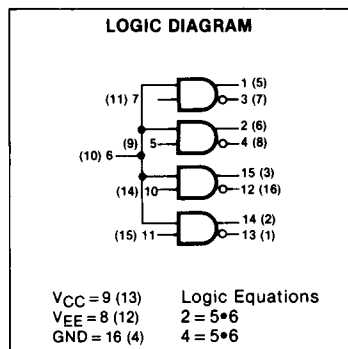


F10124 • F10524

QUAD TTL TO ECL TRANSLATOR

DESCRIPTION — The F10124 and F10524 are Quad Translators, designed to convert TTL logic levels to 10K ECL logic levels. The inputs are compatible with standard or with Schottky TTL. A Common Enable input (E_C), when LOW, holds all inverting outputs HIGH and holds all True outputs LOW. The differential outputs allow each circuit to be used as an inverting/non-inverting translator or as a differential line driver. The output levels are voltage compensated.

When the circuit is used in the differential mode, the F10124, due to its high common mode rejection, overcomes voltage gradients between the TTL and ECL ground systems.



DC CHARACTERISTICS: $V_{EE} = -5.2$ V, $V_{CC} = GND$

SYMBOL	CHARACTERISTIC	LIMITS			UNITS	T_A	CONDITIONS
		B	TYP	A			
I_{IH}	Input Current HIGH	+ 1.9		5.0	V	0 °C	Guaranteed Input Voltage HIGH for All Inputs
		+ 1.8		5.0			
		+ 1.8		5.0			
V_{IL}	Input Voltage LOW	0		+ 1.1	V	0 °C	Guaranteed Input Voltage LOW for All Inputs
		0		+ 1.1			
		0		+ 0.95			
V_{CD}	Clamp Input Voltage	- 1.5			V	25 °C	$I_{IN} = -10$ mA
V_{BD}	Input Breakdown Voltage	+ 5.5			V	25 °C	$I_{IN} = +1.0$ mA, Other Inputs $V_{IN} = GND$
I_{IH}	Input Current HIGH			50	μ A	25 °C	$V_{IN} = +2.4$ V, $E_C V_{IN} = +0.4$ V
I_{IHx}	Input Current HIGH E_C			200	μ A	25 °C	$E_C V_{IN} = +2.4$ V All Other Inputs $V_{IN} = +0.4$ V
I_{ILx}	Input Current LOW E_C	- 12.8		mA		25 °C	$E_C V_{IN} = +0.4$ V, All Other Inputs $V_{IN} = +4.0$ V
I_{IL}	Input Current LOW	- 3.2			mA	25 °C	$V_{IN} = +0.4$ V, $E_C V_{IN} = +4.0$ V
I_{EE}	Power Supply Current	- 34	- 26		mA	25 °C	Inputs and Outputs Open
I_{CCH}	Power Supply Current		+ 13	+ 16	mA	25 °C	All Inputs $V_{IN} = +4.0$ V
I_{CCL}	Power Supply Current		+ 18	+ 25	mA	25 °C	All Inputs $V_{IN} = GND$

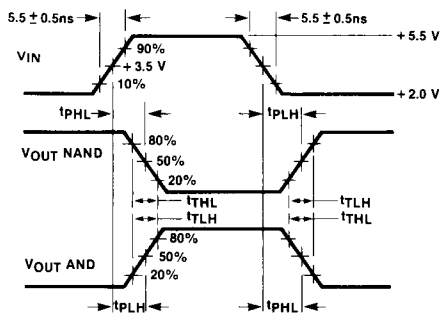
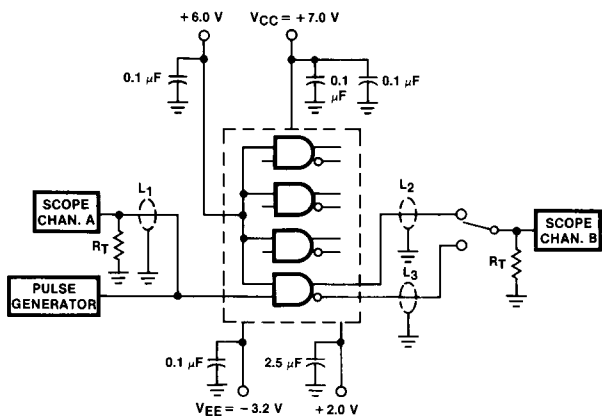
DC CHARACTERISTICS: $V_{EE} = -5.2 \text{ V}$, $V_{CC} = \text{GND}$

SYMBOL	CHARACTERISTIC	LIMITS			UNITS	T_A	CONDITIONS
		B	TYP	A			
I_{IL}	Input Current LOW	-3.2			mA	25°C	$V_{IN} = +0.4 \text{ V}$, $E_C V_{IN} = +4.0 \text{ V}$
I_{EE}	Power Supply Current	-34	-26		mA	25°C	Inputs and Outputs Open
I_{CCH}	Power Supply Current		+13	+16	mA	25°C	All Inputs $V_{IN} = +4.0 \text{ V}$
I_{CCL}	Power Supply Current		+18	+25	mA	25°C	All Inputs $V_{IN} = \text{GND}$

SWITCHING CHARACTERISTICS: $V_{EE} = -5.2 \text{ V}$, $T_A = 25^\circ\text{C}$

SYMBOL	CHARACTERISTIC	LIMITS			UNITS	CONDITIONS
		B	TYP	A		
t_{PLH} , t_{PHL}	Propagation Delay	1.5	3.0	6.0	ns	See Figure 1
t_{TLH} , t_{THL}	Output Transition Time LOW to HIGH, HIGH to LOW (20% to 80%) (80% to 20%)	1.1	2.5	3.9	ns	

SWITCHING TEST CIRCUIT AND WAVEFORMS



NOTES:

L_1 , L_2 and L_3 are equal lengths of 50Ω impedance lines.
 R_T equals 50Ω termination of scope

Fig. 1