

3611 **3614**

T-52-17

DUAL 2-INPUT PERIPHERAL/POWER DRIVERS

These mini-DIP dual 2-input peripheral and power drivers are bipolar monolithic integrated circuits incorporating AND, NAND, OR, or NOR logic gates, and high-current switching transistors on the same chip. The two output transistors are capable of simultaneously sinking 250 mA continuously at an ambient temperature of +75°C. In the OFF state, these drivers will withstand at least 80 V. Reverse-bias burn-in and 100% high-reliability screening to MIL-STD-883, Class B are standard.

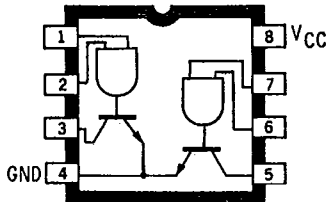
The Series UDS3610H dual drivers are ideally suited for interface between low-level or high-level logic and high-current/high-voltage loads. Typical applications include driving peripheral loads such as incandescent lamps, light-emitting diodes, memories, and heaters.

With appropriate external diode transient suppression, Series UDS3610H drivers can also be used with inductive loads such as relays, solenoids, and stepping motors.

FEATURES

- Four Logic Types
- DTL/TTL/PMOS/CMOS Compatible Inputs
- Low Input Current
- Standoff Voltage of 80 V
- Hermetically Sealed Package
- High-Reliability Screening

UDS3612H



Dwg. No. A-9793A

ABSOLUTE MAXIMUM RATINGS

Supply Voltage, V_{CC}	7.0 V
Input Voltage, V_{IN}	30 V
Output Off-State Voltage, V_{OFF}	80 V
Output On-State Sink Current, I_{ON}	600 mA
Power Dissipation, P_D (One Output)	1.0 W
(Total Package)	See Graph
Operating Temperature Range, T_A	-55°C to +125°C
Storage Temperature Range, T_S	-65°C to +150°C

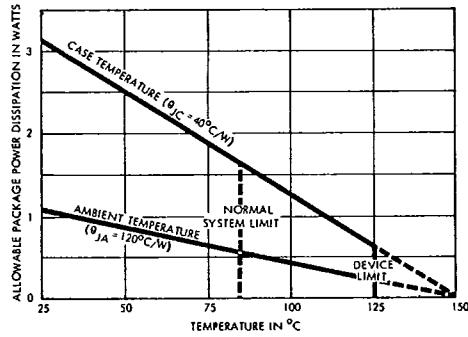
These devices are NON-COMPLIANT regarding MIL-STD-883C because of package dimensions.

Always order by complete part number:

Part Number	Description
UDS3611H883	Dual AND Driver
UDS3612H883	Dual NAND Driver
UDS3613H883	Dual OR Driver
UDS3614H883	Dual NOR Driver

SERIES 3610
DUAL 2-INPUT PERIPHERAL POWER DRIVERS

T-52-17



Dwg. No. A-10,978

RECOMMENDED OPERATING CONDITIONS

	Min.	Nom.	Max.	Units
Supply Voltage (V_{CC})	4.5	5.0	5.5	V
Operating Temperature Range	-55	+25	+125	°C
Current into any output (ON state)	—	—	300	mA

ELECTRICAL CHARACTERISTICS over operating temperature range (unless otherwise noted).

Characteristic	Symbol	Test Conditions			Limits				Notes
		V_{CC}	Driven Input	Other Input	Min.	Typ.	Max.	Units	
"1" Input Voltage	$V_{IN(1)}$	MIN	—	—	2.0	—	—	V	—
"0" Input Voltage	$V_{IN(0)}$	MIN	—	—	—	—	0.8	V	—
"0" Input Current	$I_{IN(0)}$	MAX	0.4 V	30 V	—	-50	-100	μA	2
"1" Input Current	$I_{IN(1)}$	MAX	30 V	0 V	—	—	10	μA	2
Input Clamp Voltage	V_{IK}	MIN	-12 mA	—	—	—	-1.5	V	—

SWITCHING CHARACTERISTICS at $T_A = +25^\circ\text{C}$, $V_{CC} = 5.0\text{ V}$

Characteristic	Symbol	Test Conditions	Limits			Units	Notes
			Min.	Typ.	Max.		
Turn-on Delay Time	t_{pd0}	$V_S = 70\text{ V}$, $R_L = 465\ \Omega$ (10 Watts), $C_L = 15\ \text{pF}$	—	200	500	ns	3
Turn-off Delay Time	t_{pd1}	$V_S = 70\text{ V}$, $R_L = 465\ \Omega$ (10 Watts), $C_L = 15\ \text{pF}$	—	300	750	ns	3

- NOTES: 1. Typical values are at $V_{CC} = 5.0\text{ V}$, $T_A = 25^\circ\text{C}$.
 2. Each input tested separately.
 3. Voltage values shown in the test circuit waveforms are with respect to network ground terminal.
 4. Capacitance values specified include probe and test fixture capacitance.

INPUT PULSE CHARACTERISTICS

$V_{IN(0)} = 0\text{ V}$	$t_f \leq 7\text{ ns}$	$t_p = 1\ \mu\text{s}$
$V_{IN(1)} = 3.5\text{ V}$	$t_f \leq 14\text{ ns}$	PRR = 500 kHz

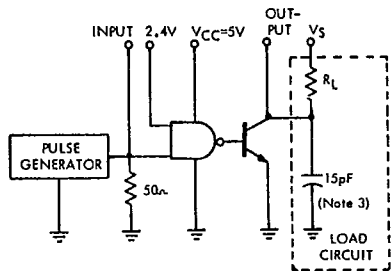
SERIES 3610
DUAL 2-INPUT PERIPHERAL/POWER DRIVERS

T-52-17

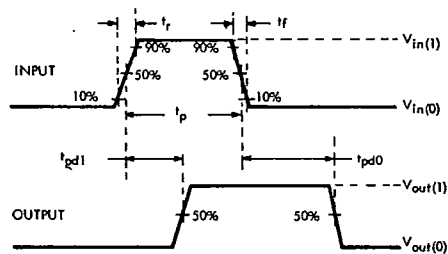
UDS3611H DUAL AND DRIVER
ELECTRICAL CHARACTERISTICS over operating temperature range (unless otherwise noted).

Characteristic	Symbol	Test Conditions					Limits				Notes
		Temp.	V _{CC}	Driven Input	Other Input	Output	Min.	Typ.	Max.	Units	
"1" Output Reverse Current	I _{OFF}	—	MIN	2.0 V	2.0 V	80 V	—	—	100	μA	—
		—	OPEN	2.0 V	2.0 V	80 V	—	—	100	μA	—
"0" Output Voltage	V _{ON}	—	MIN	0.8 V	V _{CC}	150 mA	—	0.4	0.5	V	—
		—	MIN	0.8 V	V _{CC}	300 mA	—	0.6	0.8	V	—
"1" Level Supply Current	I _{CC(1)}	NOM	MAX	5.0 V	5.0 V	—	—	8.0	12	mA	1, 2
"0" Level Supply Current	I _{CC(0)}	NOM	MAX	0 V	0 V	—	—	35	49	mA	1, 2

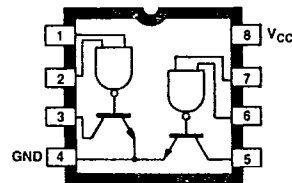
- NOTES: 1. Typical values are at V_{CC} = 5.0 V, T_A = 25°C.
 2. Per package.
 3. Capacitance values specified include probe and test fixture capacitance.



Dwg. No. A-7876D



Dwg. No. A-7628C



Dwg. No. A-9792A

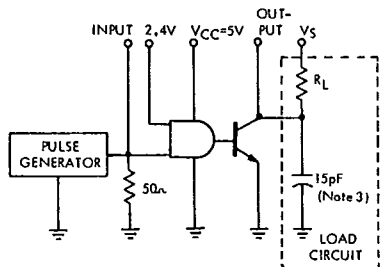
SERIES 3610
DUAL 2-INPUT PERIPHERAL/POWER DRIVERS

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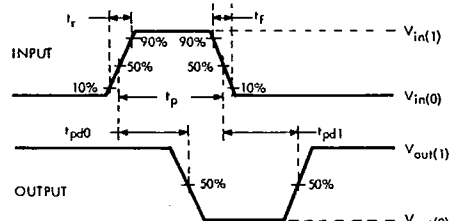
UDS3612H DUAL NAND DRIVER
ELECTRICAL CHARACTERISTICS over operating temperature range (unless otherwise noted).

Characteristic	Symbol	Test Conditions					Limits				Notes
		Temp.	V _{CC}	Driven Input	Other Input	Output	Min.	Typ.	Max.	Units	
"1" Output Reverse Current	I _{OFF}	—	MIN	0.8 V	V _{CC}	80 V	—	—	100	μA	—
		—	OPEN	0.8 V	V _{CC}	80 V	—	—	100	μA	—
"0" Output Voltage	V _{ON}	—	MIN	2.0 V	2.0 V	150 mA	—	0.4	0.5	V	—
		—	MIN	2.0 V	2.0 V	300 mA	—	0.6	0.8	V	—
"1" Level Supply Current	I _{CC(1)}	NOM	MAX	0 V	0 V	—	—	12	15	mA	1, 2
"0" Level Supply Current	I _{CC(0)}	NOM	MAX	5.0 V	5.0 V	—	—	40	53	mA	1, 2

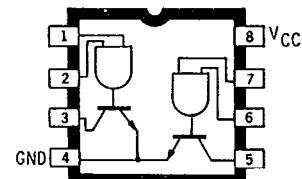
- NOTES: 1. Typical values are at V_{CC} = 5.0 V, T_A = 25°C.
 2. Per package.
 3. Capacitance values specified include probe and test fixture capacitance.



Dwg. No. A-9638



Dwg. No. A-7900A



Dwg. No. A-9793A

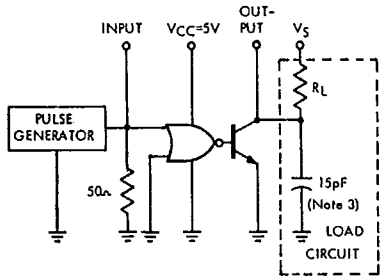
SERIES 3610
DUAL 2-INPUT PERIPHERAL POWER DRIVERS

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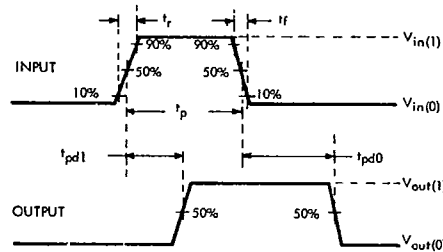
UDS3613H DUAL OR DRIVER
ELECTRICAL CHARACTERISTICS over operating temperature range (unless otherwise noted).

Characteristic	Symbol	Test Conditions					Limits			Notes	
		Temp.	V _{CC}	Driven Input	Other Input	Output	Min.	Typ.	Max.		Units
"1" Output Reverse Current	I _{OFF}	—	MIN	2.0 V	0 V	80 V	—	—	100	μA	—
		—	OPEN	2.0 V	0 V	80 V	—	—	100	μA	—
"0" Output Voltage	V _{ON}	—	MIN	0.8 V	0.8 V	150 mA	—	0.4	0.5	V	—
		—	MIN	0.8 V	0.8 V	300 mA	—	0.6	0.8	V	—
"1" Level Supply Current	I _{CC(1)}	NOM	MAX	5.0 V	5.0 V	—	—	8.0	13	mA	1, 2
"0" Level Supply Current	I _{CC(0)}	NOM	MAX	0 V	0 V	—	—	36	50	mA	1, 2

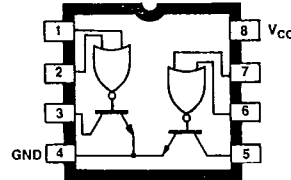
- NOTES: 1. Typical values are at V_{CC} = 5.0 V, T_A = 25°C.
 2. Per package.
 3. Capacitance values specified include probe and test fixture capacitance.



Dwg. No. A-7877B



Dwg. No. A-7628C



Dwg. No. A-9795A

SERIES 3610

DUAL 2-INPUT PERIPHERAL/POWER DRIVERS

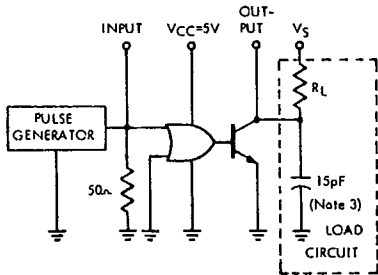
T-52-17

UDS3614H DUAL NOR DRIVER

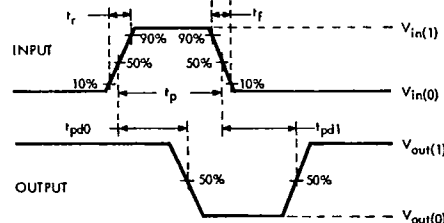
ELECTRICAL CHARACTERISTICS over operating temperature range (unless otherwise noted).

Characteristic	Symbol	Test Conditions					Limits				Notes
		Temp.	V _{CC}	Driven Input	Other Input	Output	Min.	Typ.	Max.	Units	
"1" Output Reverse Current	I _{OFF}	—	MIN	0.8 V	0.8 V	80 V	—	—	100	μA	—
		—	OPEN	0.8 V	0.8 V	80 V	—	—	100	μA	—
"0" Output Voltage	V _{ON}	—	MIN	2.0 V	0 V	150 mA	—	0.4	0.5	V	—
		—	MIN	2.0 V	0 V	300 mA	—	0.6	0.8	V	—
"1" Level Supply Current	I _{CC(1)}	NOM	MAX	0 V	0 V	—	—	12	15	mA	1, 2
"0" Level Supply Current	I _{CC(0)}	NOM	MAX	5.0 V	5.0 V	—	—	40	50	mA	1, 2

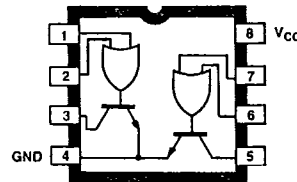
- NOTES: 1. Typical values are at V_{CC} = 5.0 V, T_A = 25°C.
 2. Per package.
 3. Capacitance values specified include probe and test fixture capacitance.



Dwg. No. A-9942



Dwg. No. A-7900A



Dwg. No. A-9794