



SANYO Semiconductors

DATA SHEET

TND313S

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.
- 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 : 2A.
- Fast switching time (25ns typical at 1000pF load).
- Fully compatible input to TTL / CMOS. (V_{IH} =not more than 2.6V, at V_{DD} =4.5 to 25V)
- Built-in input pull-down resistance.

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	$^\circ\text{C}$

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

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

Electrical Characteristics (AC Characteristics) at $T_a=25^\circ\text{C}$, $V_{DD}=18\text{V}$, $V_{IN}=5\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-On Rise Time	t_r	$C_L=1000\text{pF}$		20	35	ns
Turn-Off Fall Time	t_f	$C_L=1000\text{pF}$		25	40	ns
Delay Time	t_{D1}	$C_L=1000\text{pF}$		30	45	ns
	t_{D2}	$C_L=1000\text{pF}$		45	60	ns

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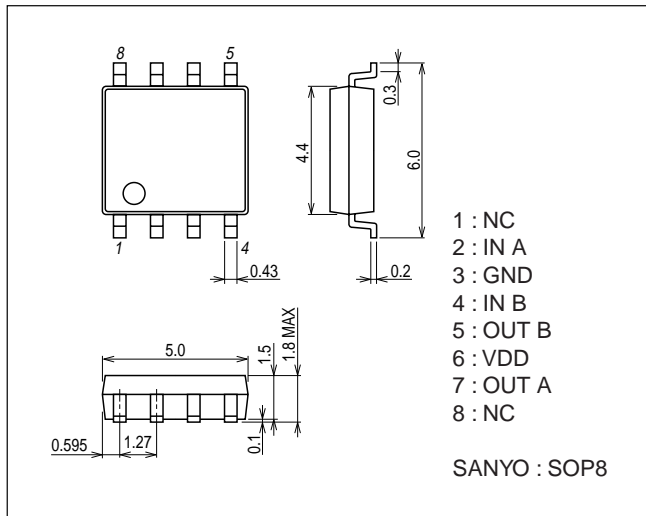
Electrical Characteristics (DC Characteristics) at Ta=25°C, VDD=4.5 to 25V

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		20	55	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 Pulse Current	I _{O+}	V _{DD} =18V, P _W ≤10μs, V _{OUT} =0V		2.0		A
Output Low Short Circuit Pulse Current	I _{O-}	V _{DD} =18V, P _W ≤10μs, V _{OUT} =18V		2.0		A
Output On Resistance	R _{OUT}	V _{DD} =18V, I _{load} =10mA, V _{OUT} ="H"		4	6	Ω
		V _{DD} =18V, I _{load} =10mA, V _{OUT} ="L"		3	5	Ω

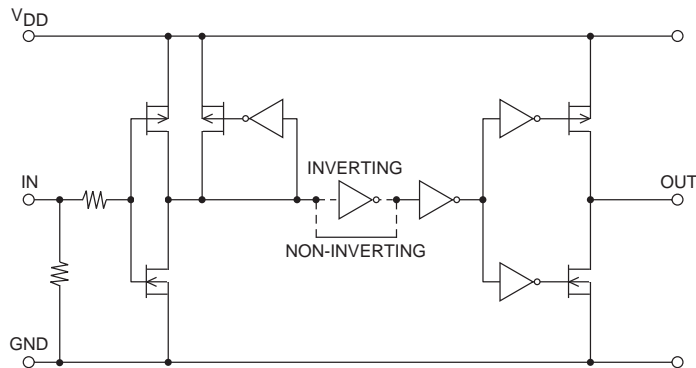
Package Dimensions

unit : mm (typ)

7005-007

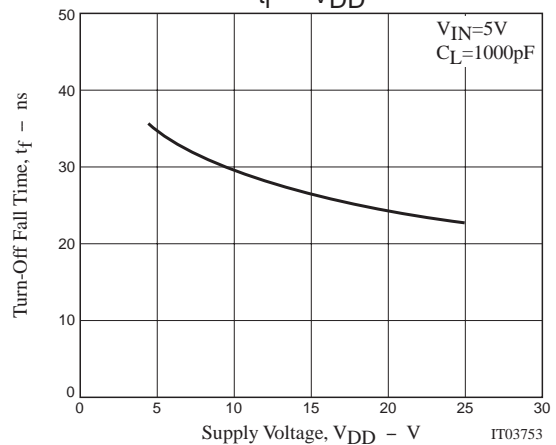
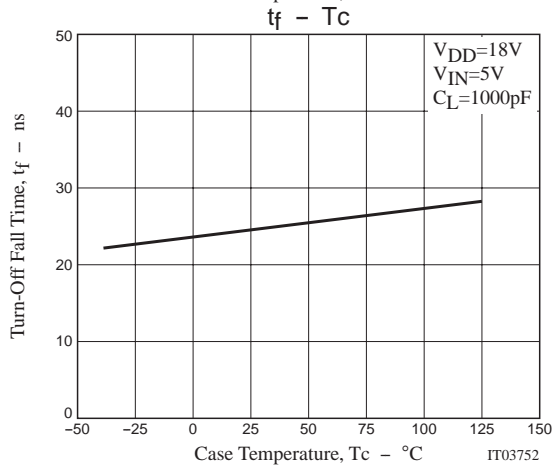
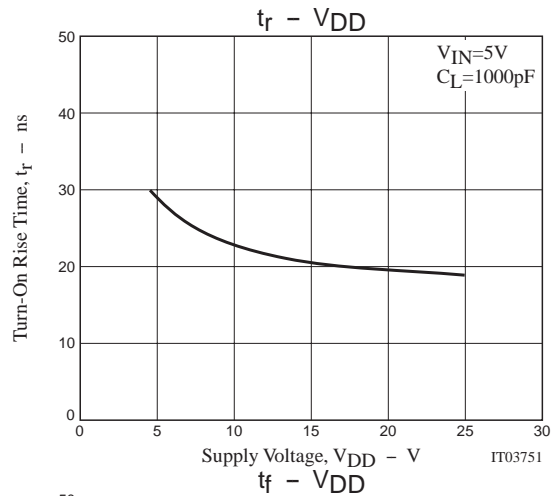
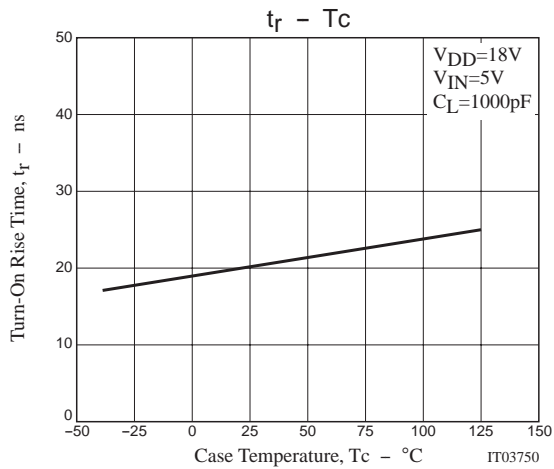
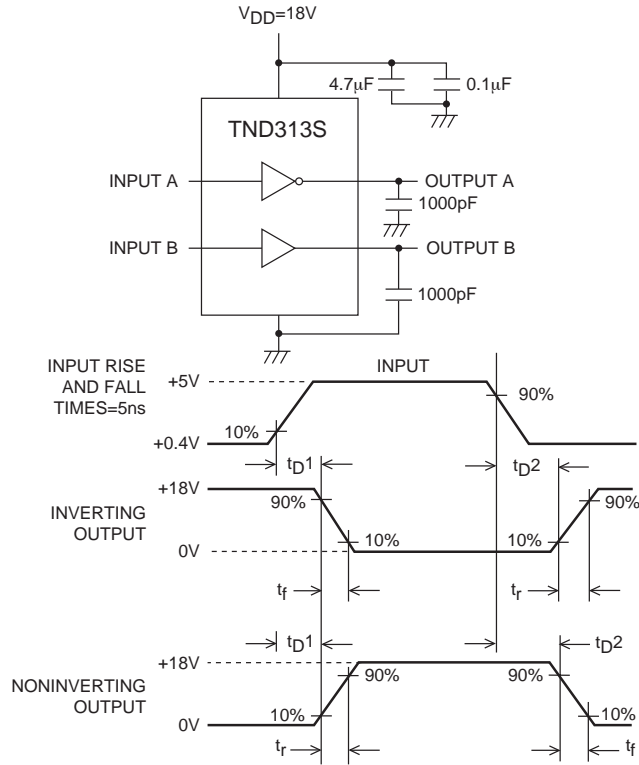


Block Diagram

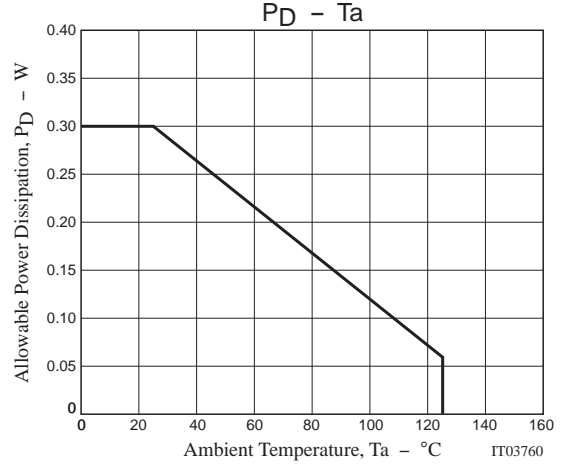
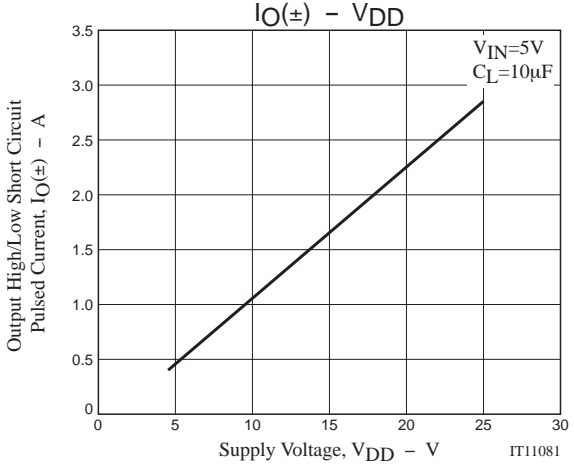
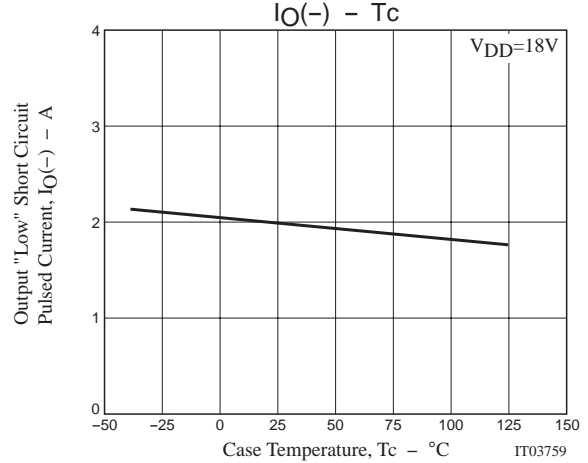
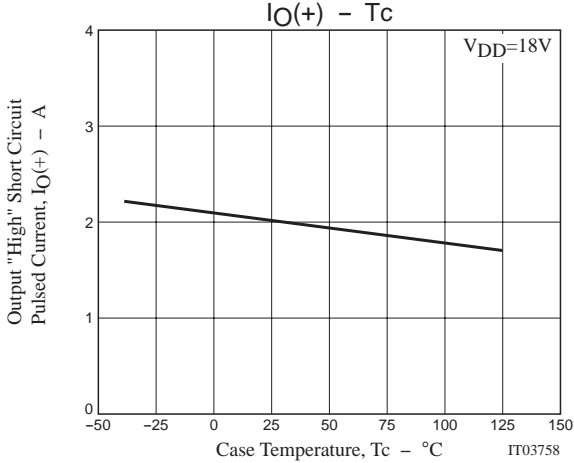
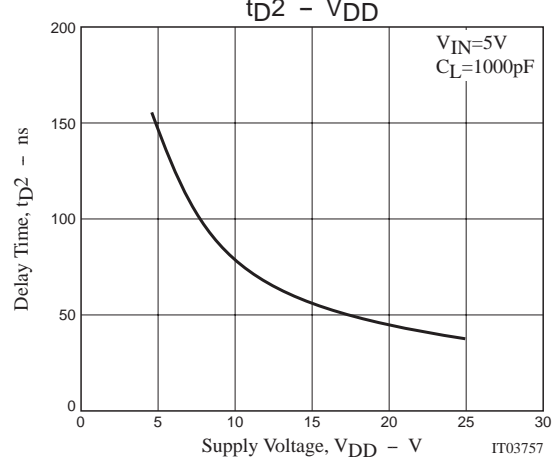
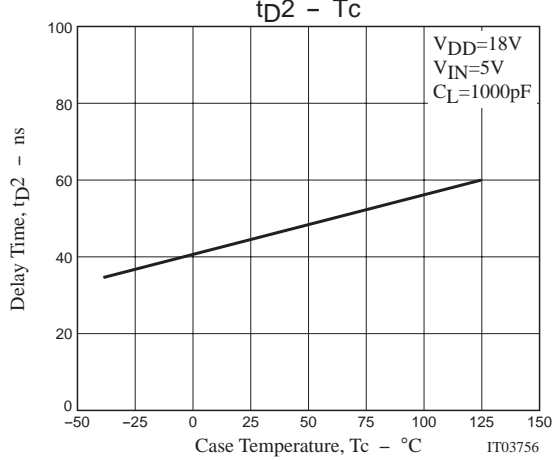
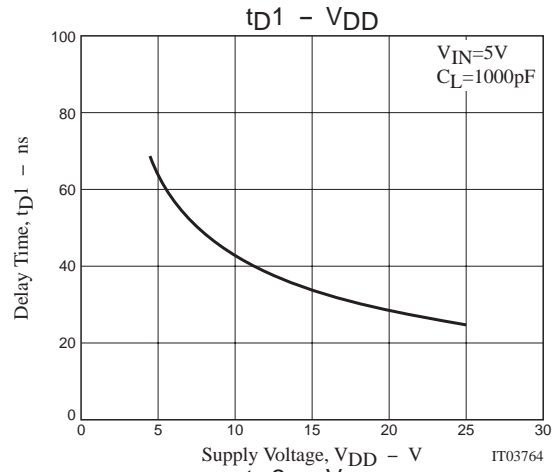
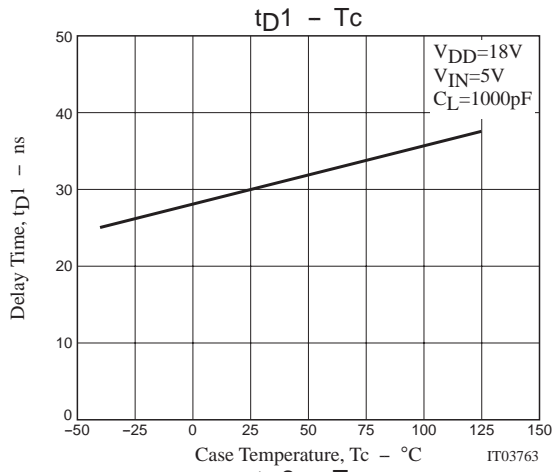


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Switching Time Measuring Circuit



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