



Card Code	Part No. 37----	Circuit Used As	Output Levels		musec Block Delay (Note 1)			Input Current Driven By	Output Can Drive Into
			Min.	Max.	Turn On	Turn Off			
EF--	1171	DL	+0.4	+0.8	Min.	136	124	Type B logic block or its equivalent	Single input logic block only (max. of 5)
			-0.4		Nom.	148	141		
			-2.0		Max.	160	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, N-to-N Line Driver

The line driver couples information between two widely separated points over a 93 ohm 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 coaxial line. Line levels are established by the coupling network which terminates the line. Considering these line levels, the driver develops an in-phase N line output for an N line input.

Circuit Description

As shown, tx2 is forward-biased and 6.5ma flows from -36v, through tx2, 150 ohms, the coaxial line and into the 107 ohm, 715 ohm coupling network. The voltage drop across the 150 ohm resistor develops a forward-bias for T3 and T4. Therefore the coaxial line is also supplied current from -6v through T3 and T4. In this state, a

nominal current of 23ma flows through the coaxial line into the coupling network which establishes a -N level of -1.2v. Base current for T3 and T4 is supplied by the driving current of 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. These capacitors cause T3 and T4 to be overdriven on the leading edge of the negative-going signal to permit line capacitance to quickly charge to the negative level. The coupling network is located at the end of the coaxial line furthest from the driver.

When the input signal to the converter rises, tx2 is cut off and the current fed to the line driver is reduced to zero. In this state, T3 and T4 have a zero bias and cut off. The output of the coaxial line rises to a +N level of +0.6v because of divider current through the coupling network.