



NJWU 371630

Input Levels		Output Levels		Delays * (usec)			Circuit Use	
Min	Max	Min	Max	Load	3 CTDL Blocks	10 CTDL Blocks		
-0.5	+0.2	+1.44	+3.1	Turn On	Min	0.21	0.25	C -CA +CO +TC +TCO
-7.4	-6	-0.74	0		Max	0.70	0.70	
-12.48	-6		-5.1	Turn Off	Min	0.19	0.28	
					Max	0.34	0.60	

\* Function of Capacitive Loading and the Number of CTDL Blocks Driven

**CTDL, U to T Converter**

The NJWU card consists of four one-way NPN emitter follower circuits. Each circuit converts a U line input to an in-phase T line and provides the current amplification required to drive branching circuits. This card differs from the CNWU card in that 075 transistors are used instead of the 083 transistors. The 075 transistors have lower specifications than the 083.

**Circuit Description**

Operation is similar to the basic emitter follower. The input voltage divider network sets the base level so that T4 is always in conduction. When the input is up, the base voltage of T4 is near +2.6v. The output at pin A is set to approximately this voltage minus the base-emitter drop of 0.3v. Decreasing the U input at pin D to -12v causes the base voltage of T4 to drop to -2.2v. The conduction through T4 decreases and the output at pin A follows the input swing minus the slight base-emitter voltage drop.

Typical circuit loading is noted above. Capacitive loading and the number of blocks driven affect the circuit delays noted in the chart above.

**Applications**

The logical functions performed by these circuits are indicated by the symbols listed in the chart labeled Circuit Use. These circuits provide current amplification of positive-going signals, serve as buffer devices to match impedances or provide isolation without inversion. Additional flexibility is provided on this card for performing the DOT functions. With the emitters of circuits 3 and 4 returned to terminal pins, connection for sharing a common emitter load is easily made by back-panel wiring. For example, in the circuits illustrated above, the CO function is performed if pin H is wired to pin A. Considering positive logic, a +U level at either pin D or E provides a +T output level. Circuits 3 and 4 also function as standard convert circuits by back-panel wiring to their respective emitter resistors.