



**THE DATASHEET OF  
TND303S-TL-E**





# TND303S

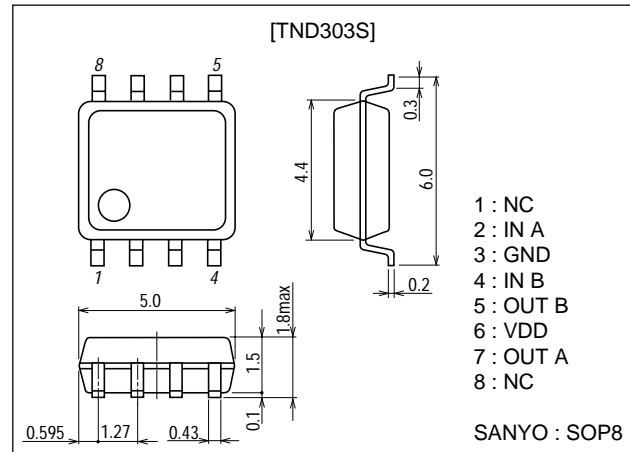
## General Purpose Driver for PDP Sustain Pulse Drive, DC / AC Motor Drive, Switching Power Supply, DC / DC Converter Applications

### 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)

### Package Dimensions

unit : mm  
2199



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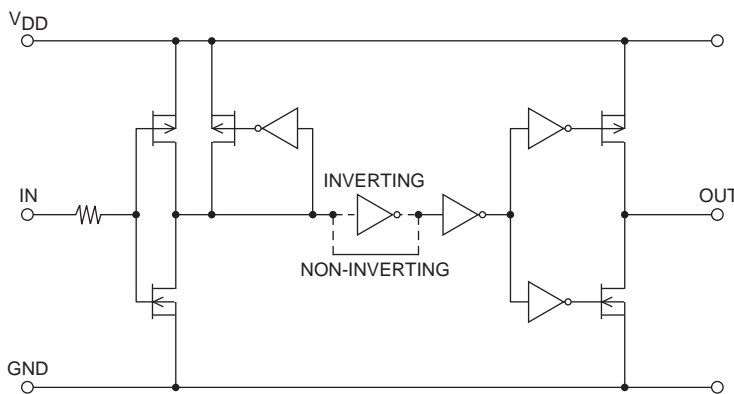
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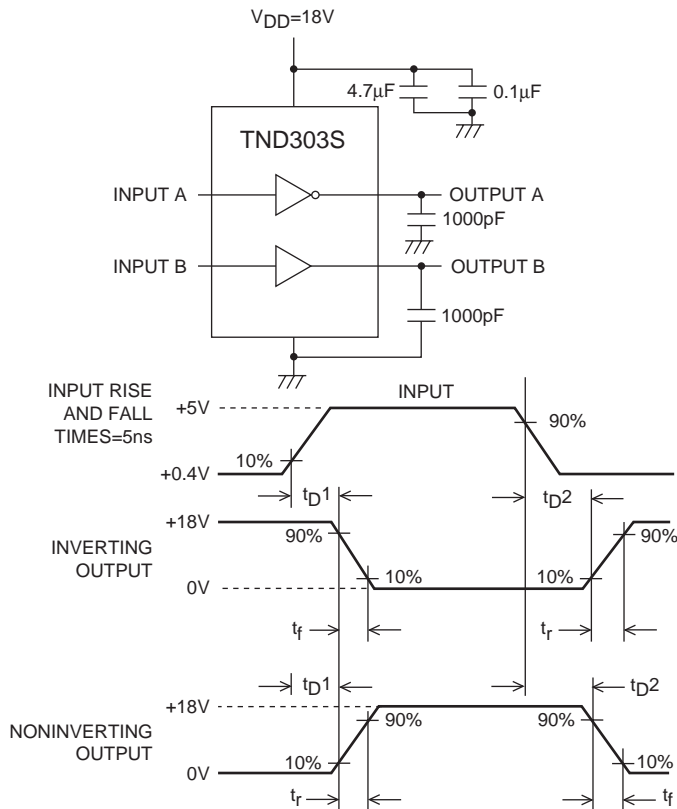
## Electrical Characteristics (DC Characteristics) at $T_a=25^\circ\text{C}$ , $V_{DD}=4.5$ to $25\text{V}$

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
Input Bias Current	$I_{IN}$	$V_{IN}=0$ or $V_{DD}$	-1		1	$\mu\text{A}$
High Level Output Voltage	$V_{OH}$	$I_O=0$	$V_{DD}-0.1$			V
Low Level Output Voltage	$V_{OL}$	$I_O=0$			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
		$V_{DD}=10\text{V}$ , $V_{IN}=0$ , (both inputs)			0.2	mA
Output High Short Circuit Pulsed Current	$I_{O+}$	$V_{DD}=18\text{V}$ , $PW \leq 10\mu\text{s}$ , $V_{OUT}=0$		2.0		A
Output Low Short Circuit Pulsed Current	$I_{O-}$	$V_{DD}=18\text{V}$ , $PW \leq 10\mu\text{s}$ , $V_{OUT}=18\text{V}$		2.0		A
Output On Resistance	$R_{OUT}$	$V_{DD}=18\text{V}$ , $I_{load}=10\text{mA}$ , $V_{OUT}=\text{"H"}$		4	6	$\Omega$
		$V_{DD}=18\text{V}$ , $I_{load}=10\text{mA}$ , $V_{OUT}=\text{"L"}$		3	5	$\Omega$

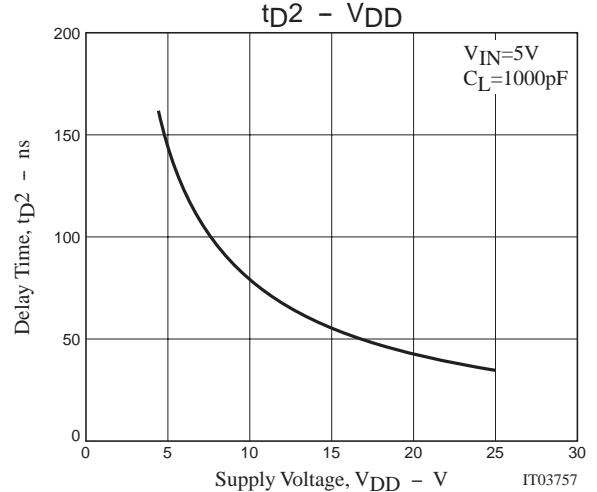
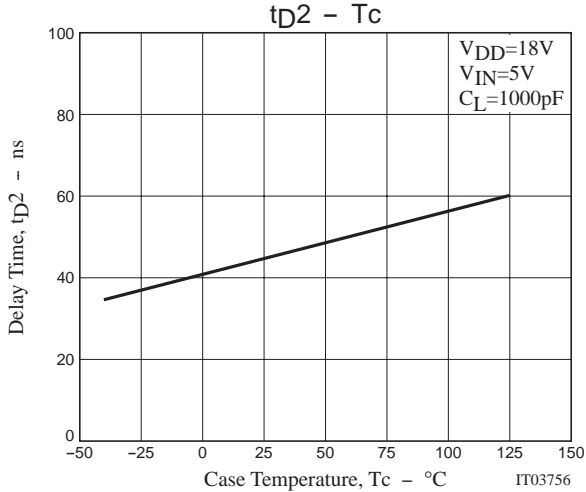
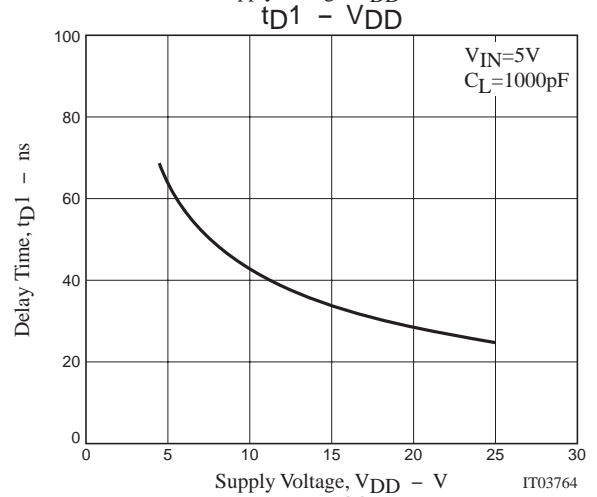
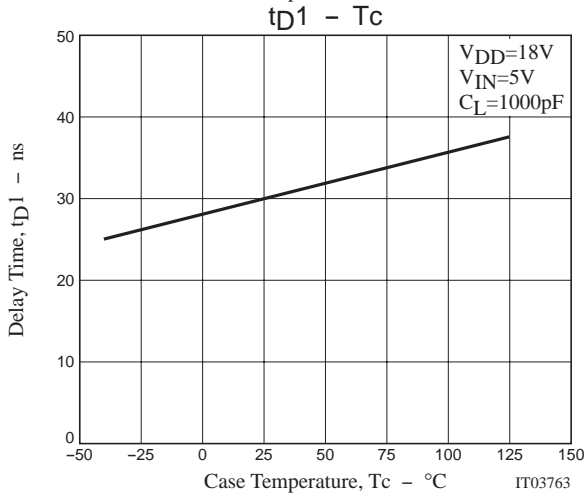
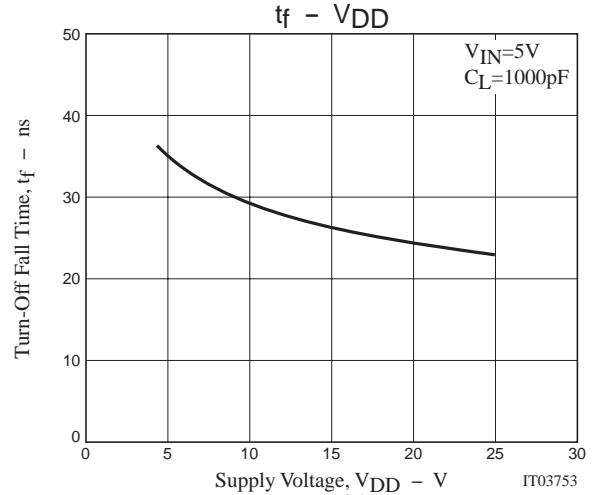
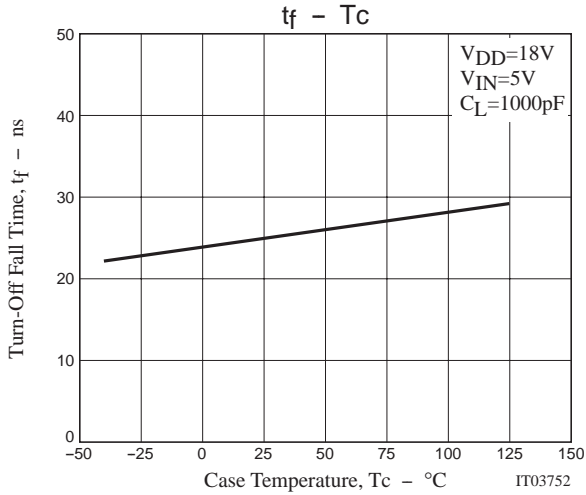
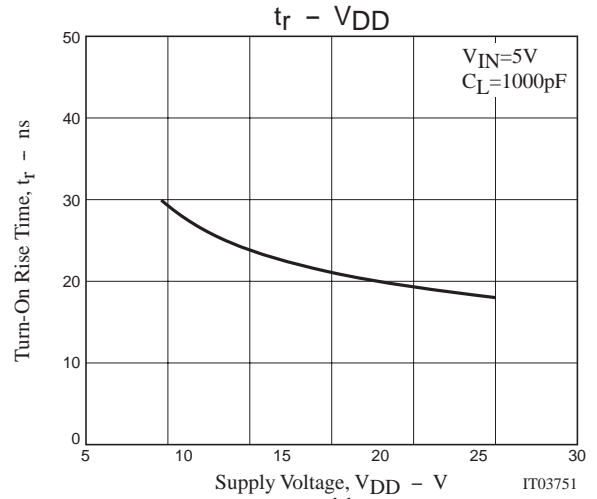
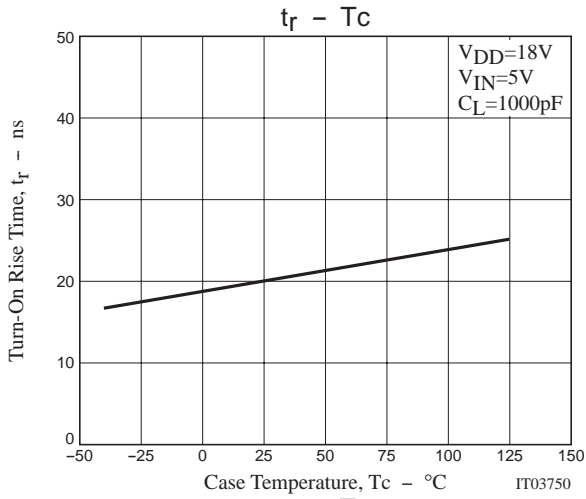
## Block Diagram

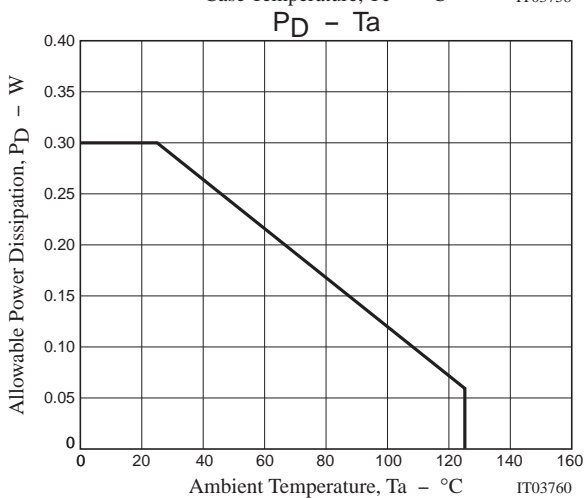
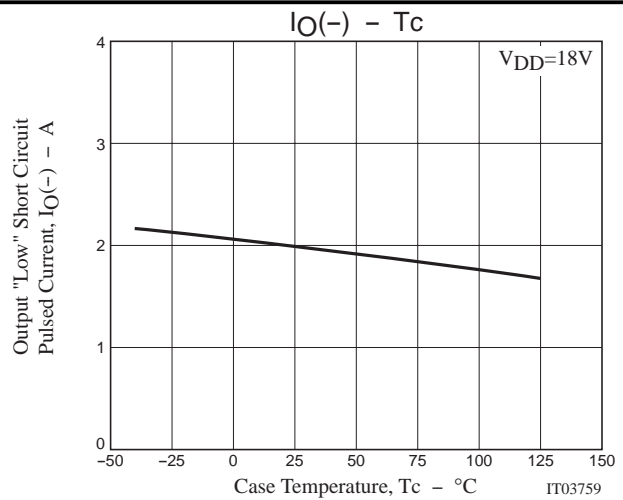
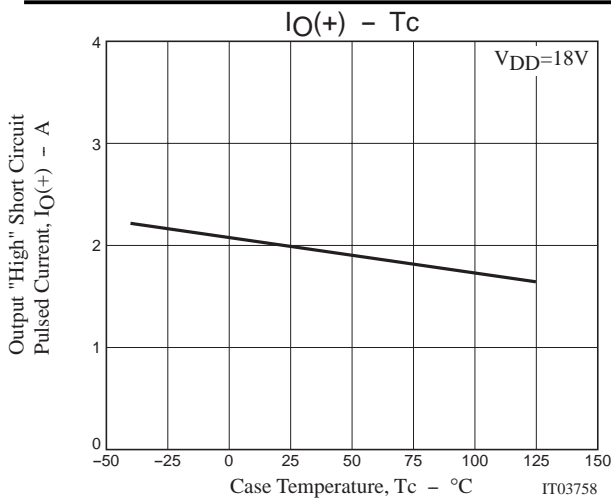


## Switching Time Measuring Circuit



# TND303S







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