



SANYO Semiconductors

DATA SHEET

TND517VS

 — ExPD(Excellent Power Device)

Single-phase High Side Drive Application

Features

- Single-phase high side driver.
- Monolithic structure.
- Allows simplified configuration of driver circuit.
- Withstand voltage of 600V is assured.
- Fully compatible input to LSTTL/CMOS.
- High-speed switching.
- Output current: 170mA Source, 340mA Sink.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$ (All voltage parameters are absolute voltage referenced to GND)

Parameter	Symbol	Conditions	Ratings	Unit
High Side Floating Supply Voltage	V_H		-0.3 to 625	V
High Side Floating Supply Offset Voltage	V_S		V_H-25 to $V_H+0.3$	V
High Side Output Voltage	V_{HOUT}		$V_S-0.3$ to $V_H+0.3$	V
Logic Supply Voltage	V_{DD}		-0.3 to 25	V
Logic Input Voltage	V_{HIN}		-0.3 to $V_{DD}+0.3$	V
Allowable Power Dissipation	P_D		0.2	W
Junction Temperature	T_j		-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings	Unit
High Side Floating Supply Voltage	V_H		V_S+10 to V_S+20	V
High Side Floating Supply Offset Voltage	V_S		0 to 600	V
High Side Output Voltage	V_{HOUT}		V_S to V_H	V
Logic Supply Voltage	V_{DD}		+10 to +20	V
Logic Input Voltage	V_{HIN}		0 to V_{DD}	V
Ambient Temperature	T_{opr}		-40 to +125	$^\circ\text{C}$

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AC Characteristics at Ta=25°C (VDD=VHS=15V, CL=1000pF)

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t _{on}	V _S =0V		125		ns
Turn-OFF Delay Time	t _{off}	V _S =600V		115		ns
Turn-ON Rise Time	t _r			110		ns
Turn-OFF Fall Time	t _f			40		ns

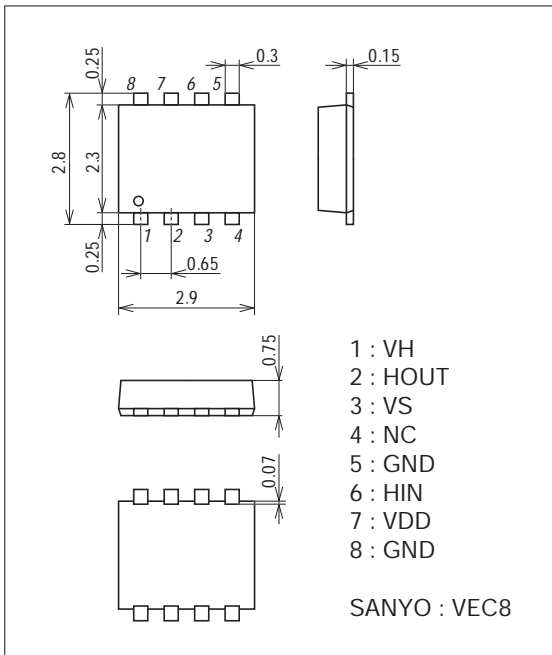
DC Characteristics at Ta=25°C (VDD=VHS=15V)

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Logic "1" Input Voltage	V _{IH}	V _{DD} =10 to 20V	3.0			V
Logic "0" Input Voltage	V _{IL}	V _{DD} =10 to 20V			0.8	V
High-level Output Voltage, VBIAS-V _O	V _{OH}	V _{HIN} =V _{IH} , I _O =0A			0.1	V
Low-level Output Voltage, V _O	V _{OL}	V _{HIN} =V _{IL} , I _O =0A			0.1	V
Offset Supply Leakage Current	I _{LK}	V _H =V _S =600V			10	μA
Quiescent V _H Supply Current	I _{QH}	V _{HIN} =0V or V _{DD}		70	120	μA
Quiescent V _{DD} Supply Current	I _{QDD}	V _{HIN} =0V or V _{DD}		140	230	μA
Logic "1" Input Bias Current	I _{IN+}	V _{HIN} =V _{DD}		20	55	μA
Logic "0" Input Bias Current	I _{IN-}	V _{HIN} =0V			1	μA
V _H Supply Undervoltage Positive Going Threshold	V _{HUV+}		7.6	8.9	9.9	V
V _H Supply Undervoltage Negative Going Threshold	V _{HUV-}		6.7	8.1	9.5	V
V _{DD} Supply Undervoltage Positive Going Threshold	V _{DDUV+}		7.6	8.9	9.9	V
V _{DD} Supply Undervoltage Negative Going Threshold	V _{DDUV-}		6.7	8.1	9.5	V
Output High Short Circuit Pulsed Current	I _{O+}	V _{HOUT} =0V, V _{HIN} =15V, PW≤10μs	170	200		mA
Output Low Short Circuit Pulsed Current	I _{O-}	V _{HOUT} =15V, V _{HIN} =0V, PW≤10μs	340	400		mA

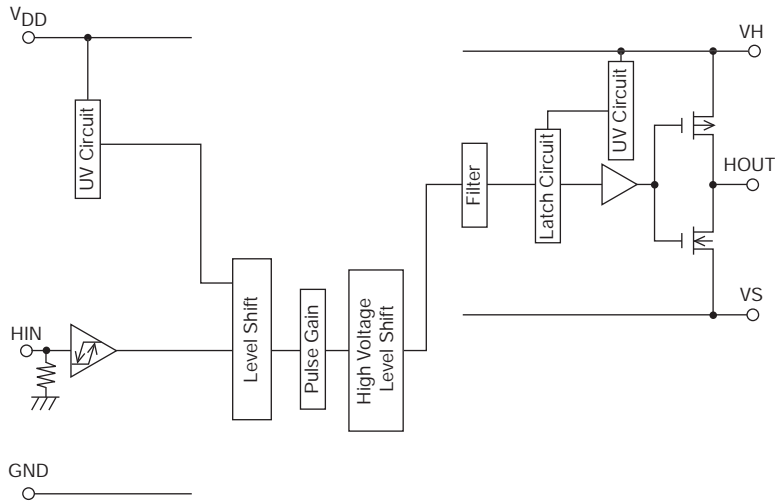
Package Dimensions

unit : mm (typ)

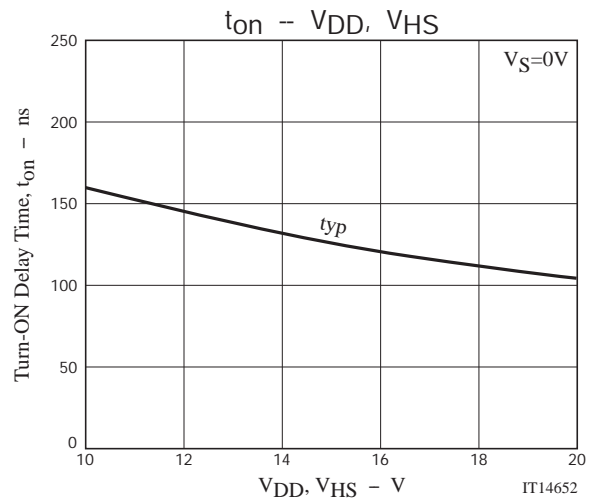
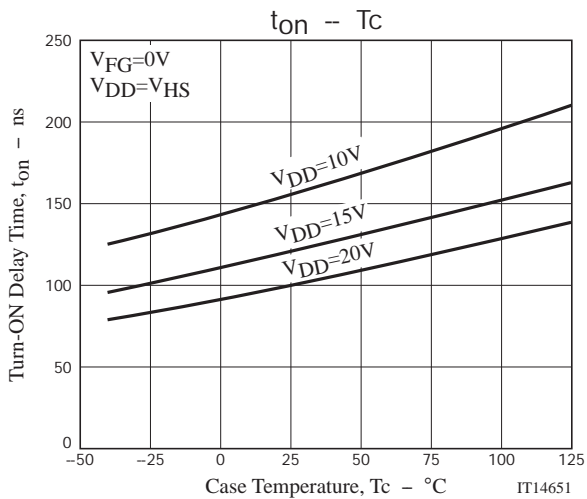
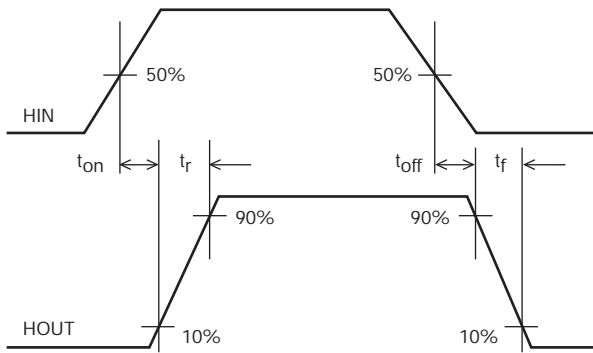
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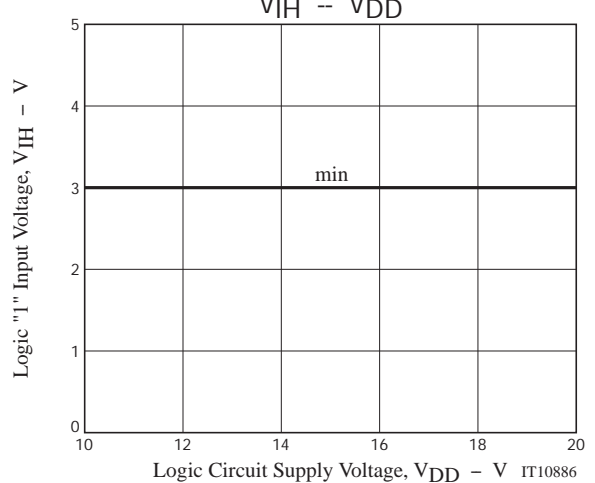
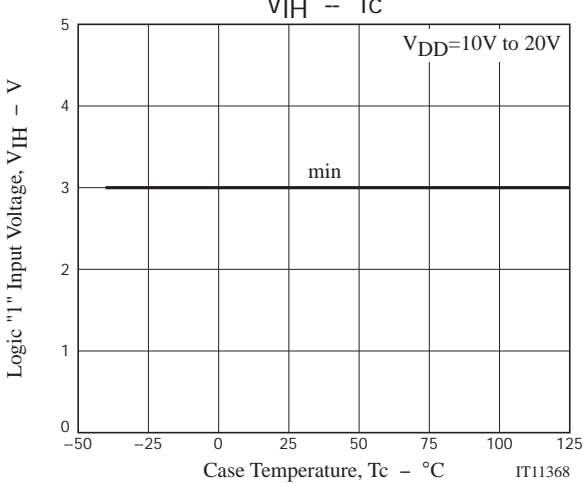
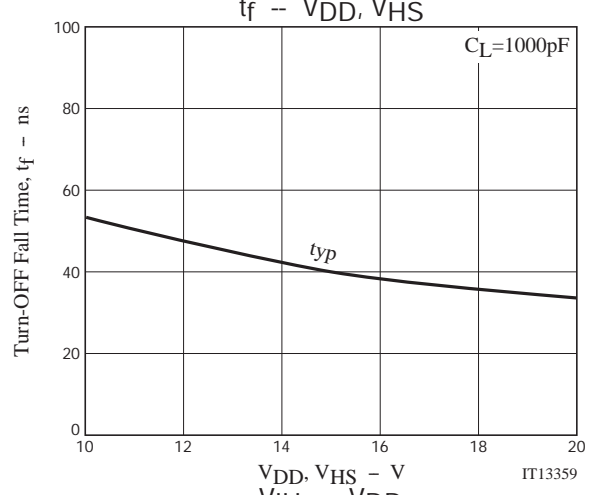
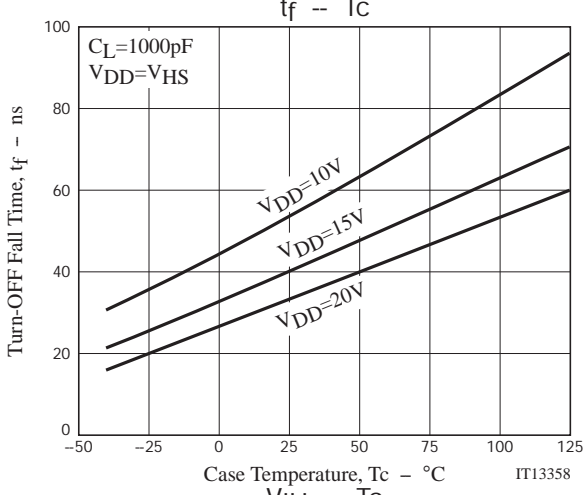
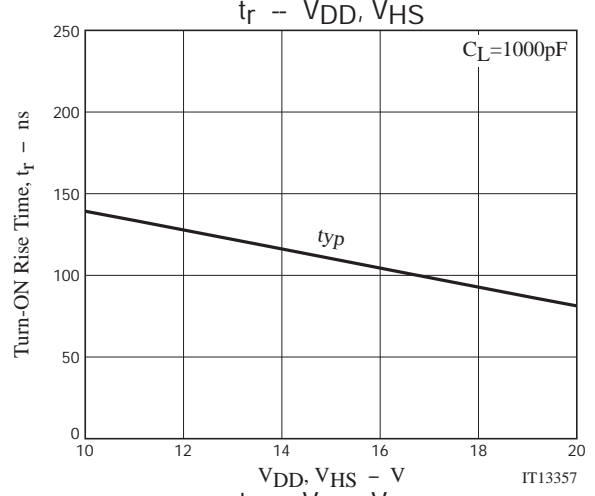
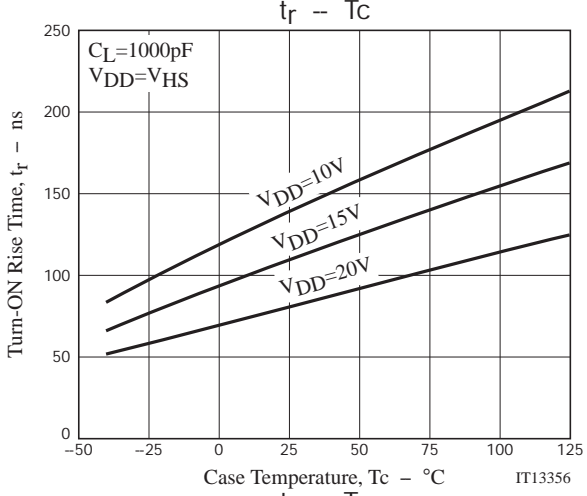
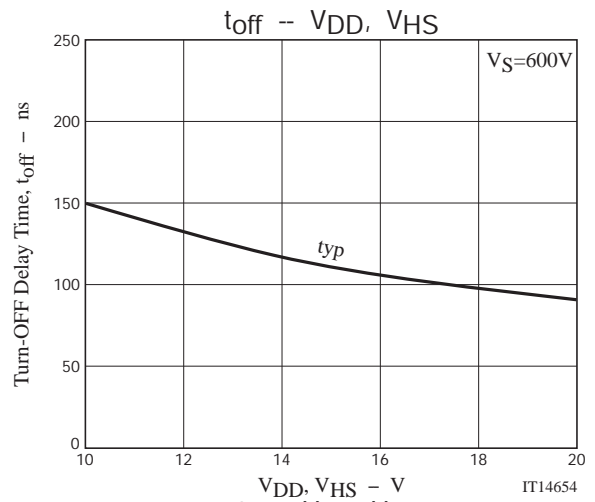
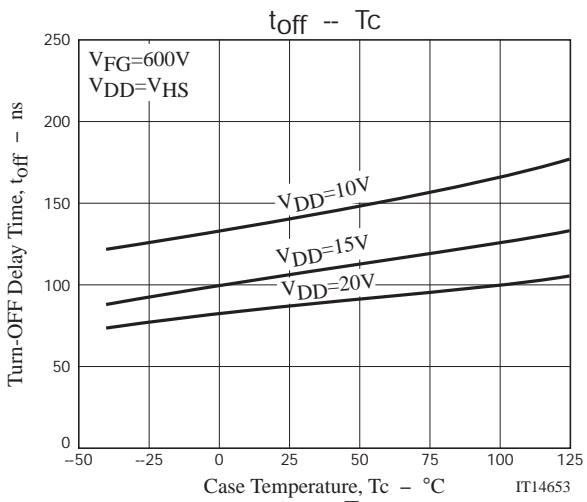
Block Diagram



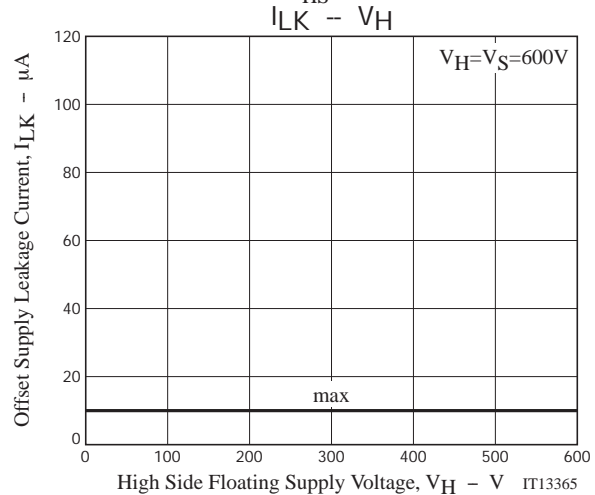
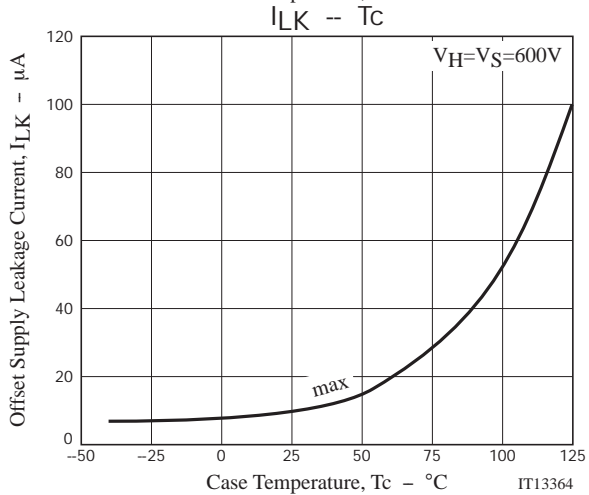
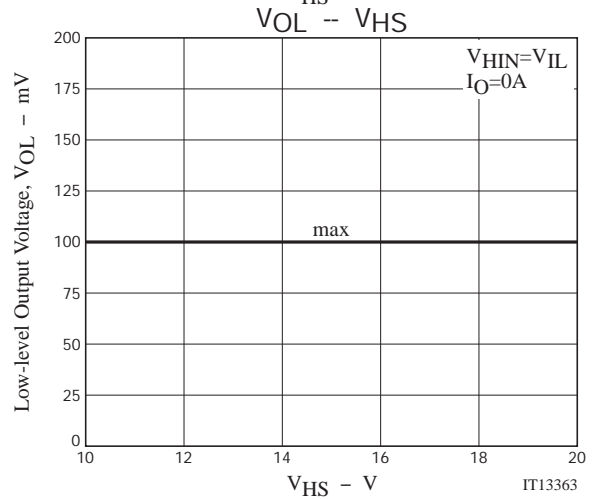
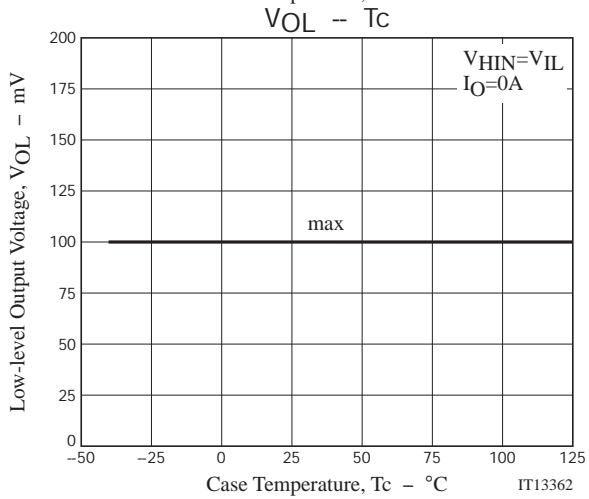
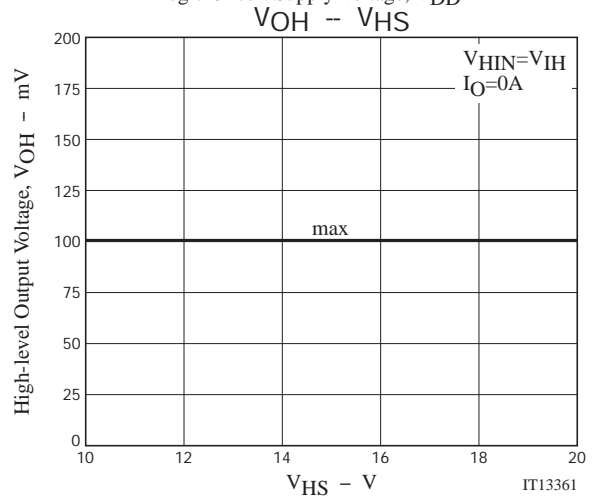
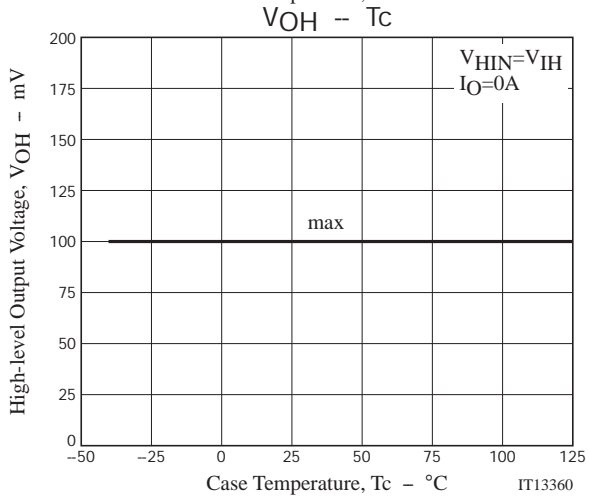
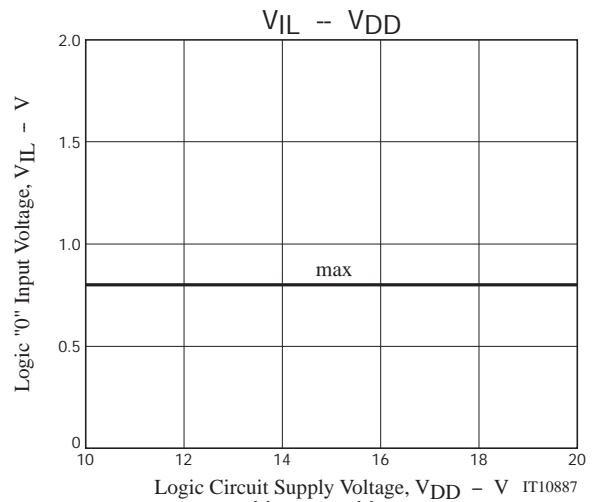
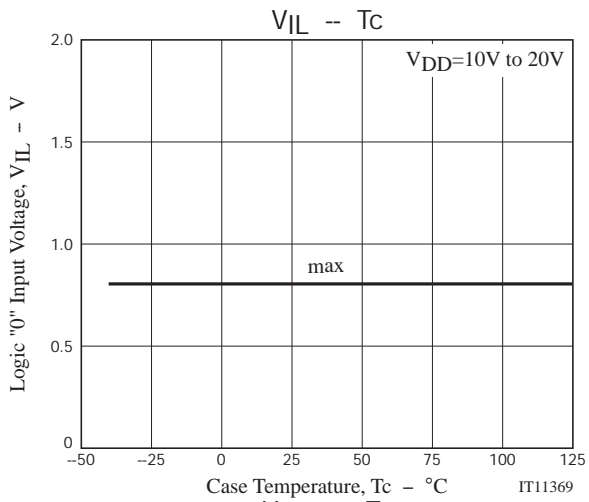
Switching Time Waveform Definition



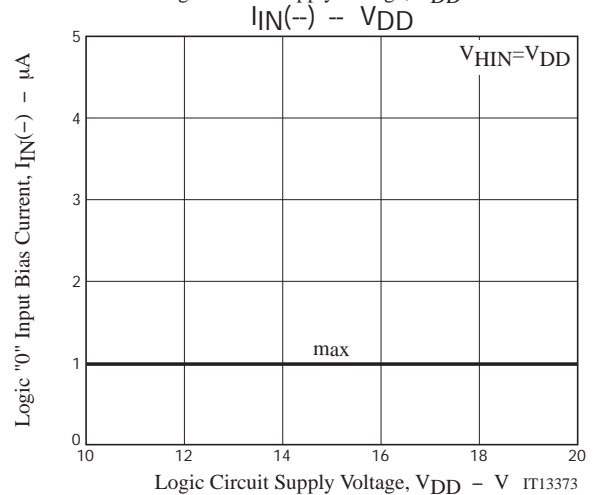
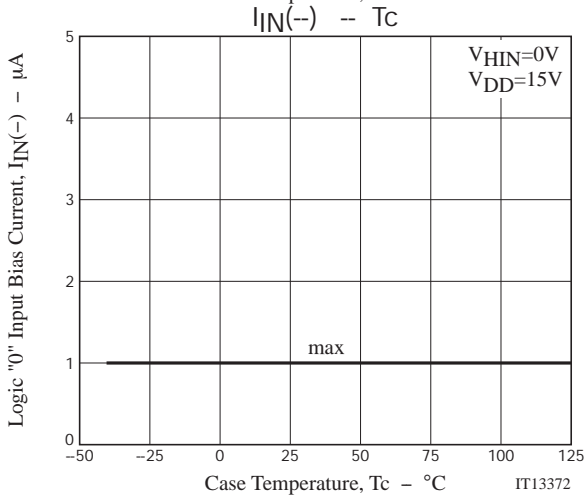
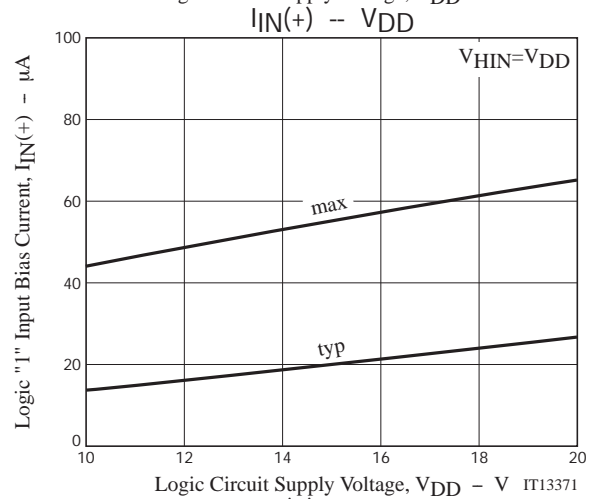
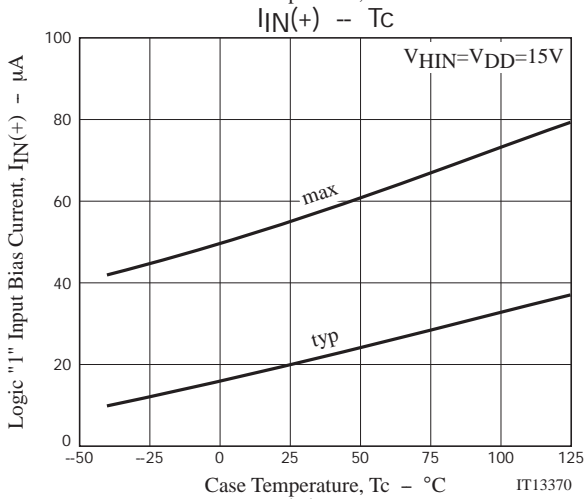
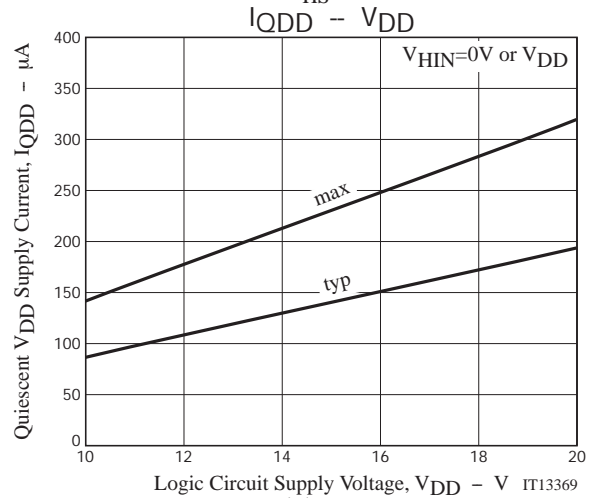
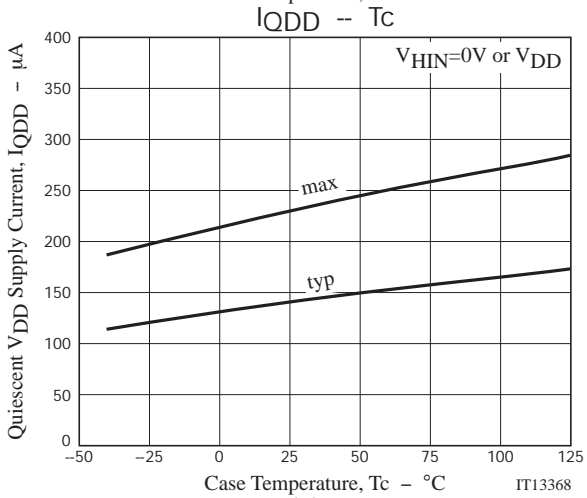
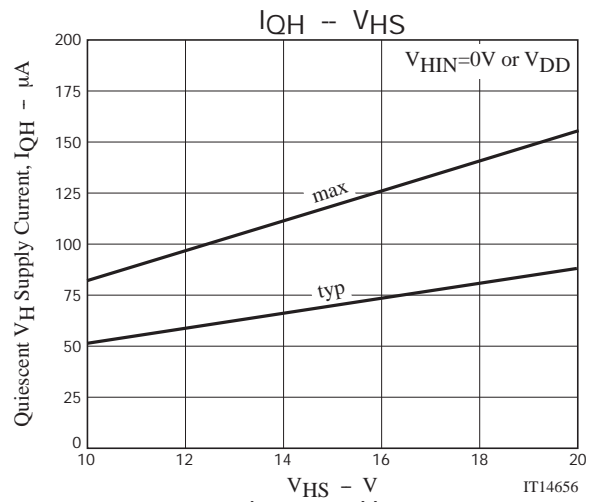
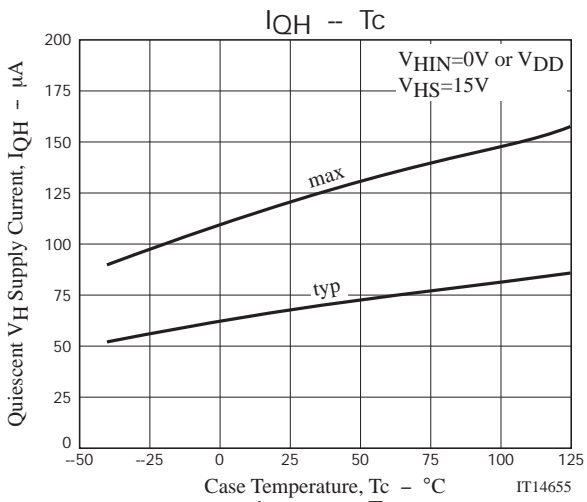
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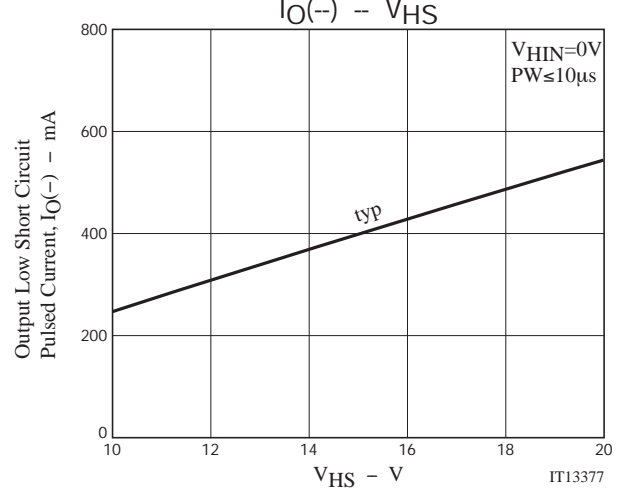
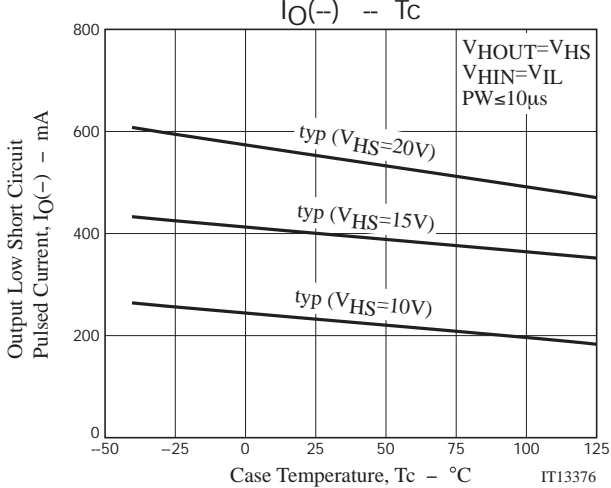
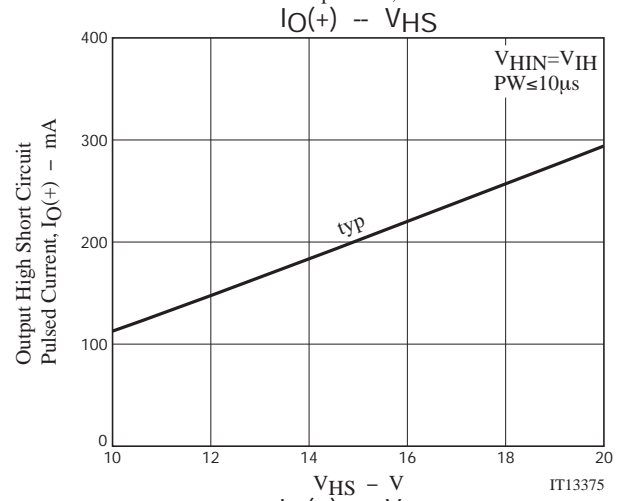
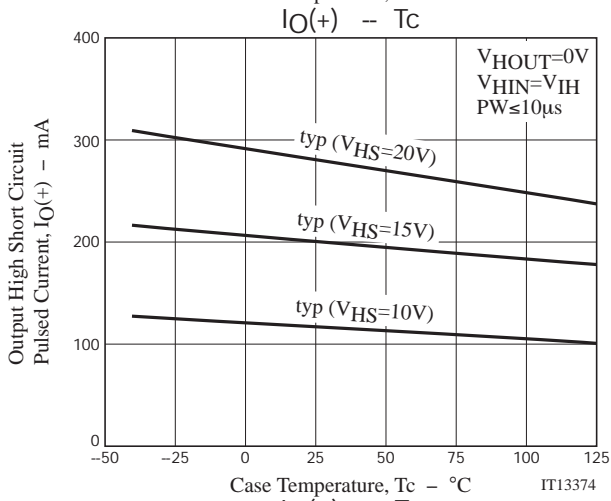
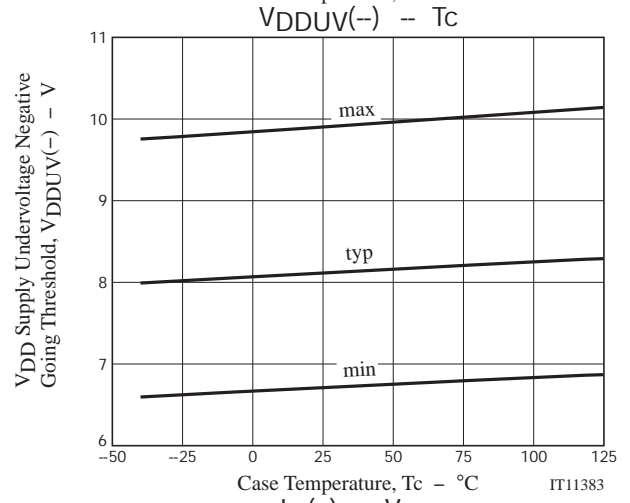
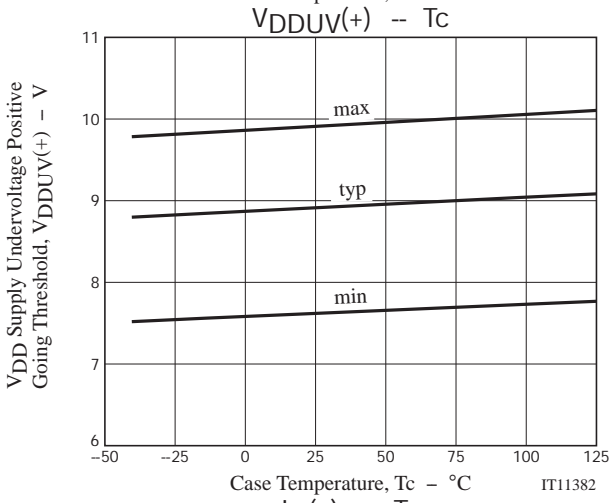
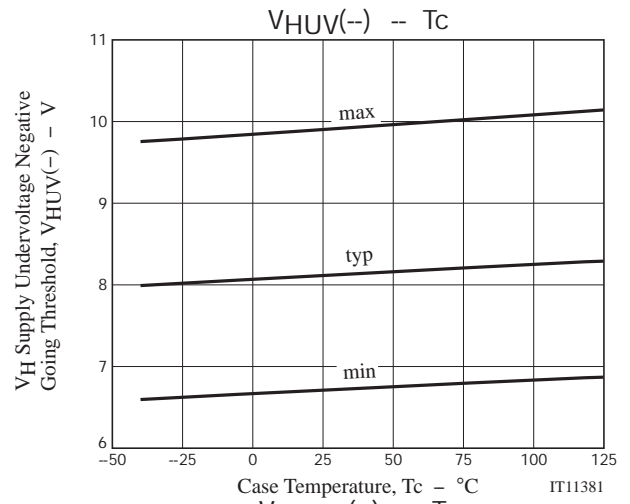
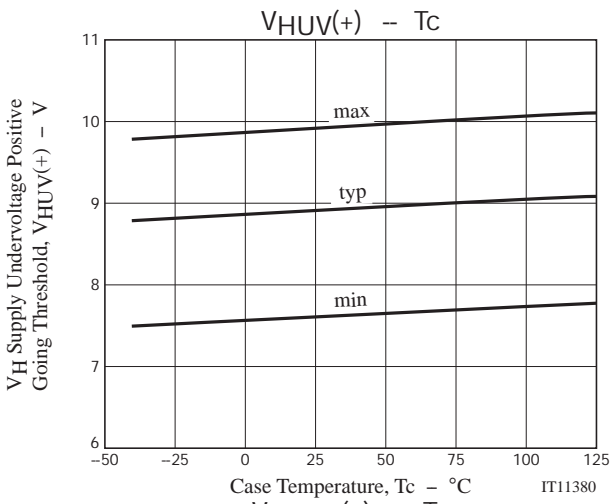
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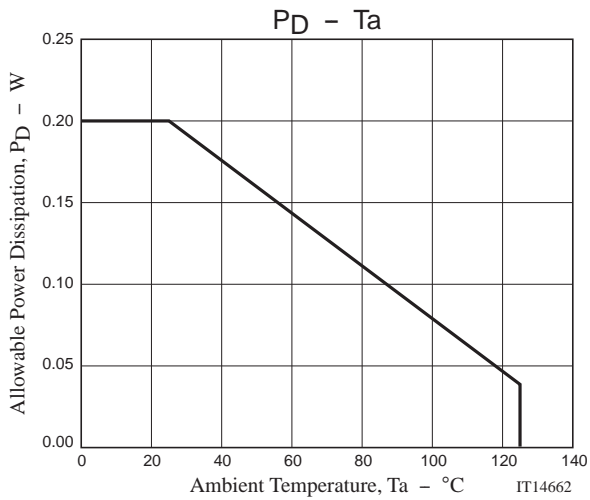


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