



Card Code	Part No. 37----	Cplg Network		Circuit Used as	Input Levels		In Ø Output		Out Ø Output		Ma. Output		musec Block Delay			
		In Ø	Out Ø		Min.	Max.	Min.	Max.	Min.	Max.	In Ø	Out Ø	Turn On	Turn Off		
DDZZ	1308	Yes	Yes	C	-CO	-5.6	See driver for max. Output Levels	+0.4	+0.5	+0.4	+0.5	Min.	5.97	6.04	4	4
DDZY	1309	Yes	No	CA		-6.4		-0.4	-0.8	-0.4	-0.9	Nom.	6.56	6.09	14	12
DDZX	1310	No	Yes									Max	7.14	7.34	24	20
DD--	1311	No	No													

Diffused Junction P-to-N Converter, Type B

The P-to-N converter is a single input logic block. It is fed by a P line and produces both an in-phase and out-of-phase output. Thus, for a -P line input, a -N in-phase output and a +N out-of-phase output result. It is used as follows:

1. To translate from a P to an N line.
2. To obtain an N line inversion of the input sign; i.e., a +P to a -N or a -P to a +N.
3. As a current amplifier to drive other logic blocks.

Circuit Description

This circuit configuration is that of a one-way OR circuit; i.e., the input transistor T6 has its base-to-emitter PN diode returned to a negative supply (-36v). Its emitter drives into a grounded base amplifier T4 which is referenced to -6v. With the input at the -P level as shown, 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 B is at a -N level of -0.6v because of current flow (6.6ma) through T4 into its

coupling network. Output A is at a +N level of 0.5v because of divider current through its coupling network.

When the input to T6 rises above -6v, the emitter line follows it and T4 is reverse biased and cuts off. In this state, output B rises to a +N level because of divider current through its coupling network and output A falls to a -N level of -0.6v because of current flow (6.7ma) through T6 into its coupling network. The peaking coils compensate for output capacitance, so that optimum square-wave response is realized. The 82 ohm base resistor is an oscillation suppressor which is necessary because of the inductive coupling networks used. The type B block provides a better input current source (4.53K to -36v) than the type A (909 ohms to -12v) so that transistor parameters are less critical than for type A.

Application

For some applications, the circuit driven by this logic block requires a coupling network other than the 187 ohm and 2.15K resistors shown. In such cases, cap codes zx, zy and .. are used as required (see chart). This basic circuit is also used in DOT functions as a CA and a -CO.