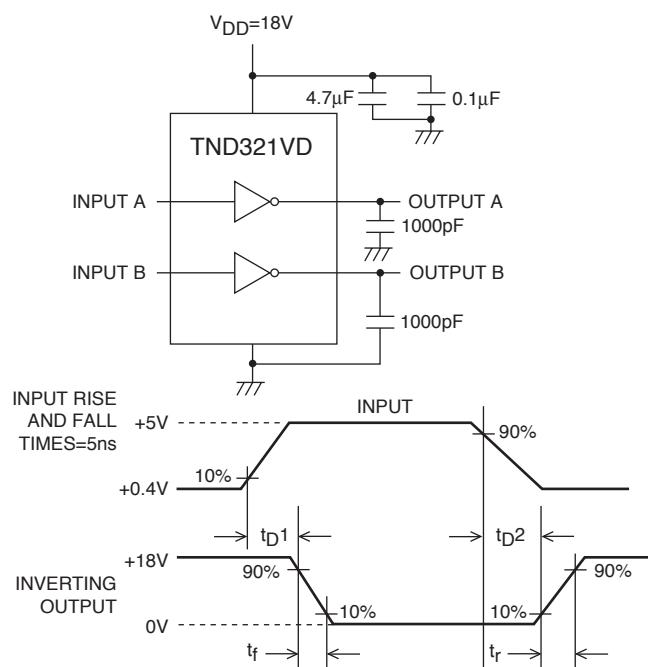
## Electrical Characteristics (AC Characteristics) at Ta=25°C, V<sub>DD</sub>=18V, V<sub>IN</sub>=5V

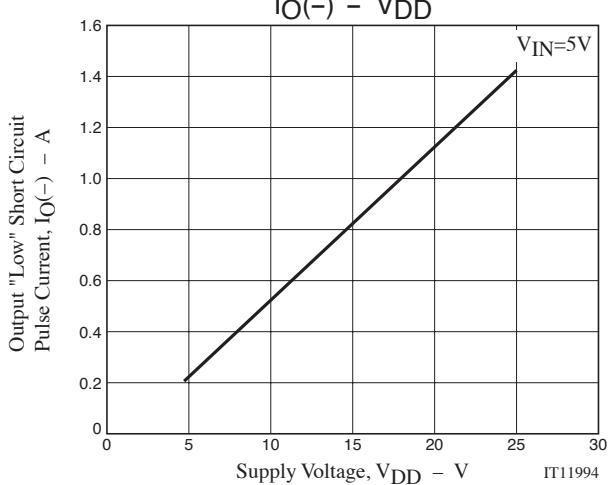
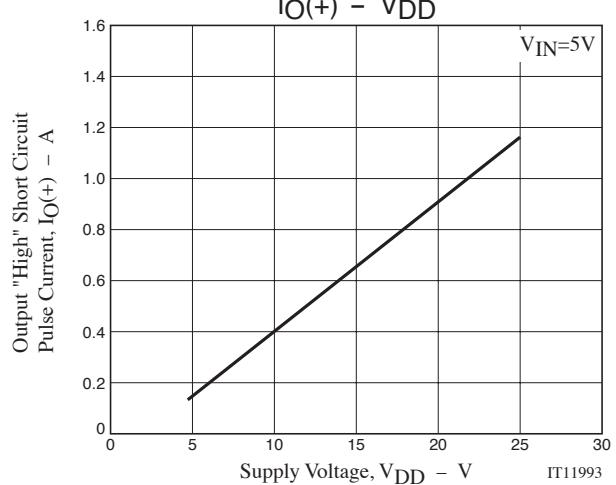
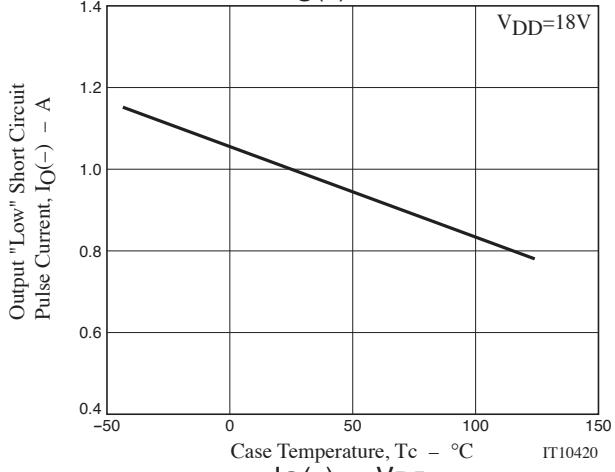
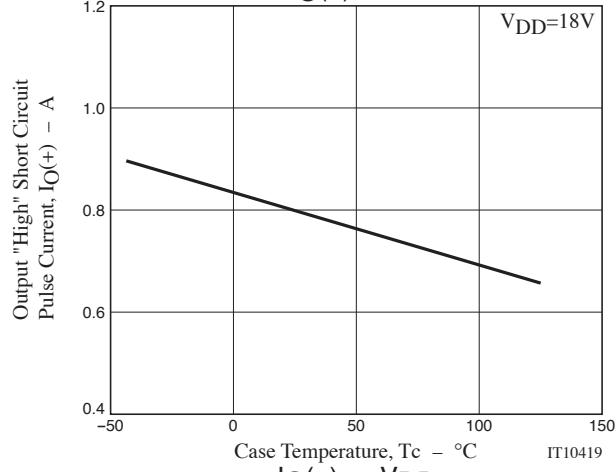
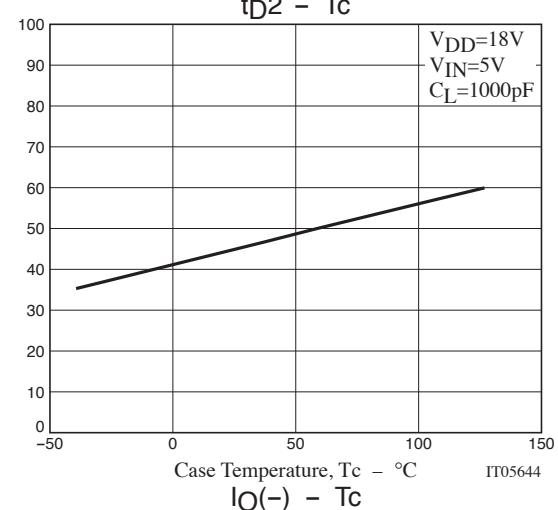
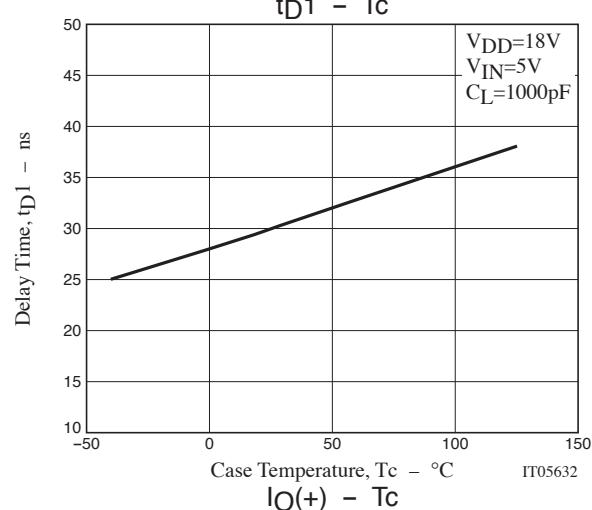
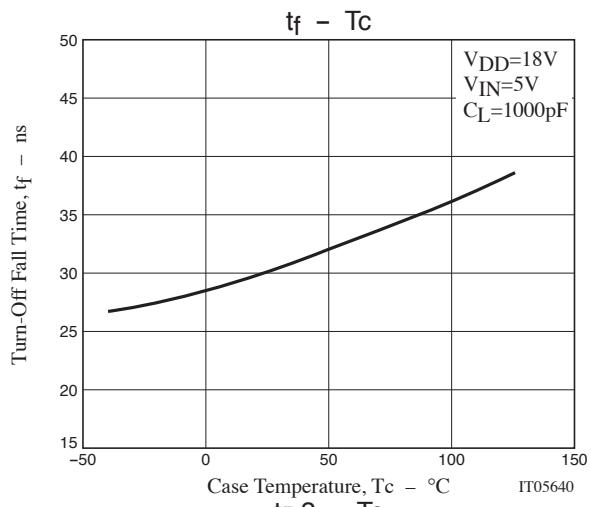
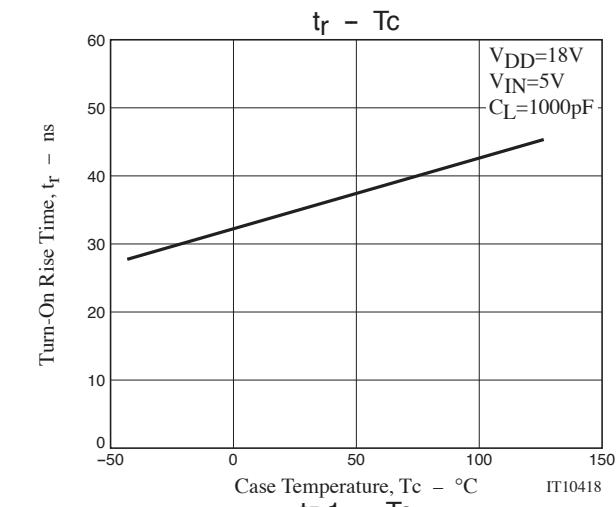
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-On Rise Time	t <sub>r</sub>	C <sub>L</sub> =1000pF		35	50	ns
Turn-Off Fall Time	t <sub>f</sub>	C <sub>L</sub> =1000pF		30	45	ns
Delay Time	t <sub>D1</sub>	C <sub>L</sub> =1000pF		30	45	ns
	t <sub>D2</sub>	C <sub>L</sub> =1000pF		45	60	ns

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

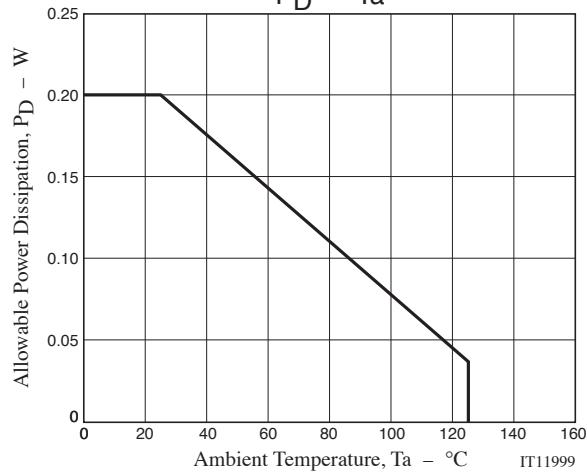
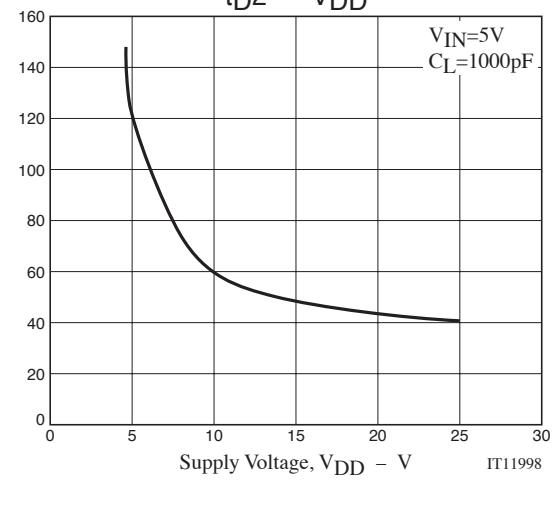
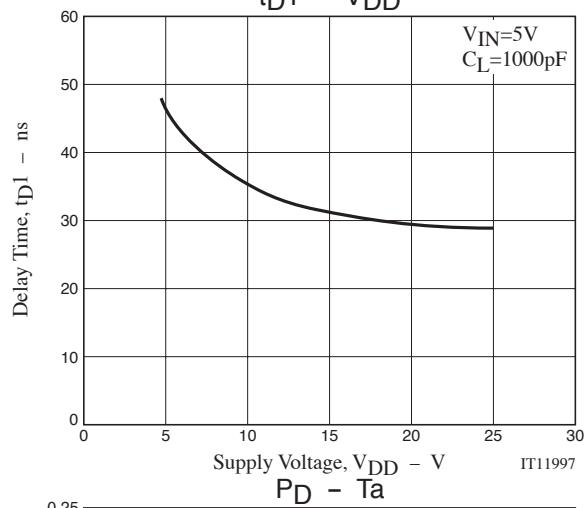
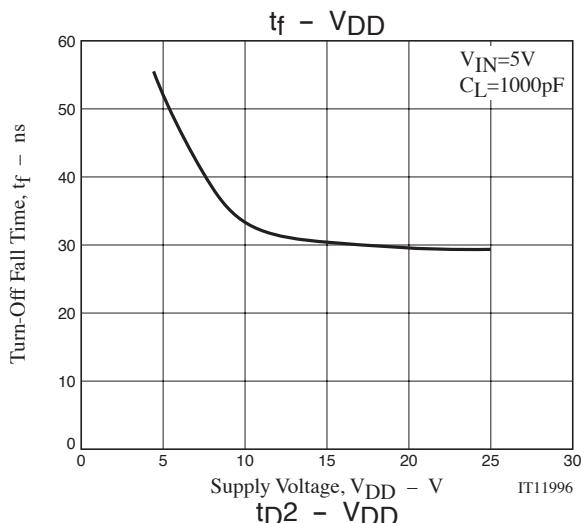
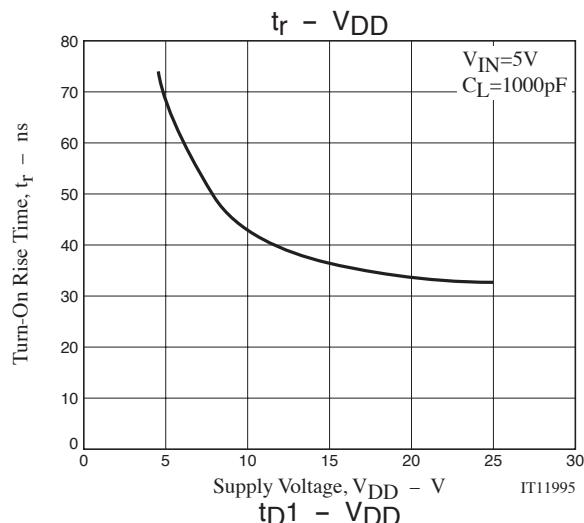
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Logic "1" Input Voltage	V <sub>IH</sub>		2.6			V
Logic "0" Input Voltage	V <sub>IL</sub>				0.8	V
Logic "1" Input Bias Current	I <sub>IN+</sub>	V <sub>IN</sub> =V <sub>DD</sub> =25V		40	100	μA
Logic "0" Input Bias Current	I <sub>IN-</sub>	V <sub>IN</sub> =0V	-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 Pulsed Current	I <sub>O+</sub>	V <sub>DD</sub> =18V, PW≤10μs, V <sub>OUT</sub> =0V		0.8		A
Output Low Short Circuit Pulsed 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"		11	16.5	Ω
		V <sub>DD</sub> =18V, I <sub>load</sub> =10mA, V <sub>OUT</sub> ="L"		6	10	Ω

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

**Block Diagram****Switching Time Test Circuit**



# TND321VD



## Package Dimensions

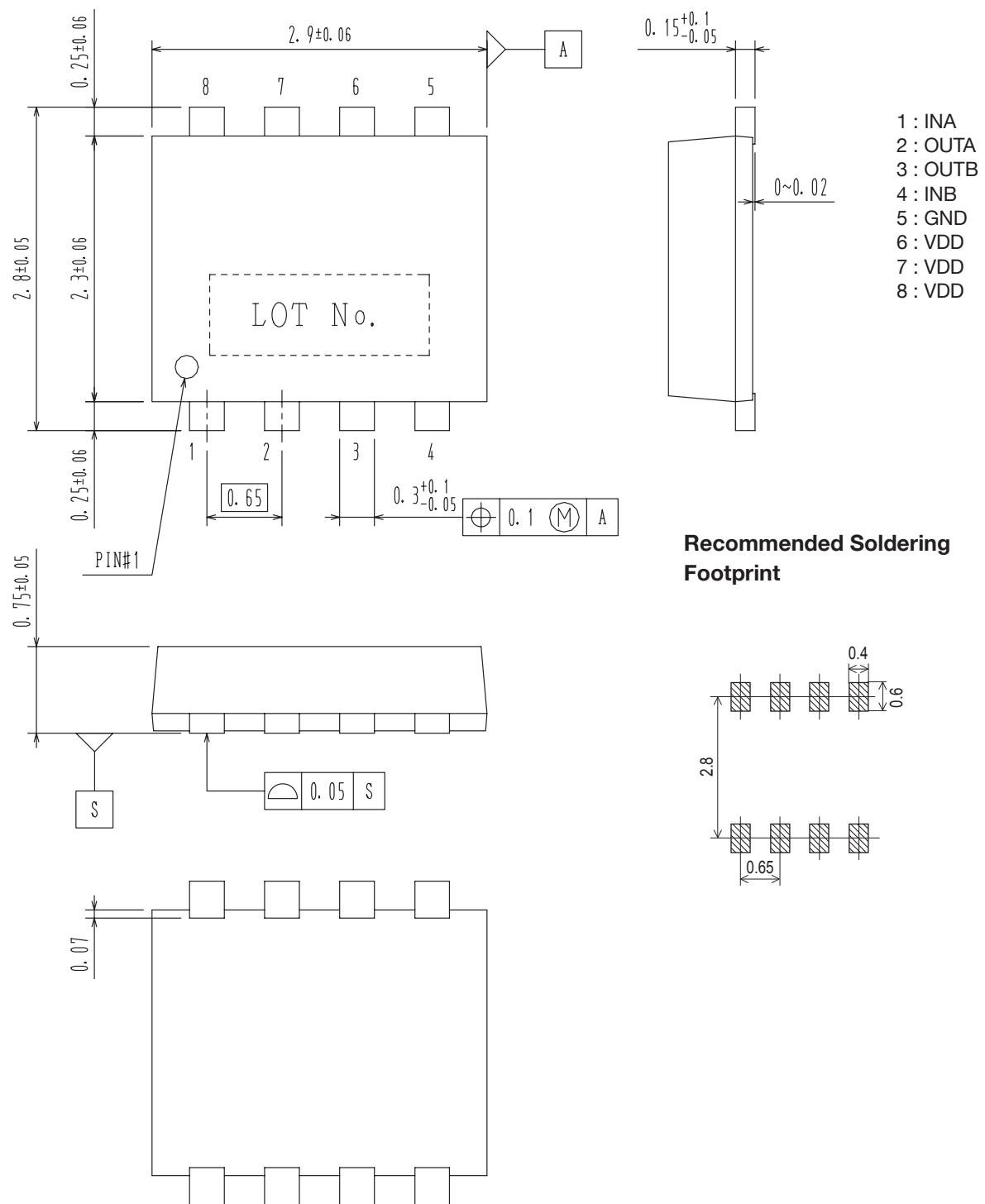
unit : mm

TND321VD-TL-E, TND321VD-TL-H

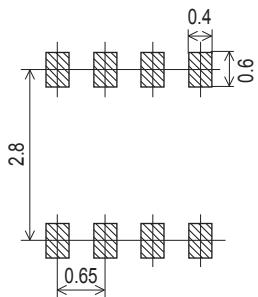
## SOT-28FL / VEC8

CASE 318AH

ISSUE 0



## Recommended Soldering Footprint



**ORDERING INFORMATION**

Device	Package	Shipping	memo
TND321VD-TL-E	SOT-28FL / VEC8	3,000pcs. / Tape and Reel	Pb-Free
TND321VD-TL-H	SOT-28FL / VEC8	3,000pcs. / Tape and Reel	Pb-Free and Halogen Free

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