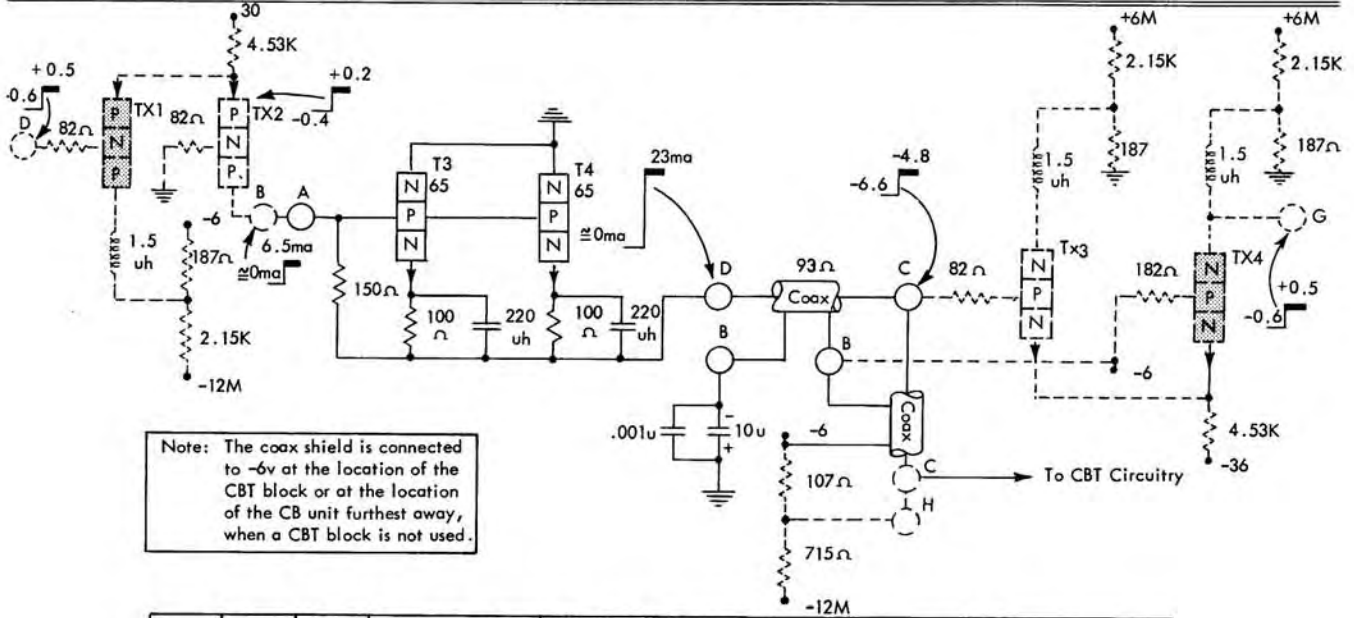


Typical Application of Line Driver



Note: The coax shield is connected to -6v at the location of the CBT block or at the location of the CB unit furthest away, when a CBT block is not used.

Card Code	Part No	Circuit used as	Output Levels		musec Block Delay (Note 1)			Input Current driven by	Output can drive into
			Min.	Max.	Turn On	Turn Off			
EG--	1375	DL	-5.6	-4.0	Min.	136	124	Type B logic block or its equivalent	Single input logic block only (max. of 5)
			-6.4	-6.8	Nom.	148	141		
					Max.	166	155		

Note 1. Delays are measured from the DL input terminal A to the output of a logic block driven by the line driver. Delay time was measured using 90 ft. of Coax which has an approximate delay of 1.25 musec per foot.

### Diffused Junction, P-to-P Line Driver

The line driver couples information between two widely separated points over a 93 coaxial line. This driver is a current amplifier which amplifies input current to levels large enough to drive long lines. It can drive up to five circuits dispersed at random distances along the line. Line levels are established by the coupling network which erminates the coaxial line. Considering these line levels, the driver develops an in-phase P line output for a P line input.

#### Circuit Description

As shown, tx2 is cut off and the input current to the line driver is zero. The emitter and base of T3 and T4 are at the same level (bias is zero) and they are cut off. The output of the coaxial is at -P level of -6.6v because of divider current through the 107 ohm, 715 ohm coupling network.

When the input signal to the converter rises, tx2 is forward-biased and 6.5ma flows out of the coupling network, through the coaxial line, 150 ohm resistor, and tx2 to +30v. The voltage drop across the 150 ohm resistor develops a forward bias for T3 and T4. Therefore, additional line current is drawn out of the coupling network and flows through T3 and T4 to ground. In this state a nominal line current of 23ma flows out of the coupling network and the load to establish a +P level of -4.8v. Base current for T3 and T4 flows through tx2. The 100 ohm emitter resistors provide degeneration so T3 and T4 tend to divide load current equally. The effects of line capacitance are reduced by the use of 220µµfd bypass capacitors. The capacitors cause T3 and T4 to be overdriven on the leading edge of the positive going signal to permit line capacitance to quickly charge to the positive level. The coupling network is located at the end of the coaxial line furthest from the driver.