



SANYO Semiconductors

DATA SHEET

TND311S

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 : 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} | $C_L=1000\text{pF}$ | | 25 | 40 | ns |
| | t_{D2} | $C_L=1000\text{pF}$ | | 45 | 60 | ns |

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D0606IP TI IM TB-00001541 No. A0416-1/5

TND311S

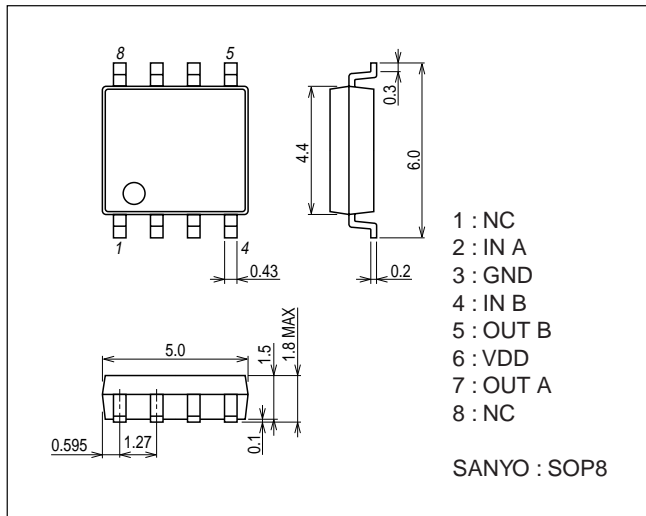
Electrical Characteristics (DC Characteristics) at Ta=25°C, VDD=4.5 to 25V

| 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 Pulsed Current | I _{O+} | V _{DD} =18V, P _W ≤10μs, V _{OUT} =0V | | 2.0 | | A |
| Output Low Short Circuit Pulsed 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 |

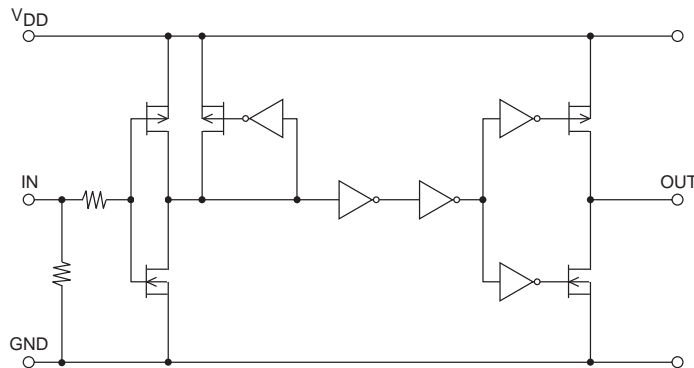
Package Dimensions

unit : mm (typ)

7005-007

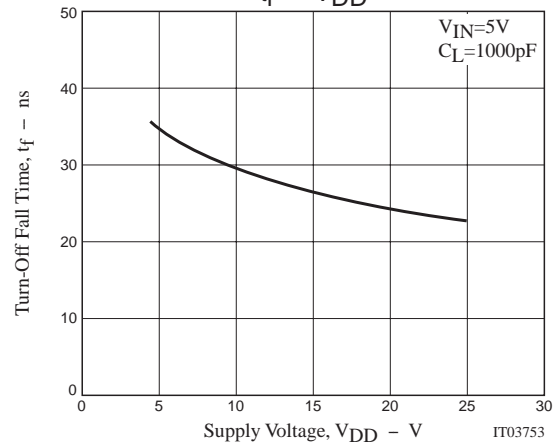
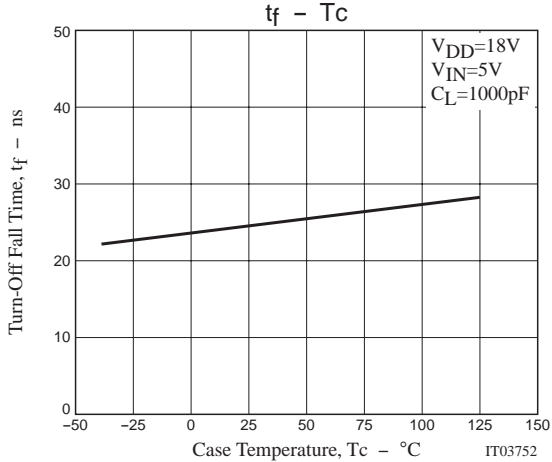
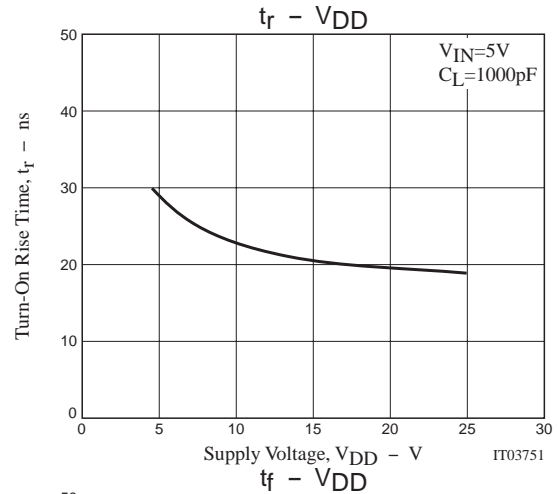
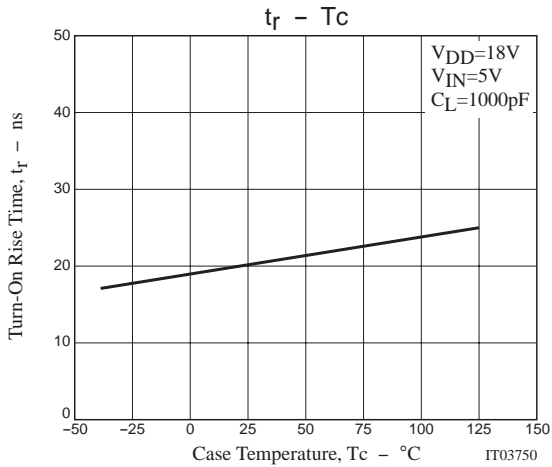
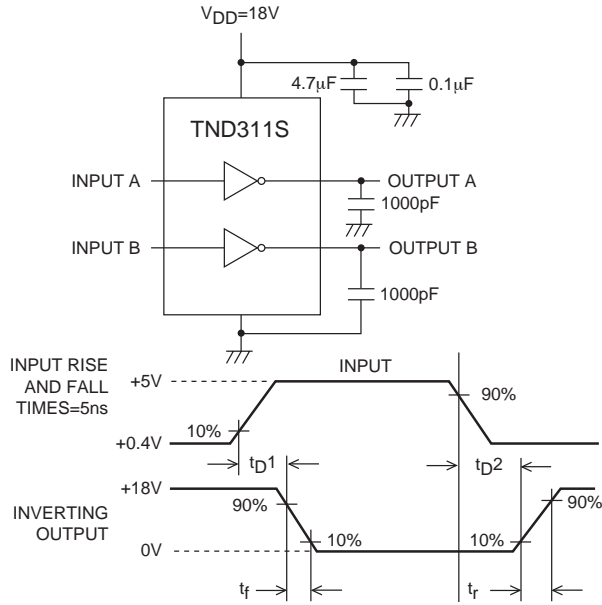


Block Diagram

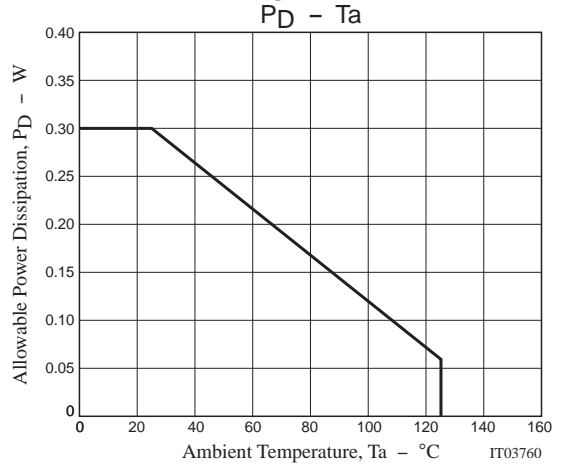
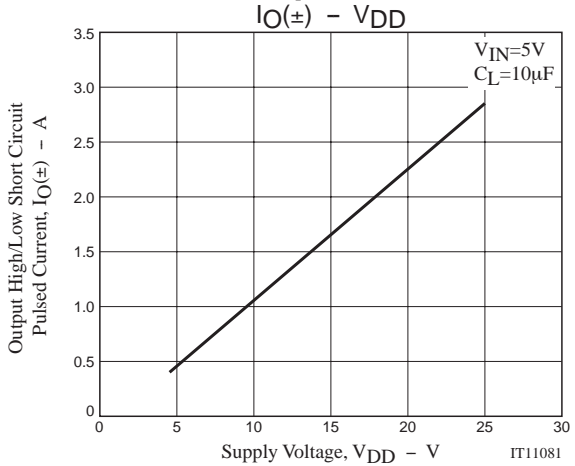
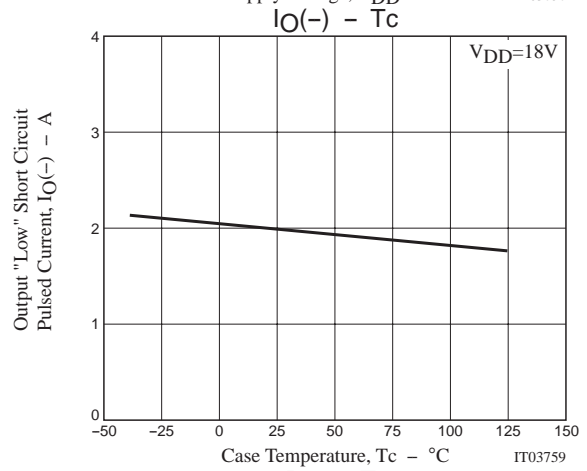
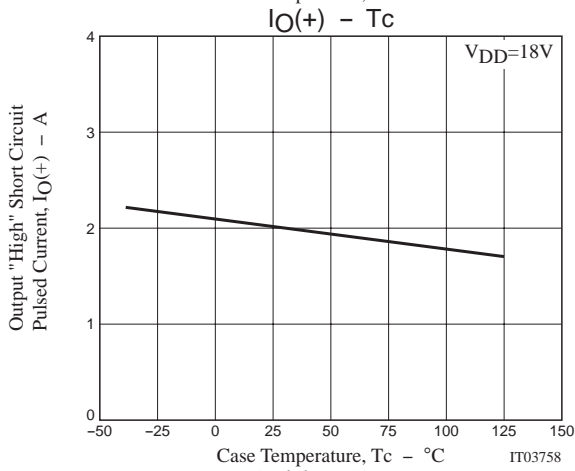
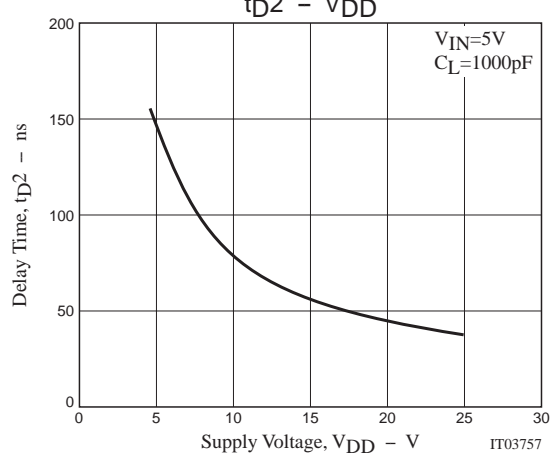
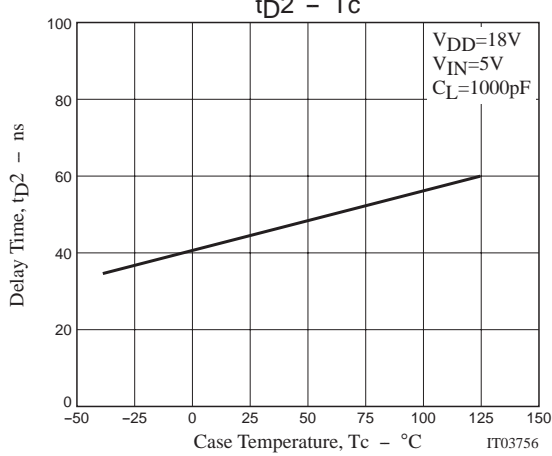
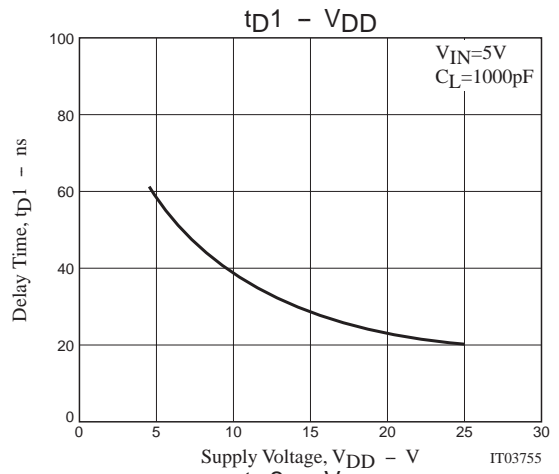
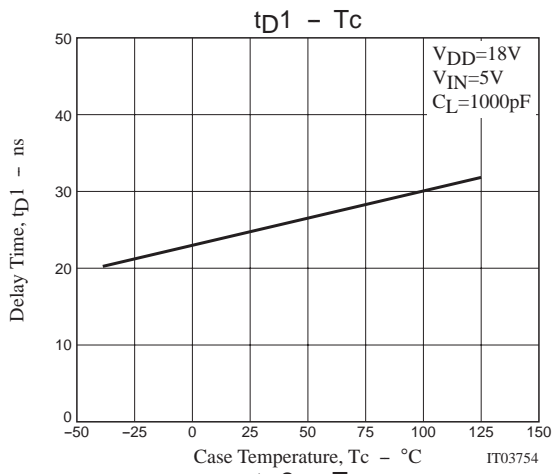


TND311S

Switching Time Measuring Circuit



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