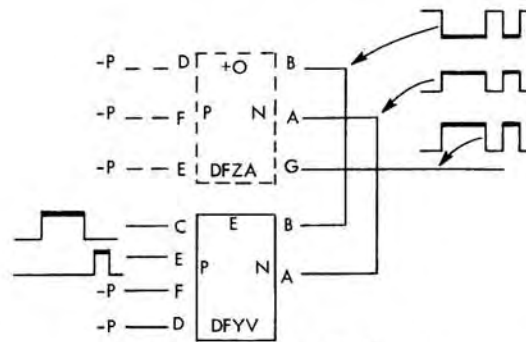
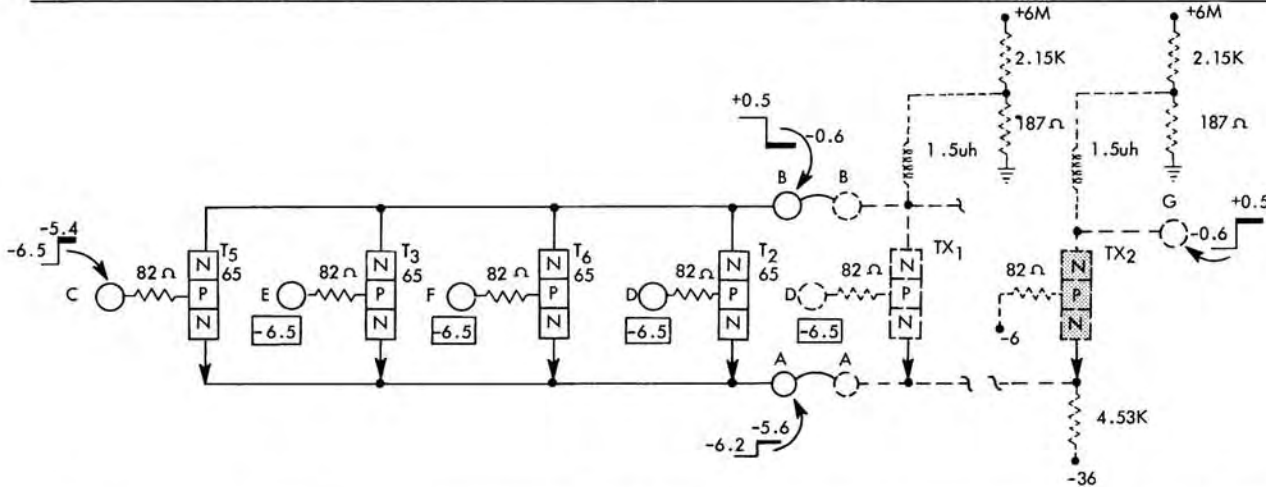


2-Way and 4-Way OR-Block Extenders



Typical Application of a 4-Way Extender



Card Code	Part No. 37----	No. of Inputs	Circuits Used as	Input Levels		In $\phi$ Output		Out $\phi$ Output		Ma. Output		musec Block Delay			
				Min.	Max.	Min.	Max.	Min.	Max.	In $\phi$	Out $\phi$	Turn On	Turn Off		
DFYV	1336	4	OR-Block Extender	-5.6	See driver for max. Output Levels	+0.4	+0.5	+0.4	+0.5	Min.	5.97	6.04	7	5	
DFYW	1344	2		-6.4		-0.4	-0.8	-0.4	-0.9		Nom.	6.56	6.69	15	10
											Max.	7.14	7.34	26	16

### Diffused Junction Two-Way and Four-Way OR-Block Extenders

This type of extender card is used in combination with an OR circuit to increase the number of input legs to the OR. As shown above, a three-way OR is increased to a seven-way OR by using the four-way extender DFYV. Had the two-way extender DFYW been used, the three-way OR would be increased to a five-way OR. The circuit above works as a seven-way OR, which means that the +OR function is satisfied when any of seven inputs is positive. As in any +OR circuit, the in-phase output (G) follows the sign of the function and is positive when any input is positive. If the -AND function is desired, the in-phase output is negative when all inputs are negative.

#### Circuit Description

The extender increases the number of inputs by connecting additional input transistors in parallel with the input transistors of the OR circuit. For example, in the circuit above, back panel wiring A-A and B-B connects T5, T3, T6 and T2 in parallel with TX1 of the OR circuit card

DFZA. When all inputs are at a -P as shown, the emitter line attempts to fall to the -P level. When the emitter of TX2 falls below -6v it becomes forward-biased and clamps to its base potential of -6v. Output G is at a -N level of -0.6v because of current flow (6.6ma) through TX2 into its coupling network. Output B is at a +N level of +0.5v because of divider current through its coupling network.

When any input rises above -6v (see input C) the emitter line follows it and TX2 is reverse-biased and cuts off. In this state, output G rises to a +N level because of divider current through its coupling network and output B falls to a -N level of -0.6v because of current flow (6.7ma) through an input transistor into its coupling network.

#### Application

Extenders are used as +OR block extenders or -AND block extenders.