

100126



Not Intended For New Designs

T-43-22

100126 9-Bit Backplane Driver

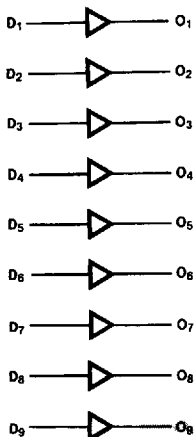
General Description

The 100126 contains nine independent, high-speed, buffer gates each with a single input and a single output. The gates are non-inverting. These buffers are useful in bus-oriented systems where minimal output loading or bus isolation is desired.

The output transition times are longer to minimize noise when used as a backplane driver. All inputs have 50 kΩ pull-down resistors.

Ordering Code: See Section 6

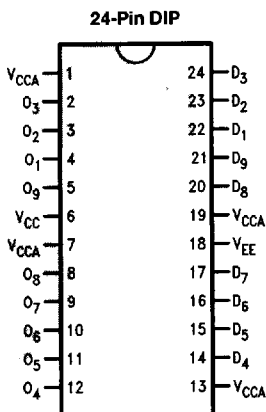
Logic Symbol



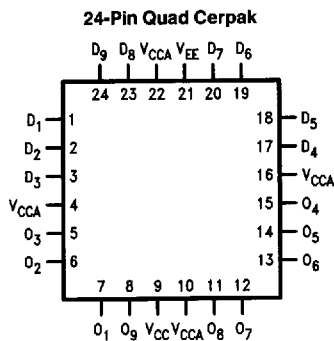
Pin Names	Description
D ₁ -D ₉	Data Inputs
O ₁ -O ₉	Data Outputs

TL/F/9850-3

Connection Diagrams



TL/F/9850-1



TL/F/9850-2

Absolute Maximum Ratings

Above which the useful life may be impaired. (Note 1)

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

Storage Temperature -65°C to +150°C
 Maximum Junction Temperature (T_J) +150°C

Case Temperature under Bias (T_C) 0°C to +85°C
 V_{EE} Pin Potential to Ground Pin -7.0V to +0.5V
 Input Voltage (DC) V_{EE} to +0.5V
 Output Current (DC Output HIGH) -50 mA
 Operating Range (Note 2) -5.7V to -4.2V

DC Electrical Characteristics

V_{EE} = -4.5V, V_{CC} = V_{CCA} = GND, T_C = 0°C to +85°C (Note 3)

Symbol	Parameter	Min	Typ	Max	Units	Conditions (Note 4)	
V _{OH}	Output HIGH Voltage	-1025	-955	-880	mV	V _{IN} = V _{IH} (Max) or V _{IL} (Min)	Loading with 50Ω to -2.0V
V _{OL}	Output LOW Voltage	-1810	-1705	-1620			
V _{OHC}	Output HIGH Voltage	-1035			mV	V _{IN} = V _{IH} (Min) or V _{IL} (Max)	Loading with 50Ω to -2.0V
V _{OLC}	Output LOW Voltage			-1610			
V _{IH}	Input HIGH Voltage	-1165		-880	mV	Guaranteed HIGH Signal for All Inputs	
V _{IL}	Input LOW Voltage	-1810		-1475	mV	Guaranteed LOW Signal for All Inputs	
I _{IL}	Input LOW Current	0.50			μA	V _{IN} = V _{IL} (Min)	

DC Electrical Characteristics

V_{EE} = -4.2V, V_{CC} = V_{CCA} = GND, T_C = 0°C to +85°C (Note 3)

Symbol	Parameter	Min	Typ	Max	Units	Conditions (Note 4)	
V _{OH}	Output HIGH Voltage	-1020		-870	mV	V _{IN} = V _{IH} (Max) or V _{IL} (Min)	Loading with 50Ω to -2.0V
V _{OL}	Output LOW Voltage	-1810		-1605			
V _{OHC}	Output HIGH Voltage	-1030			mV	V _{IN} = V _{IH} (Min) or V _{IL} (Max)	Loading with 50Ω to -2.0V
V _{OLC}	Output LOW Voltage			-1595			
V _{IH}	Input HIGH Voltage	-1150		-870	mV	Guaranteed HIGH Signal for All Inputs	
V _{IL}	Input LOW Voltage	-1810		-1475	mV	Guaranteed LOW Signal for All Inputs	
I _{IL}	Input LOW Current	0.50			μA	V _{IN} = V _{IL} (Min)	

DC Electrical Characteristics

V_{EE} = -4.8V, V_{CC} = V_{CCA} = GND, T_C = 0°C to +85°C (Note 3)

Symbol	Parameter	Min	Typ	Max	Units	Conditions (Note 4)	
V _{OH}	Output HIGH Voltage	-1035		-880	mV	V _{IN} = V _{IH} (Max) or V _{IL} (Min)	Loading with 50Ω to -2.0V
V _{OL}	Output LOW Voltage	-1830		-1620			
V _{OHC}	Output HIGH Voltage	-1045			mV	V _{IN} = V _{IH} (Min) or V _{IL} (Max)	Loading with 50Ω to -2.0V
V _{OLC}	Output LOW Voltage			-1610			
V _{IH}	Input HIGH Voltage	-1165		-880	mV	Guaranteed HIGH Signal for All Inputs	
V _{IL}	Input LOW Voltage	-1830		-1490	mV	Guaranteed LOW Signal for All Inputs	
I _{IL}	Input LOW Current	0.50			μA	V _{IN} = V _{IL} (Min)	

Note 1: Absolute maximum ratings are those values beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

Note 2: Parametric values specified at -4.2V to -4.8V.

Note 3: The specified limits represent the "worst case" value for the parameter. Since these "worst case" values normally occur at the temperature extremes, additional noise immunity and guard banding can be achieved by decreasing the allowable system operating ranges.

Note 4: Conditions for testing shown in the tables are chosen to guarantee operation under "worst case" conditions.

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DC Electrical Characteristics

$V_{EE} = -4.2V$ to $-4.8V$ unless otherwise specified, $V_{CC} = V_{CCA} = GND$, $T_C = 0^\circ C$ to $+85^\circ C$

Symbol	Parameter	Min	Typ	Max	Units	Conditions
I_{IH}	Input HIGH Current			350	μA	$V_{IN} = V_{IH} (Max)$
I_{EE}	Power Supply Current	-96	-70	-46	mA	Inputs Open

DIP AC Electrical Characteristics

$V_{EE} = -4.2V$ to $-4.8V$, $V_{CC} = V_{CCA} = GND$

Symbol	Parameter	$T_C = 0^\circ C$		$T_C = +25^\circ C$		$T_C = +85^\circ C$		Units	Conditions
		Min	Max	Min	Max	Min	Max		
t_{PLH} t_{PHL}	Propagation Delay Data to Output	1.05	2.75	1.05	2.75	1.05	2.75	ns	Figures 1 and 2
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	1.15	3.40	1.15	3.40	1.05	3.40	ns	

Cerpak AC Electrical Characteristics

$V_{EE} = -4.2V$ to $-4.8V$, $V_{CC} = V_{CCA} = GND$

Symbol	Parameter	$T_C = 0^\circ C$		$T_C = +25^\circ C$		$T_C = +85^\circ C$		Units	Conditions
		Min	Max	Min	Max	Min	Max		
t_{PLH} t_{PHL}	Propagation Delay Data to Output	1.05	2.55	1.05	2.55	1.05	2.55	ns	Figures 1 and 2
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	1.15	3.30	1.15	3.30	1.05	3.30	ns	

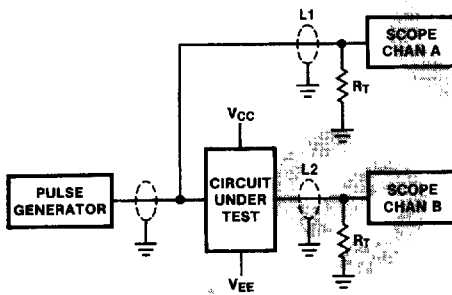


FIGURE 1. AC Test Circuit

TL/F/9850-5

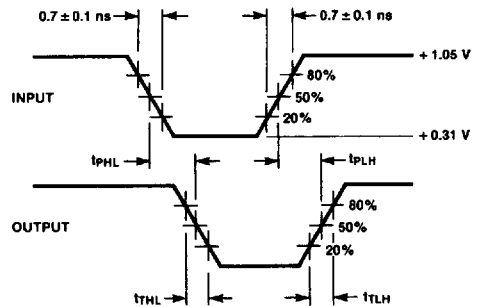


FIGURE 2. Propagation Delay and Transition Times

TL/F/9850-6

Notes:

- $V_{CC}, V_{CCA} = +2V$, $V_{EE} = -2.5V$
- L1 and L2 = equal length 50 Ω impedance lines
- $R_T = 50\Omega$ terminator internal to scope
- Decoupling 0.1 μF from GND to V_{CC} and V_{EE}
- All unused outputs are loaded with 50 Ω to GND
- C_L = Fixture and stray capacitance ≤ 3 pF