Ordering number : ENA0190

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DATA SHEET

ExPD (Excellent Power Device)

TND321VD — 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 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

Recommended 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

Marking : DC

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		35	50	ns
Turn-Off Fall Time	t_f	C_L=1000pF		30	45	ns
Delay Time	$t_{D}1$	C_L=1000pF		30	45	ns
	$t_{D}2$	C_L=1000pF		45	60	ns

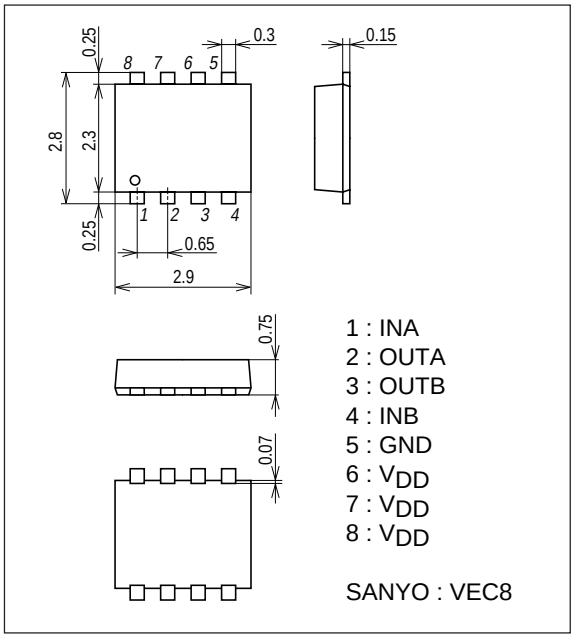
Electrical Characteristics (DC Characteristics) at Ta=25°C, V_{DD}=4.5 to 25V

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	-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 Pulse Current	I_O+	V_{DD}=18V, PW≤10μs, V_{OUT}=0V		0.8		A
Output Low Short Circuit Pulse 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

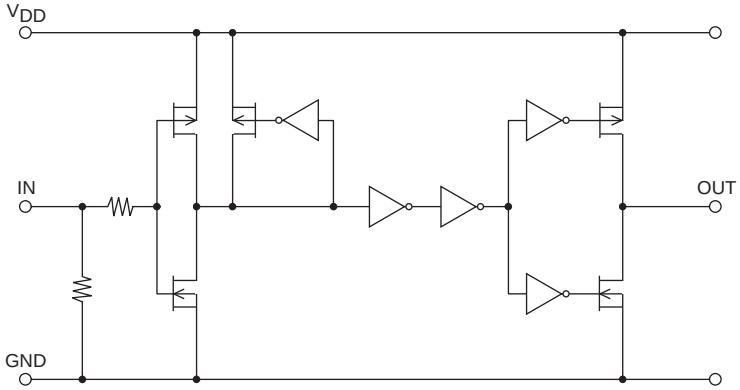
Package Dimensions

unit : mm (typ)

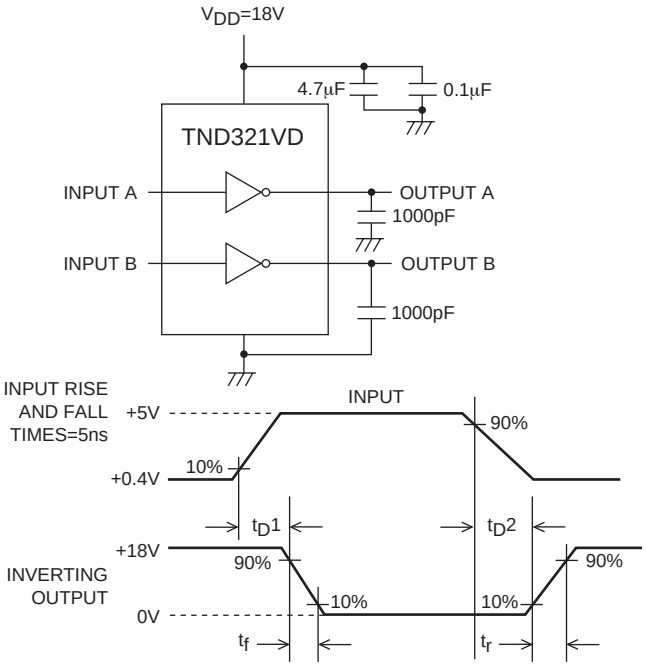
7012-006

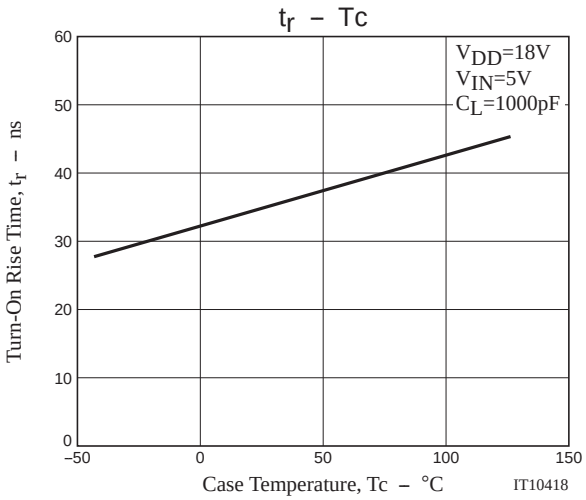


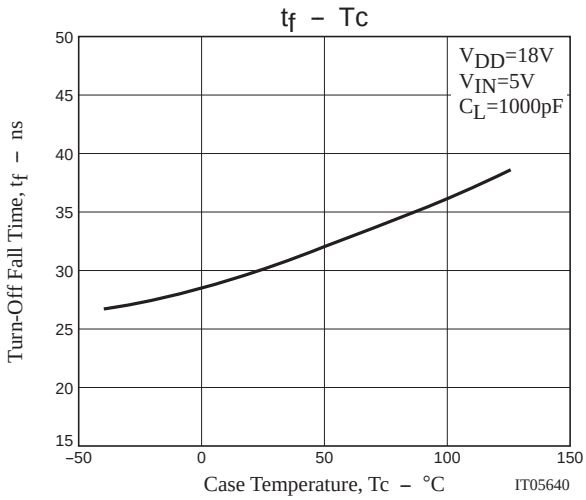
Block Diagram

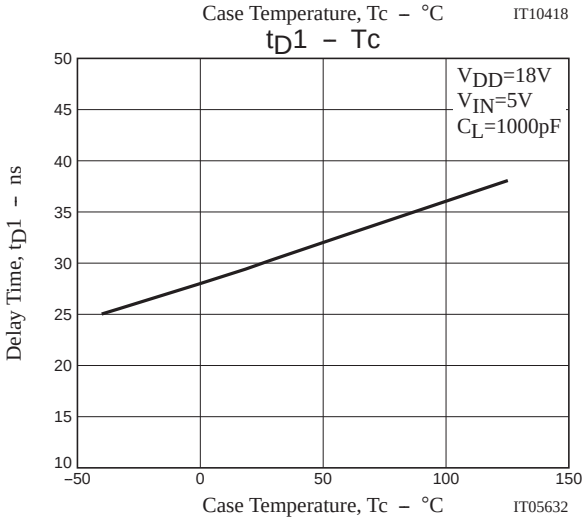


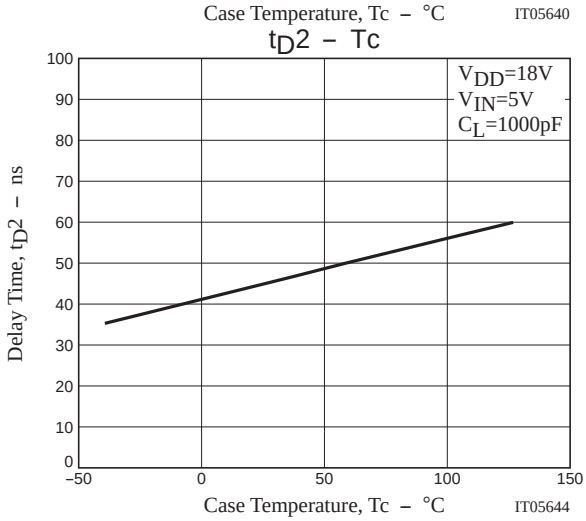
Switching Time Test Circuit



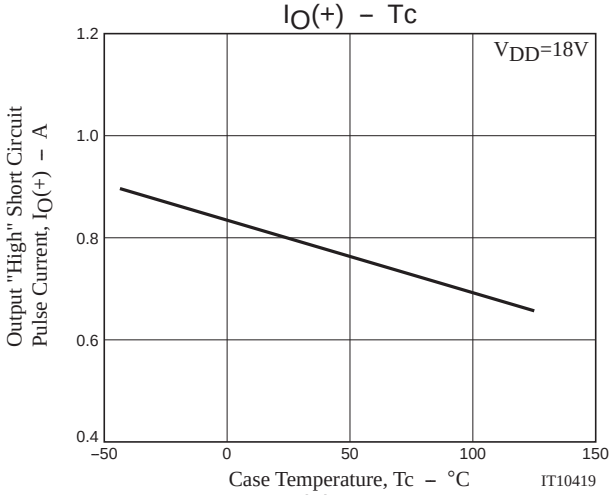




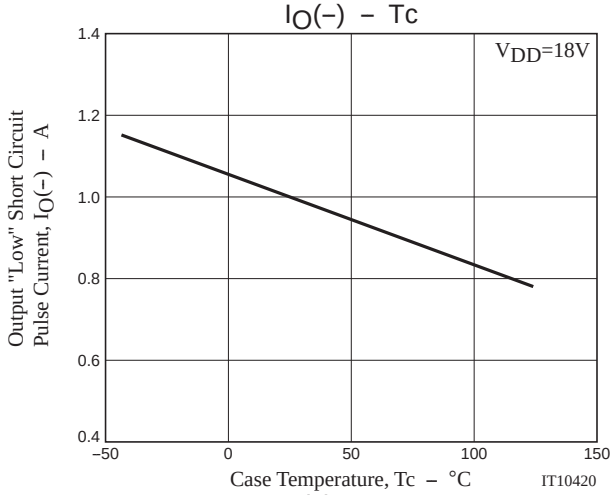




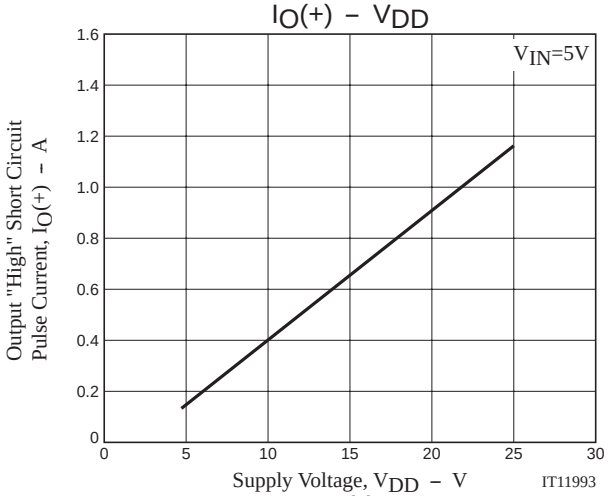
$I_{O(+)}$ – Tc



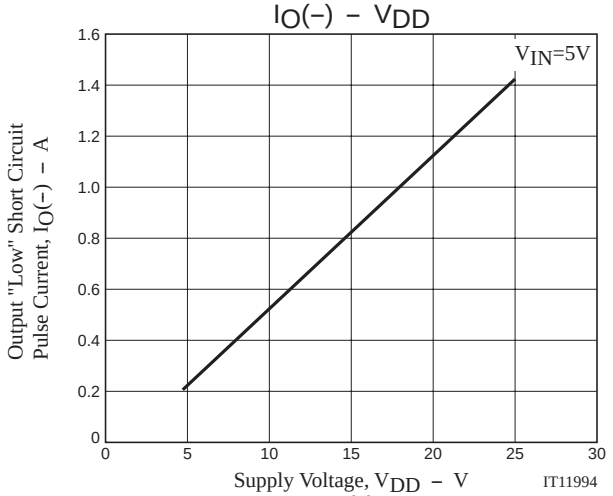
$I_{O(-)}$ – Tc



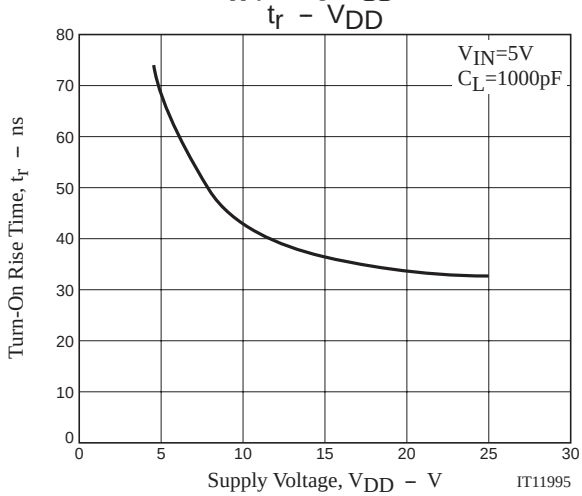
$I_{O(+)}$ – V_{DD}



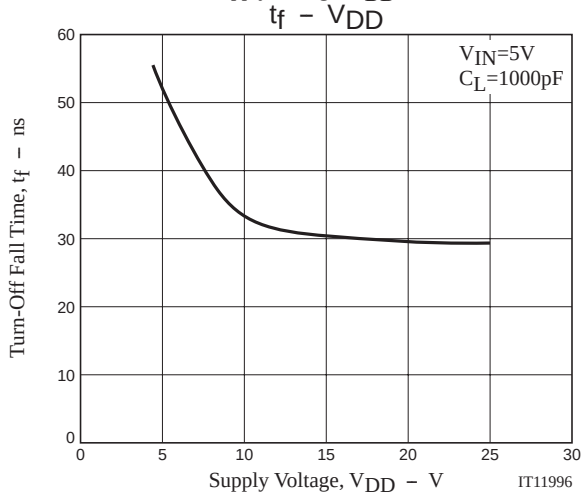
$I_{O(-)}$ – V_{DD}



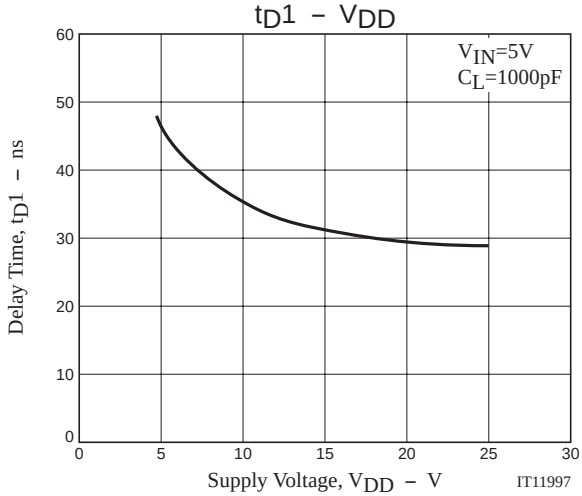
t_r – V_{DD}



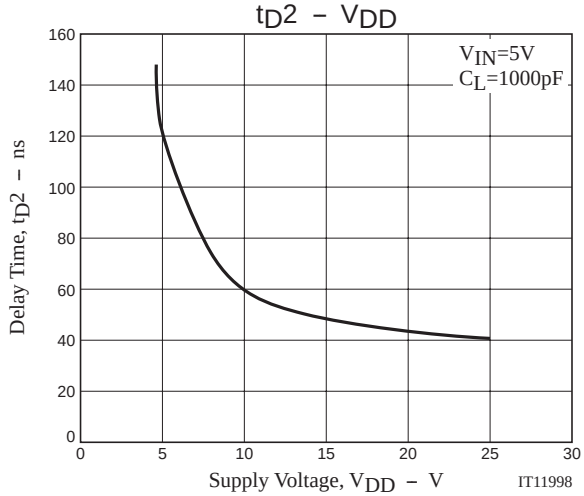
t_f – V_{DD}

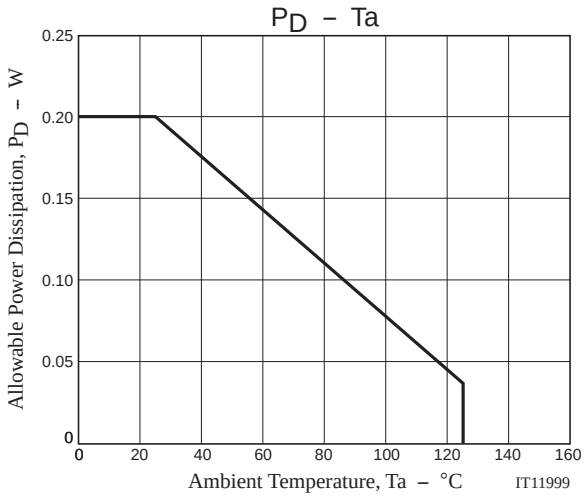


t_{D1} – V_{DD}



t_{D2} – V_{DD}





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