

# SANYO Semiconductors DATA SHEET

ExPD (Excellent Power Device)

# **TND312S**— General Purpose Driver for PDP Sustain Pulse Drive, Motor Drive, Switching Power Supply, and DC / DC Converter Applications

#### **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 outpout current: 2A.
- Fast switching time (25ns typical at 1000pF load).
- Fully compatible input to TTL / CMOS. (VIH=not more than 2.6V, at VDD=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 <sub>DD</sub>		0 to 25	V
Input Voltage	VIN		GND-0.3 to V <sub>DD</sub> +0.3	V
Allowable Power Dissipation	P <sub>D</sub> max		0.3	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 <sub>DD</sub>		4.5 to 25	V
Operating Temperature	Topr		-40 to +125	°C

#### Electrical Characteristics (AC Characteristics) at Ta=25°C, VDD=18V, VIN=5V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Turn-On Rise Time	tr	CL=1000pF		20	35	ns
Turn-Off Fall Time	tf	CL=1000pF		25	40	ns
Delay Time	t <sub>D</sub> 1	C <sub>L</sub> =1000pF		30	45	ns
	tD2	CL=1000pF	·	45	60	ns

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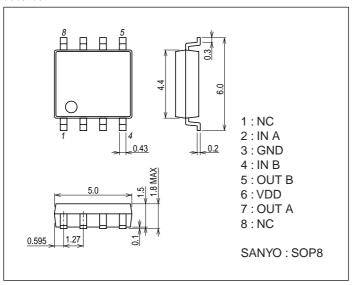
# **TND312S**

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

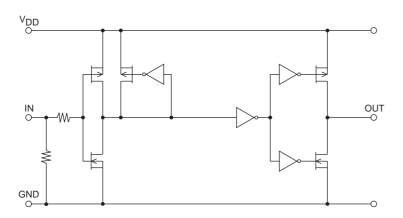
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
Logic "1" Input Voltage	VIH		2.6			V
Logic "0" Input Voltage	VIL				0.8	V
Logic "1" Input Bias Current	IIN+	V <sub>IN</sub> =V <sub>DD</sub> =25V		20	55	μΑ
Logic "0" Input Bias Current	IIN-	VIN=0V or VDD	-1		1	μΑ
High Level Output Voltage	Voн	IO=0A	V <sub>DD</sub> -0.1			V
Low Level Output Voltage	VOL	IO=0A			0.1	V
V <sub>DD</sub> Supply Current	Isupp	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	IO+	V <sub>DD</sub> =18V, PW≤10μs, V <sub>OUT</sub> =0V		2.0		Α
Output Low Short Circuit Pulsed Current	10-	V <sub>DD</sub> =18V, PW≤10μs, V <sub>OUT</sub> =18V		2.0		Α
Output On Resistance	ROUT	V <sub>DD</sub> =18V, Iload=10mA, V <sub>OUT</sub> ="H"		4	6	Ω
		V <sub>DD</sub> =18V, Iload=10mA, V <sub>OUT</sub> ="L"		3	5	Ω

# **Package Dimensions**

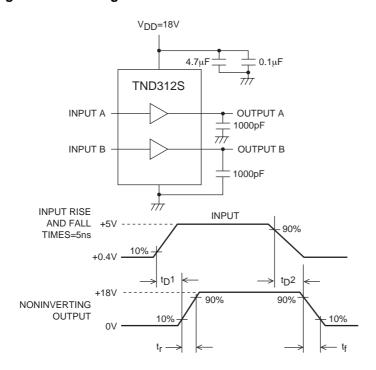
unit : mm (typ) 7005-007

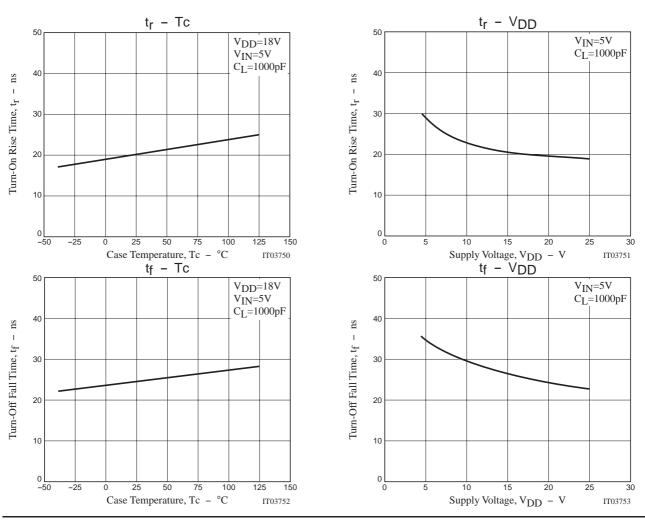


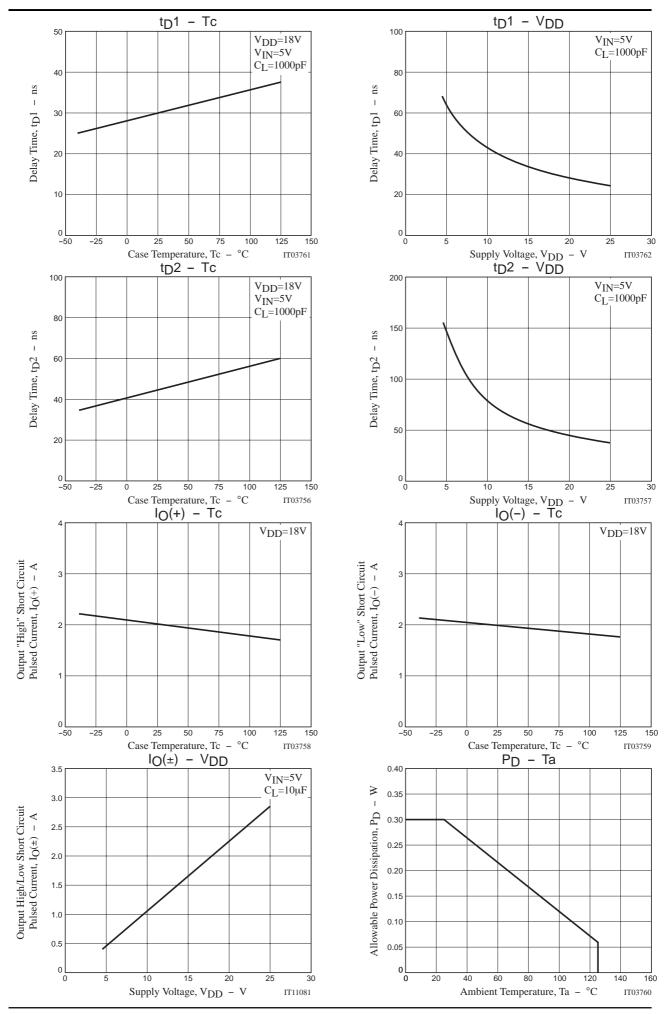
# **Block Diagram**



### **Switching Time Measuring Circuit**







#### **TND312S**

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