



Card Code	Part No. 37----	Cplg Network		Circuit Used as		Input Levels		In \emptyset Output		Out \emptyset Output		Ma Output		usec Delay Per			
		In \emptyset	Out \emptyset			Min.	Max.	Min.	Max.	Min.	Max.	In \emptyset	Out \emptyset	Block	100uu Load	Driven Base	
ADZA	1228	Yes	Yes	+O	-A		See driver for max. Output Levels		+1.2		+1.2						
ADYZ	1229	Yes	No	+OA	-AO	-5.6		+0.4		+0.4		Min.	4.82	5.31	.03	.02	.03
ADYY	1230	No	Yes	+TO	-TA	-6.4		-0.4		-0.4		Nom.	6.0	7.6	.06	.025	.035
ADYX	1231	No	No					-2.5		-3.0		Max.	7.3	10.2*	.1	.03	.04

*Plus the number of inputs times .044ma.

Current Mode Three-Way OR

The three-way P type logic block is an OR circuit to positive logic and an AND circuit to negative logic. As an OR circuit, any positive input produces a positive in-phase output. As an AND circuit, all inputs must be negative to obtain a negative in-phase output.

The OR circuit logic block shows that any +P input produces a +N in-phase output and a -N out-of-phase output. Output A is an extender exit for extender card use.

Circuit Description

This circuit uses three transistors (T6, T2, and T3) in an OR configuration similar to diode circuitry (the base-to-emitter of each transistor is a PN diode with the N region commoned and returned to a negative supply, -12v). The emitter output of this OR circuit drives into a grounded base amplifier T4 which is referenced to -6v. In this state, all inputs are -P as shown, and the emitter line attempts to fall to the -P level. When the emitter of T4 falls below -6v, it becomes forward biased and clamps to the base potential of -6v. Output G is at a -N

level of -1.1v because of current flow (6ma) through T4 into its coupling network. Output B is at a +N level of +0.8v because of divider current through its coupling network.

When any input rises above -6v (see input D), the emitter line follows it, and T4 is reverse biased and cuts off. Output G rises to a +N level because of divider current through its coupling network, and output B falls to a -N level of -1.6v because of current flow (7.6ma) through an input transistor into its coupling network.

Application

For some applications, the circuit driven by this logic block requires a coupling network other than 360 ohm and 2.4K resistors shown. In such cases cap codes yx, yy, and yz are used as required (see chart). This circuit is also combined with an AND circuit to make up a trigger and with other OR circuit blocks to obtain NOR functions. NOR functions are obtained by connecting similar output pins together to share a common collector load.