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ON Semiconductor DATA SHEET

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 : $I_{O+}/I_{O-}=0.8A/1A$.
- 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	$^{\circ}C$

Recommended Operating Conditions at $T_a=25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Operating Supply Voltage	V_{DD}		4.5 to 25	V
Operating Temperature	T_{opr}		-40 to +125	$^{\circ}C$

Marking : DC

TND321VD

Electrical Characteristics (AC Characteristics) at Ta=25°C, VDD=18V, VIN=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

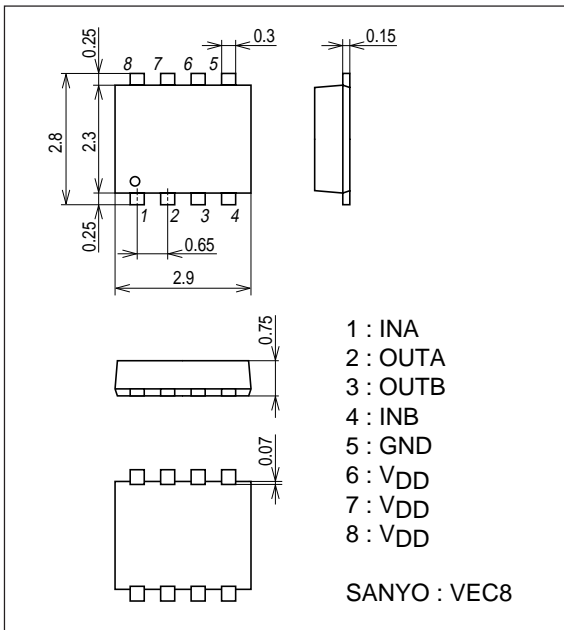
Electrical Characteristics (DC Characteristics) at Ta=25°C, VDD=4.5 to 25V

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
VDD 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 Pulse Current	I_{O+}	$V_{DD}=18V, PW \leq 10\mu s, V_{OUT}=0V$		0.8		A
Output Low Short Circuit Pulse Current	I_{O-}	$V_{DD}=18V, PW \leq 10\mu s, V_{OUT}=18V$		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

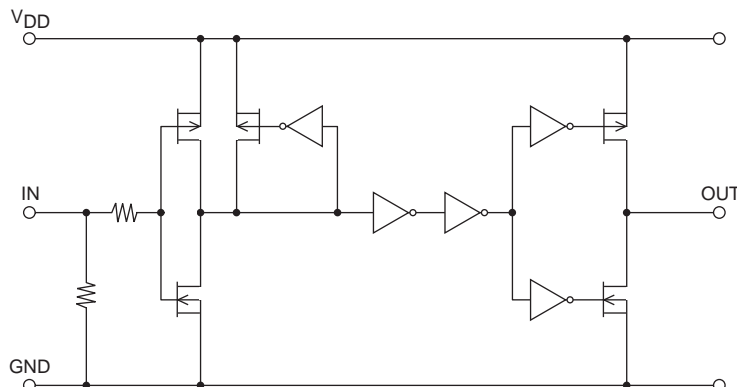
Package Dimensions

unit : mm (typ)

7012-006

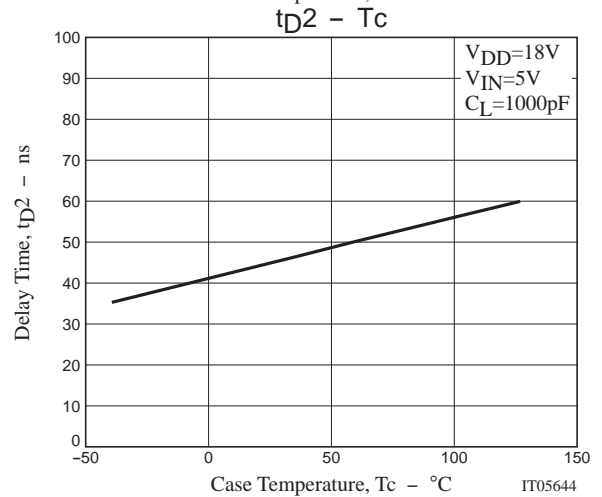
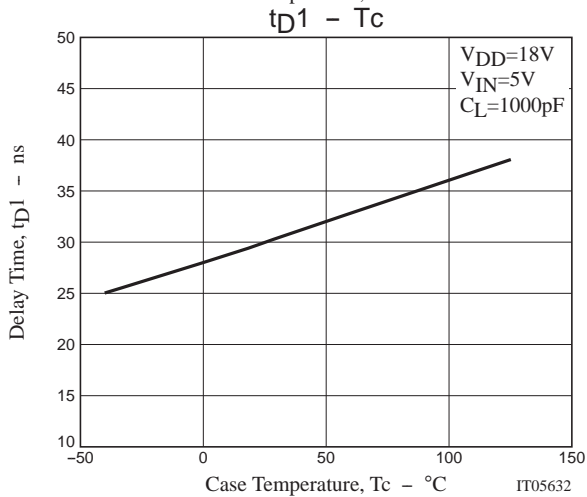
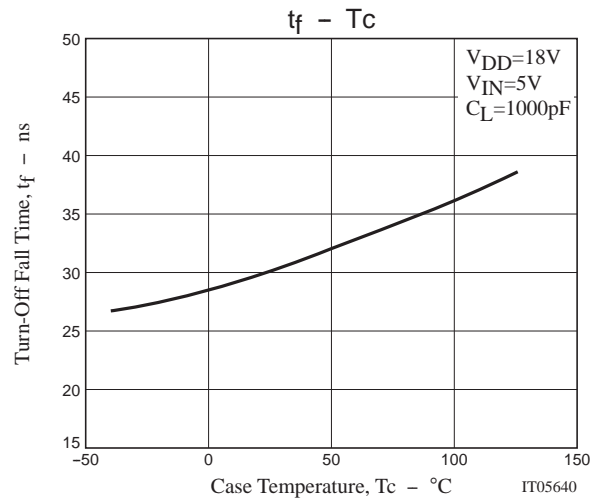
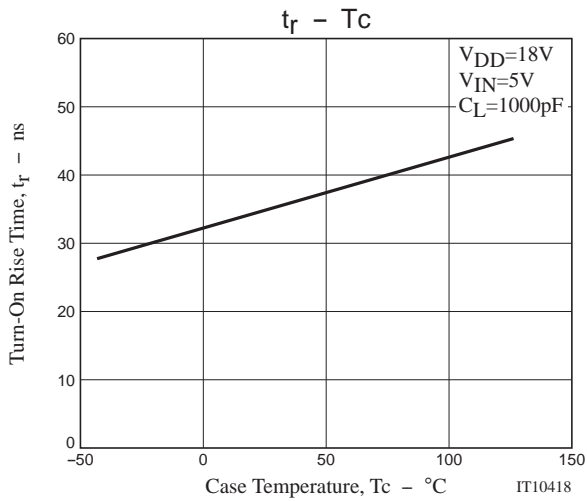
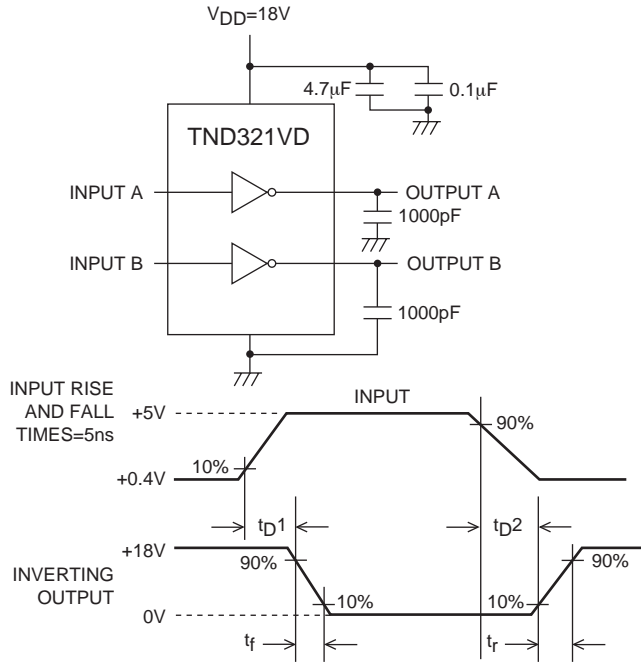


Block Diagram

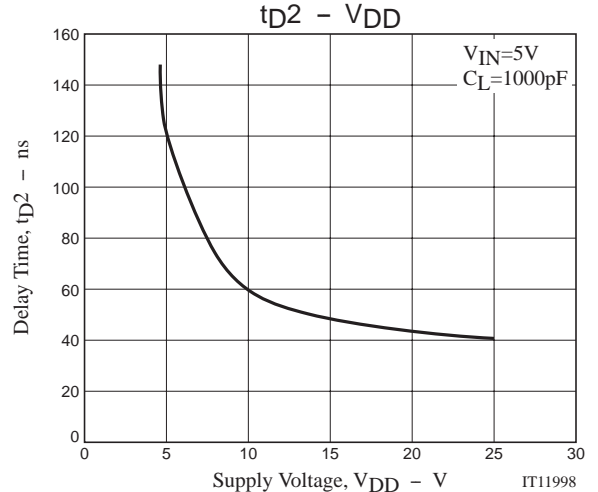
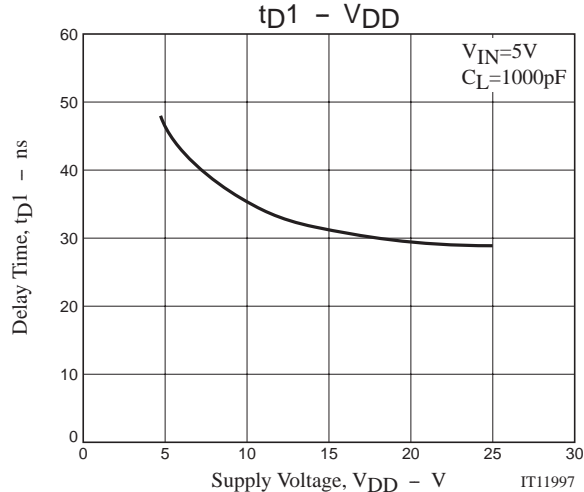
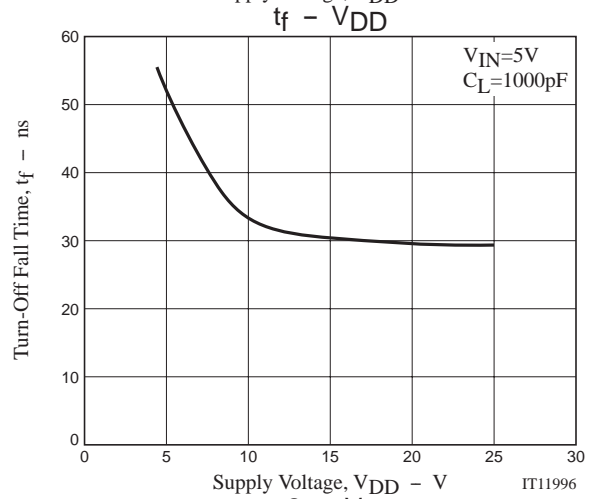
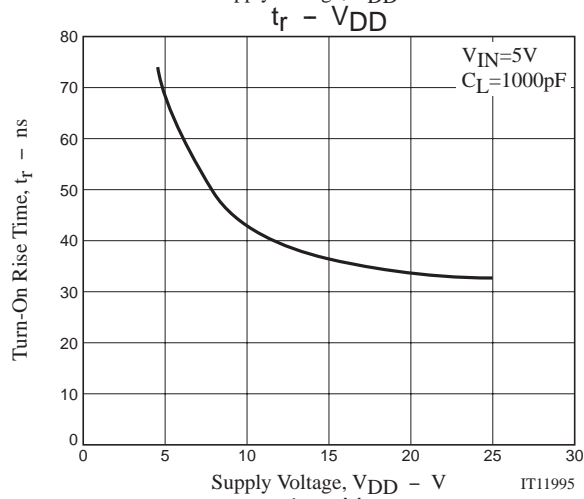
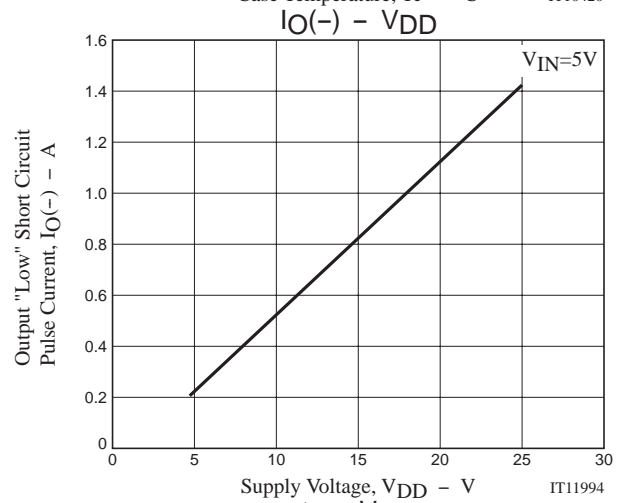
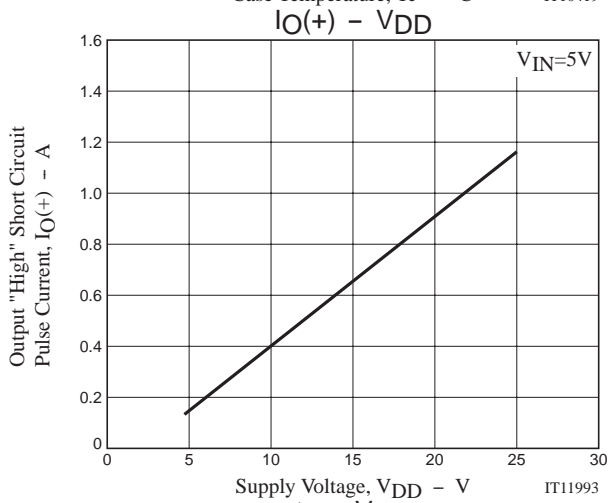
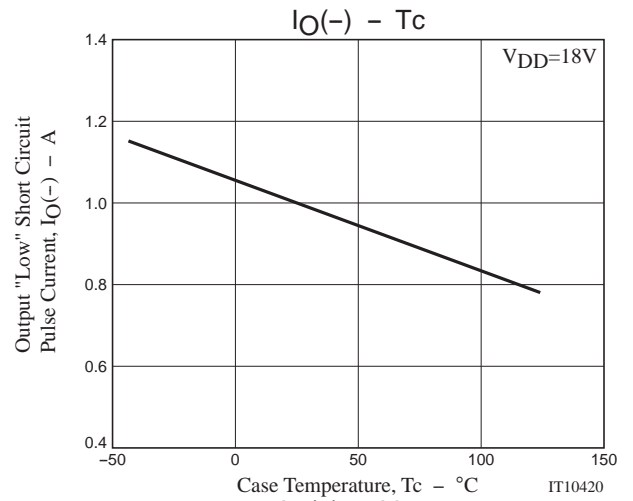
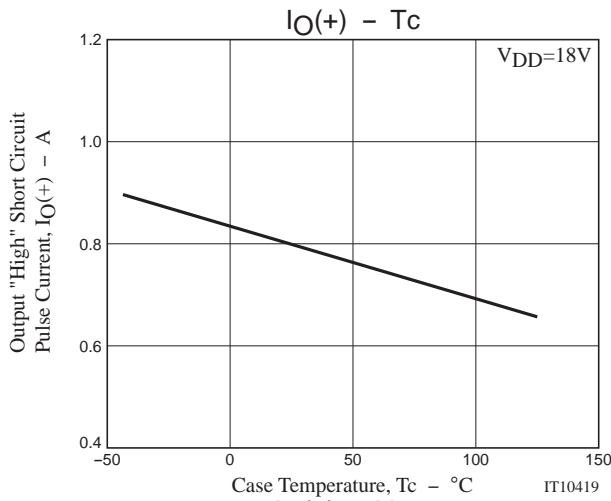


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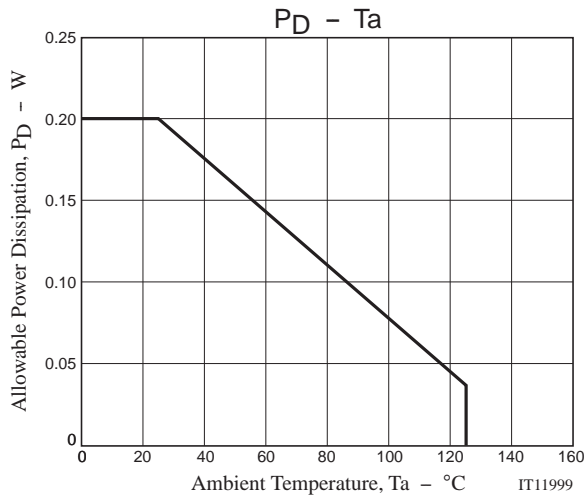
Switching Time Test Circuit



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