



Card Code	Part No. 37----	Circuit Used as	Output Level		musec Block Delay (Note 1)		Input Current Driven By		Output Can Drive Into	
			Min.	Max.	Turn On	Turn Off	Type B Block, In Ø Output	Type A Block	Type B Block, Out Ø Output	Type B Block
DJ--	1139	DT		Min.	15	10	3	Type A Block	3	Type B Block
				Nom.	28	18	3	Single Shot		
				Max.	40	26	3	Exclusive OR		
				1	Power Driver (Note 2)					

Note 1. Delays are measured from input terminal D of the terminator to the output of the logic block driven by the terminator.
 Note 2. The terminator coupling network is not used when driving into a power driver, because the power driver has a special input network which requires a current input.

Diffused Junction P-to-N Line Terminator

This circuit provides an in-phase N-line output for a P-line input. It is designed to terminate the 93 ohm coaxial line when a single circuit termination is required. It can drive up to three logic blocks. This circuit requires that the driving source be restricted to driving this circuit only. When desired, the terminator may be used for local logic as a P-to-N line translator, in which case it may or may not be driven by coaxial line.

Circuit Description

The DT circuit uses a single transistor (T4) in a grounded-base configuration which is driven class A. In the state shown, tx2 is cut off and the input current to the terminator is zero. The emitter-to-base bias is 6v because the emitter is returned to -12v and the base to -6v. Such a bias causes a current flow of 8.7ma from -12v through T4 into the coupling network. Output G is at a -N level of -0.9v because of this current flow into the coupling network. The emitter potential of T4 is -6.2v because the emitter clamps to its base potential of -6v.

When the input to the converter rises, tx2 is forward-biased and 6.5ma flows from -12v through 665 ohms, 82.5 ohms and tx2 to +30v. This input current develops a 4.3v drop across the 665 ohms which sets the emitter bias potential at -7.7v. Thus, T4 now sees a bias of only 1.7v instead of the 6v bias it saw when the input current was zero. This reduced forward bias reduces the current through T4 to 2.2ma, which causes output G to rise to a +N level of +0.9v.

To insure a proper termination for the coaxial line, the input impedance of the line terminator should remain effectively constant. This input impedance is made up of the 82.5 ohm resistor in series with the forward emitter-to-base impedance.

Application

When this circuit drives a power driver, the coupling network shown (2.7µh, 422 ohms, 1.74K and 3.4K) is not used. In such cases output B drives directly into the special input coupling network of the power driver.