



SANYO Semiconductors

DATA SHEET

TND315S

 — ExPD (Excellent Power Device)
**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 output current : 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 $T_a=25^\circ\text{C}$

| 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 | PD 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 | $C_L=1000\text{pF}$ | | 30 | 45 | ns |
| Turn-Off Fall Time | t_f | $C_L=1000\text{pF}$ | | 30 | 45 | 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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TND315S

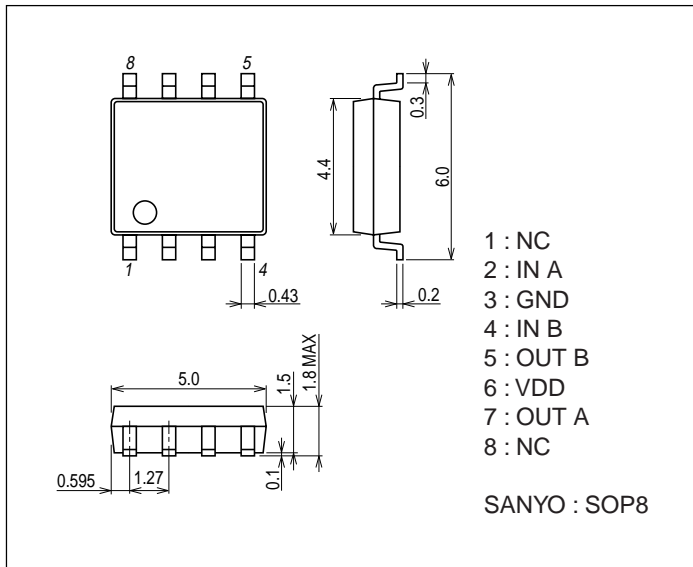
Electrical Characteristics (DC Characteristics) at $T_a=25^\circ\text{C}$, $V_{DD}=4.5$ to 25V

| 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+} | $V_{IN}=V_{DD}=25\text{V}$ | | 40 | 100 | μA | |
| Logic "0" Input Bias Current | I_{IN-} | $V_{IN}=0\text{V}$ or V_{DD} | -1 | | 1 | μA | |
| High Level Output Voltage | V_{OH} | $I_O=0\text{A}$ | $V_{DD}-0.1$ | | | V | |
| Low Level Output Voltage | V_{OL} | $I_O=0\text{A}$ | | | 0.1 | V | |
| V_{DD} Supply Current | I_{supp} | $V_{DD}=10\text{V}$, $V_{IN}=3\text{V}$, (both inputs) | | 1.0 | 4.5 | mA | |
| | | $V_{DD}=10\text{V}$, $V_{IN}=0\text{V}$, (both inputs) | | | 0.2 | mA | |
| Output High Short Circuit Pulse Current | I_{O+} | $V_{DD}=18\text{V}$, $PW \leq 10\mu\text{s}$, $V_{OUT}=0\text{V}$ | | 1.0 | | A | |
| Output Low Short Circuit Pulse Current | I_{O-} | $V_{DD}=18\text{V}$, $PW \leq 10\mu\text{s}$, $V_{OUT}=18\text{V}$ | | 1.0 | | A | |
| Output On Resistance | R_{OUT} | $V_{DD}=18\text{V}$, $I_{load}=10\text{mA}$, $V_{OUT}=\text{"H"}$ | | | 8 | 12 | Ω |
| | | $V_{DD}=18\text{V}$, $I_{load}=10\text{mA}$, $V_{OUT}=\text{"L"}$ | | | 6 | 10 | Ω |

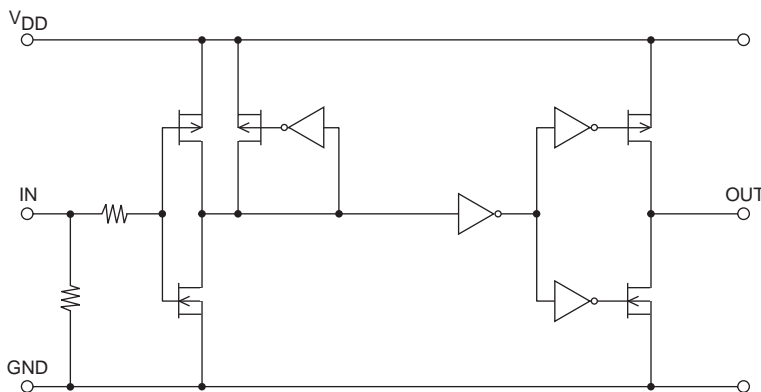
Package Dimensions

unit : mm (typ)

7005-007

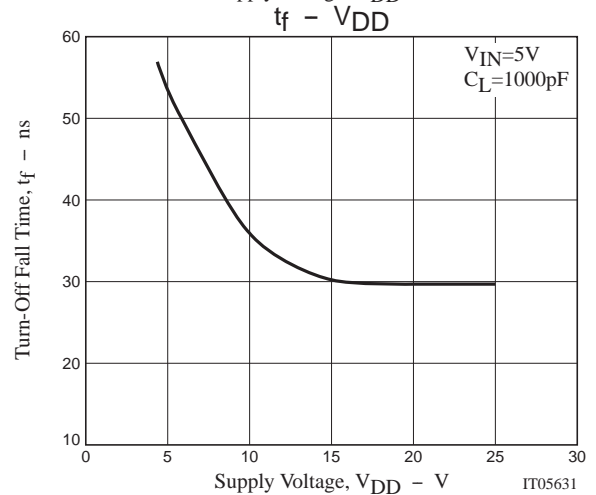
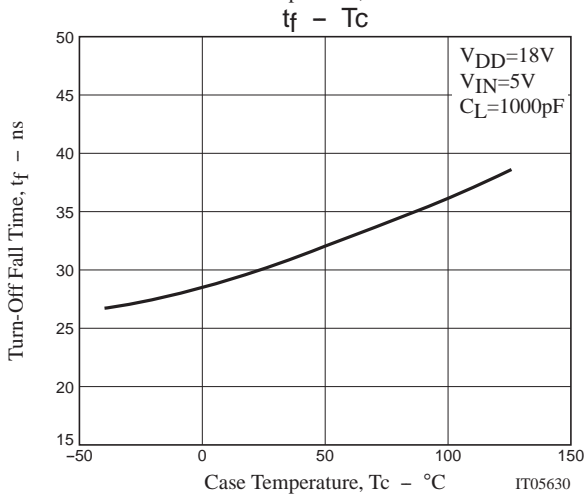
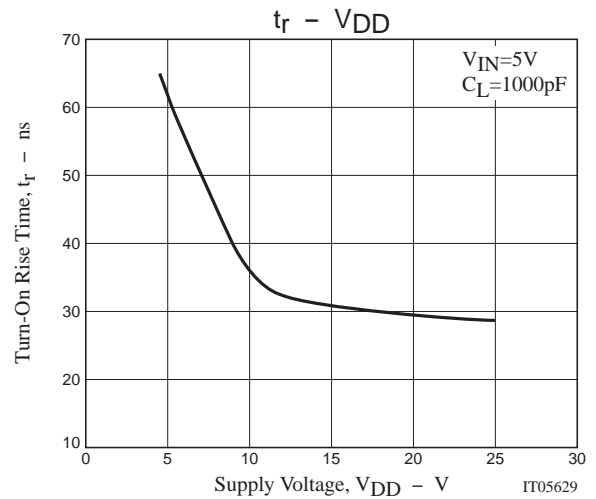
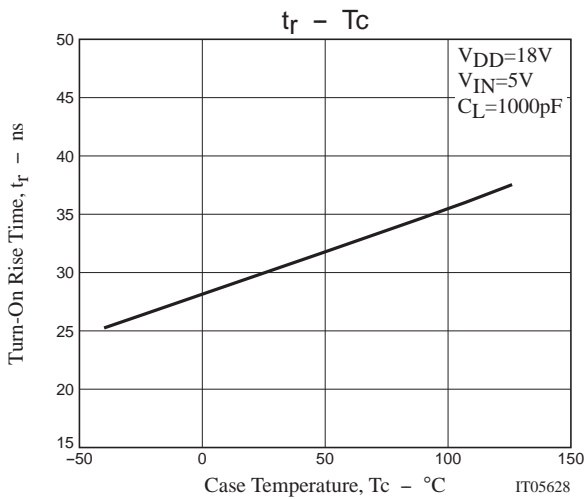
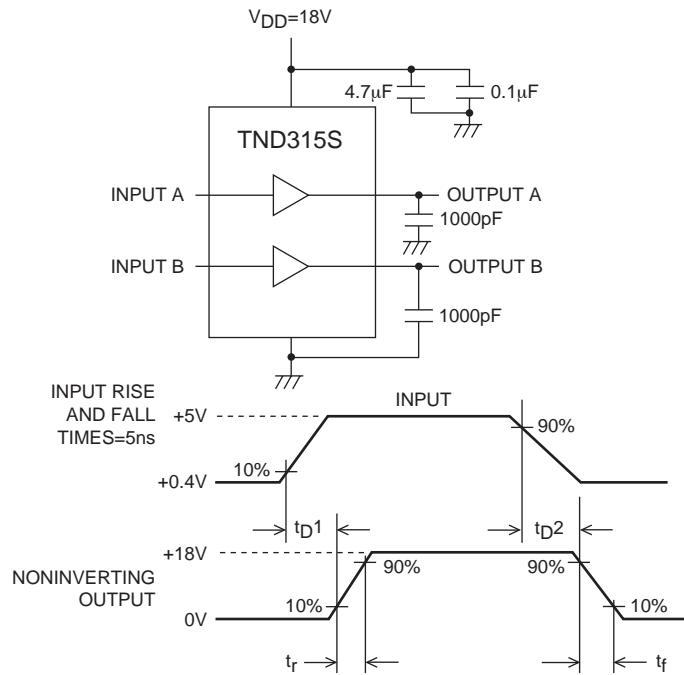


Block Diagram

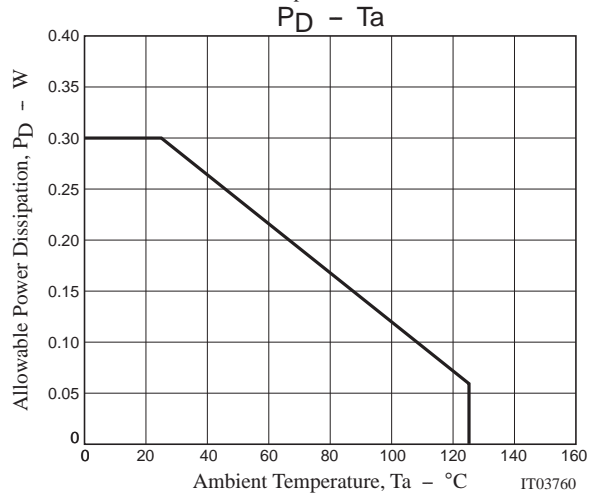
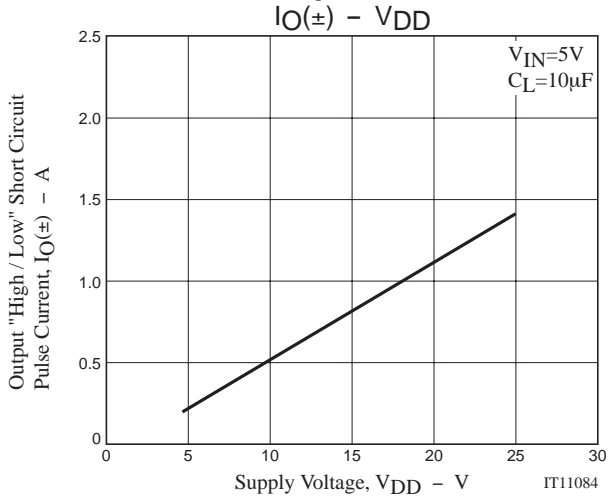
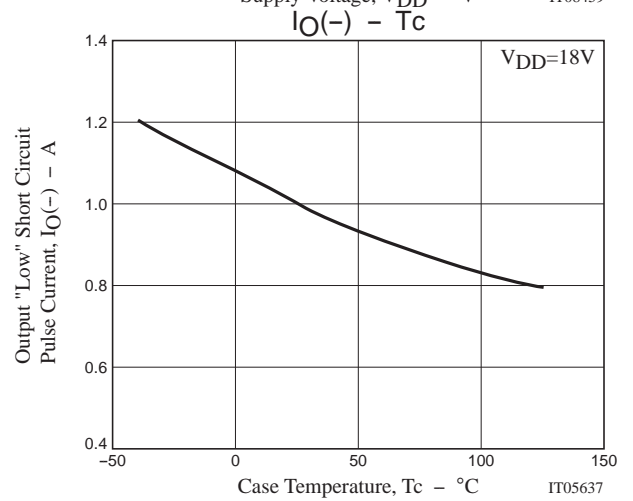
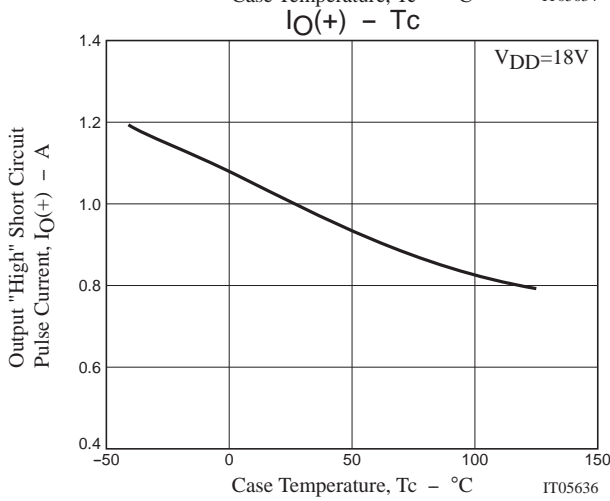
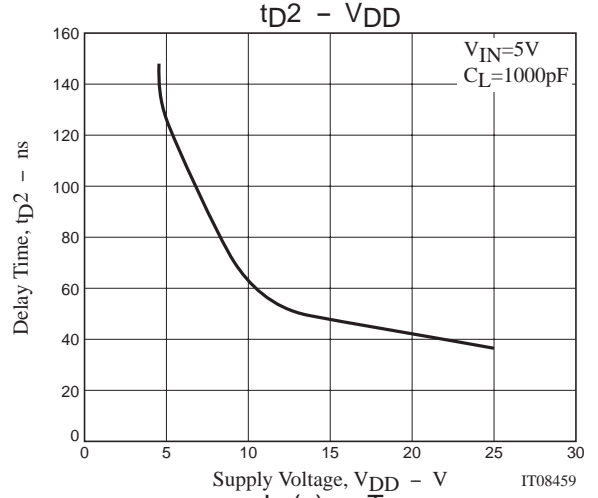
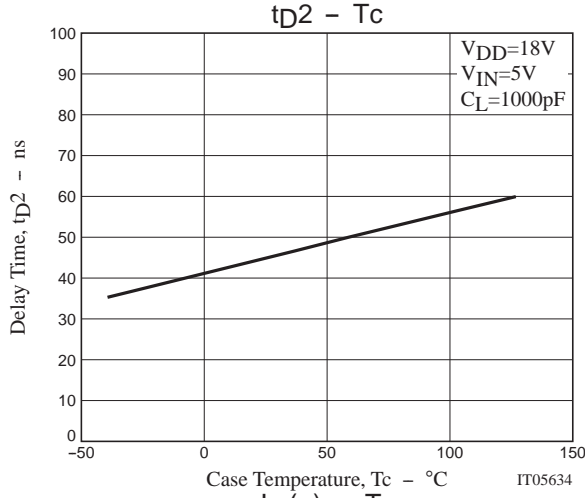
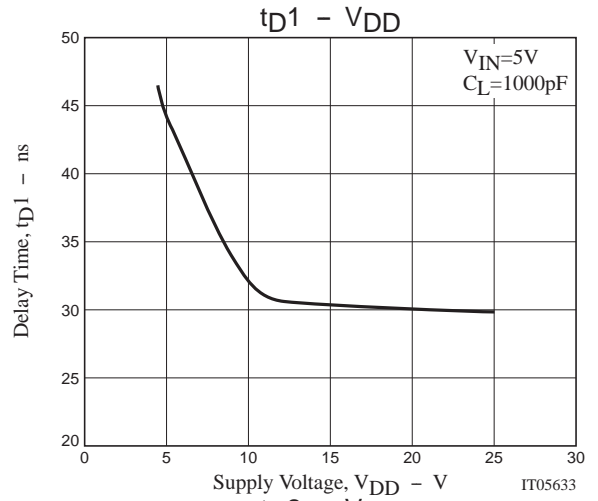
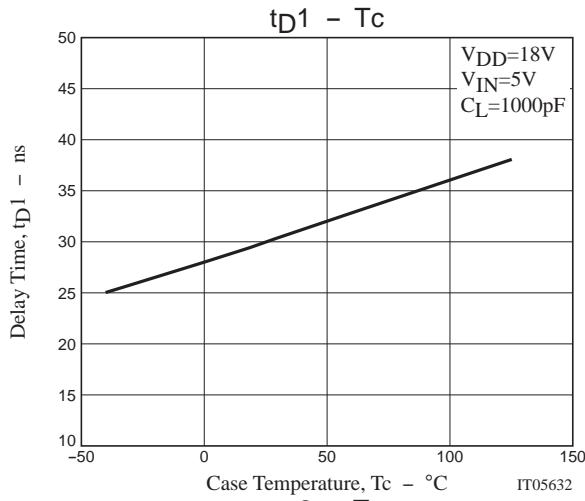


TND315S

Switching Time Test Circuit



TND315S



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