

μ A9643

Dual TTL To MOS/CCD Driver

Interface Products

Description

The μ A9643 is a Dual Positive-Logic "AND" TTL-to-MOS Driver. The μ A9643 is a functional replacement of the SN75322 with one important exception: the two external pnp transistors are no longer needed for operation. The μ A9643 is also a functional replacement for the 75363 with the important exception that the V_{CC3} supply is not needed. The pin connections normally used for the external pnp transistors are purposely not internally connected to the μ A9643.

- SATISFIES CCD MEMORY AND DELAY LINE REQUIREMENTS
- DUAL POSITIVE-LOGIC TTL-TO-MOS DRIVER
- OPERATES FROM STANDARD BIPOLAR AND MOS SUPPLY VOLTAGES
- HIGH-SPEED SWITCHING
- TTL AND DTL COMPATIBLE INPUTS
- SEPARATE DRIVER ADDRESS INPUTS WITH COMMON STROBE
- V_{OH} AND V_{OL} COMPATIBLE WITH POPULAR MOS RAMs
- DOES NOT REQUIRE EXTERNAL pnp TRANSISTORS OR V_{CC3}
- V_{OH} MINIMUM IS $V_{CC2} - 0.5$ V

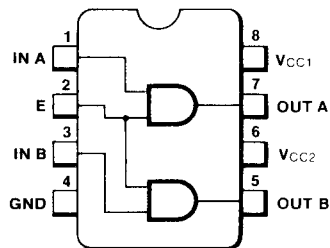
Absolute Maximum Ratings

Over operating ambient temperature range unless otherwise noted

Supply Voltage Range of V_{CC1} (Note 1)	-0.5 V to 7 V
Supply Voltage Range of V_{CC2}	-0.5 V to 15 V
Input Voltage	5.5 V
Inter-Input Voltage (Note 2)	5.5 V
Continuous Total Dissipation at $T_A = 25^\circ\text{C}$	1000 mW
Operating Temperature Range	0°C to 70°C
Storage Temperature Range	-65°C to 150°C
Pin Temperature Molded DIP (Soldering, 10 s)	260°C

Notes

1. Voltage values are with respect to network ground terminal unless otherwise noted.
2. This rating applies between any two inputs of any one of the gates.

Connection Diagram**8-Pin DIP**

(Top View)

Order Information

Type	Package	Code	Part No.
μ A9643	Molded DIP	9T	μ A9643TC

Recommended Operating Conditions

Characteristic	Min	Typ	Max	Unit
Supply Voltage, V _{CC1}	4.75	5.0	5.25	V
Supply Voltage, V _{CC2}	4.75	12	15	V
Operating Temperature, T _A	0		70	°C

Electrical Characteristics Over recommended ranges of V_{CC1}, V_{CC2} and operating ambient temperature unless otherwise noted.

Symbol	Characteristic	Condition	Min	Typ(3)	Max	Unit
V _{IH}	Input HIGH Voltage		2.0			V
V _{IL}	Input LOW Voltage				0.8	V
V _{OH}	Output HIGH Voltage	I _{OH} = -400 μA	V _{CC2} - 0.5	V _{CC2} - 0.2		V
V _{OL}	Output LOW Voltage	I _{OL} = 10 mA		0.4	0.5	V
		I _{OL} = 1.0 mA		0.2	0.3	V
I _{IN}	Input Current at Maximum Input Voltage	V _{CC1} = 5.25 V, V _{CC2} = 11.4 V V _{IN} = 5.25 V			0.1	mA
I _{IH}	Input HIGH Current	V _{IN} = 2.4 V	A Inputs		40	μA
			E Inputs		80	
I _{IL}	Input LOW Current	V _{IN} = 0.4 V	A Inputs		0.5	mA
			E Inputs		- 1.0	
I _{CC1(L)}	Supply Current from V _{CC1} All Outputs LOW	V _{CC1} = 5.25 V V _{CC2} = 12.6 V	No Load	15	19	mA
I _{CC2(L)}	Supply Current from V _{CC2} All Outputs LOW	V _{CC2} = 12.6 V	V _{CC1} = 5.25 V	5.5	9.5	mA
I _{CC1(H)}	Supply Current from V _{CC1} All Outputs HIGH	V _{CC1} = 5.5 V V _{CC2} = 13.2 V	No Load	9.0	13	mA
I _{CC2(H)}	Supply Current from V _{CC2} All Outputs HIGH	V _{CC2} = 12.6 V	V _{CC1} = 5.25 V	5.5	9.5	mA

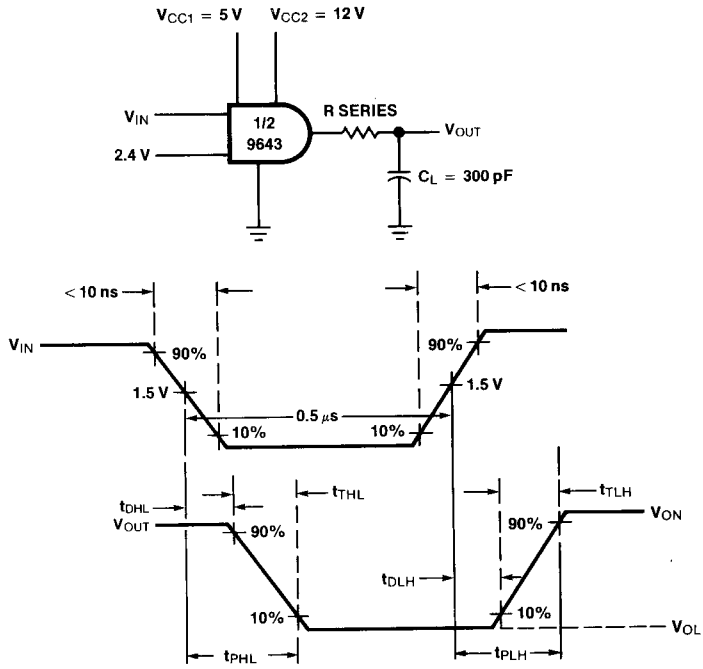
AC Characteristics V_{CC1} = 5.0 V, V_{CC2} = 12 V, T_A = 25°C

Symbol	Characteristic	Condition	Min	Typ	Max	Unit	
t _{DLH}	Delay Time	C _L = 300 pF	5.0	9.0	17	ns	
t _{DHL}	Delay Time		5.0	9.0	17	ns	
t _{TLH}	Rise Time	C _L = 300 pF	R _{SERIES} = 0	6.0	11	17	ns
t _{THL}	Fall Time			6.0	11	17	ns
t _{TLH}	Rise Time		R _{SERIES} = 10 Ω	8.0	14	20	ns
t _{THL}	Fall Time			8.0	14	20	ns
t _{PLHA} - t _{PLHB} - t _{PHLA} - t _{PHLB}	Skew between outputs A and B				0.5		ns

Note

3. All typical values are at V_{CC1} = 5.0 V, V_{CC2} = 12 V, and T_A = 25°C unless otherwise noted.

AC Test Circuit and Waveforms



The pulse generator has the following characteristics:
PRR = 1 MHz, $Z_{OUT} = 50 \Omega$
 C_L includes probe and jig capacitance.