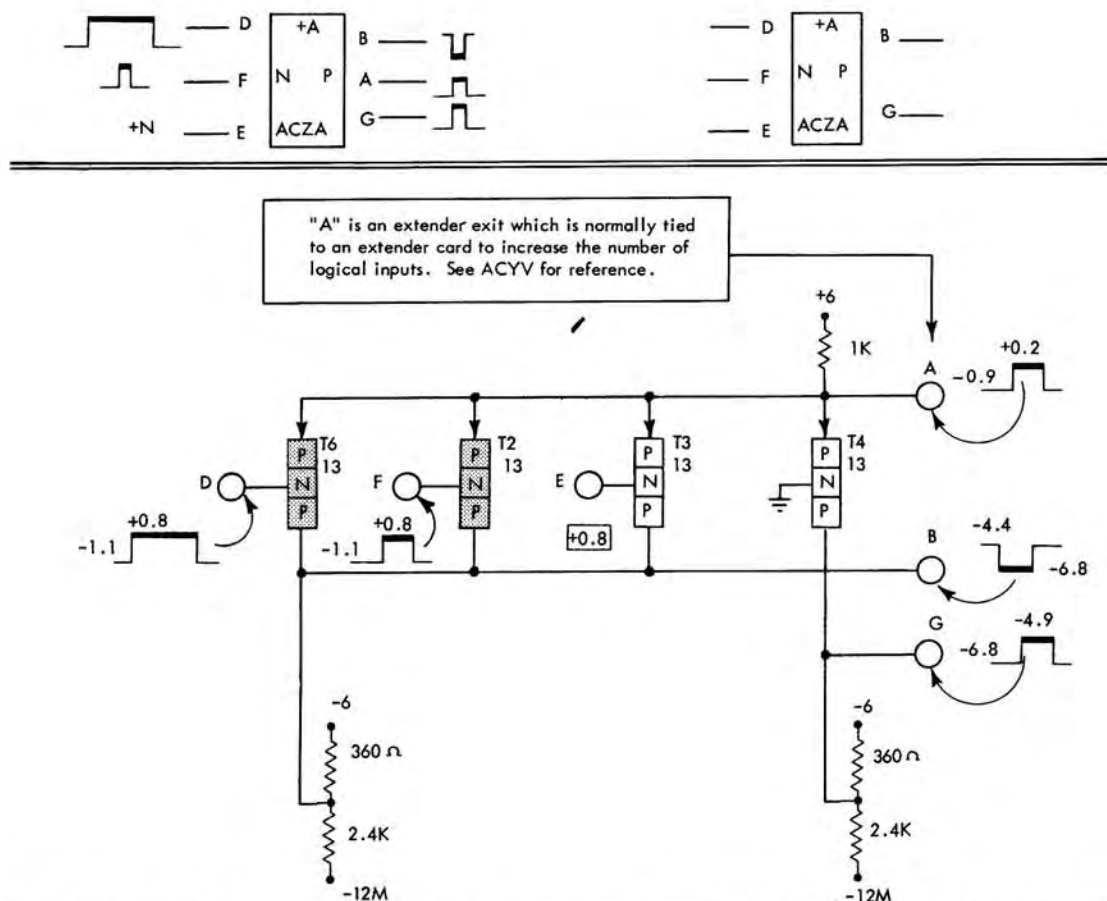


ACYX
YY
YZ
ZA



Card Code	Part No	Cplg N'work		Circuit Used as		Input Levels		In Ø Output		Out Ø Output		ma Output		usec Delay Per			
		In Ø	Out Ø			Min.	Max.	Min.	Max.	Min.	Max.	In Ø	Out Ø	Block	100uu Load	Driven Base	
ACZA	1218	Yes	Yes	+A	-O	+0.4	See driver for max Output Levels	-5.6	-3.5	-5.6	-3.0						
ACYZ	1219	Yes	No	+AO	-OA	-0.4		-6.4	-7.1	-6.4	-7.1	Min.	4.82	5.31	.03	.02	.03
ACYY	1220	No	Yes	+TA	-TO							Nom.	6.0	7.6	.06	.025	.035
ACYX	1221	No	No									Max.	7.3	10.2*	.1	.03	.04

* Plus the number of inputs times .044 ma

Current Mode Three-Way AND

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

The AND circuit logic block shows that the coincidence of three +N inputs produces a +P in-phase output and a -P 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 AND configuration similar to diode circuitry (the base-to-emitter of each transistor is an NP diode with the P region commoned and returned to a positive, 6v, supply). The emitter output of this AND circuit drives into a grounded base amplifier T4 referenced to ground. Thus, T4 is forward-biased only when its emitter is above ground. Because the transistors used have a forward emitter-to-base drop of 0.2v, any -N input will pull the emitter line

below ground and reverse-bias T4 as shown. In this state, output G is at a -P level of -6.8v because of divider current through its coupling network, and output B is at a +P level of -4.4v because of current flow (7.6ma) out of its coupling network through T6 and T2 to +6v.

When all inputs are positive, the emitter of T4 attempts to rise above ground. In so doing, it becomes forward-biased and clamps to its base potential. In this state all input transistors are cut off so output B falls to a -P level and output G rises to a +P level because T4 is conducting.

Application

For some applications, the circuit driven by this logic block requires a coupling network other than the 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 OR circuit to make up a trigger and with other AND circuit blocks to obtain dot functions. Dot functions are obtained by connecting similar output pins together to share a common collector load.