



NHWU 371629

Input Levels		Output Levels		Delays * (usec)			Circuit Use
Min	Max	Min	Max	Load	1 CTDL Block	10 CTDL Blocks	
		Turn On	Min	0.17	0.20	C +CA -TC -TCO	
			Max.	0.52	0.53		
		Turn Off	Min	0.14	0.25		
			Max	0.26	0.56		

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

CTDL, T to U Converter

The NHWU card consists of four one-way PNP emitter follower circuits used for current amplification. Each circuit translates a T input to a U in-phase output and provides the current amplification required to drive branching circuits. This card differs from the CPWU card in that 025 transistors are used instead of the 034 transistors. The 025 transistors have lower specifications than the 034.

Circuit Description

The input voltage divider network sets the base voltage of T4 so that it is always in conduction. When the T input is up, the base level of T4 is at -2.1v. T4 is forward-biased on and clamps the output at pin A to -1.8v. The small drop (0.3v) exists between the base and the emitter of the conducting transistor. Decreasing the input to -6v causes the base voltage to drop to -8.7v. Conduction through T4 increases and the output at pin A becomes -8.4v. Typical circuit loading is noted above. Capacitive loading and the number of blocks driven affect the circuit delays given in the chart.

Application

The logical functions performed by these circuits are indicated by the symbols listed in the chart labeled Circuit Use. These circuits normally provide current amplification to negative-going signals. They are also used as buffer devices to match impedances or to provide isolation without inversion.

Additional flexibility is provided on the card for performing the NOR functions. With the emitters of circuits 3 and 4 returned to terminal pins, connections for sharing a common emitter load are easily made by back-panel wiring. For example, in the circuit illustrated the CA function is performed if pin H is wired to pin A. Considering positive logic, a +T level is required at both pins D and E to obtain a +U output level and to perform the CA functions. Circuits 3 and 4 also function as standard convert circuits by back-panel wiring to their respective emitter resistors.