



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	Type A Block, In Ø Output	Type B Block, In Ø Output	3	Type A Block
DK--	1140	DT	-5.6	-4.4					3	Type A Block
			-6.4	-6.9	Min.	21	13	Special Usage Only of Type B Block, Out Ø Output	3	Single Shot
					Nom.	25	17	Out Ø Output	3	Exclusive OR
					Max.	31	20		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-P Line Terminator

This circuit is designed to terminate the 93 ohm coaxial line when a single circuit termination is required. It provides an in-phase P line output for a P line input. The logic block output driving into this circuit cannot drive other circuits.

#### 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 3.2v because the emitter is returned to ground while the base sees a -3.2v. Such a bias causes a current of 0.6ma to flow out of the coupling network through T4 to ground, which sets the output level of B at -6.7v. The emitter potential of T4 is -3v because the emitter clamps to its base potential of -3.2v.

When the input to the converter rises, TX2 is forward-biased and seeks to draw 6.5ma out of the terminator circuit, through TX2 to +30v. In this state the bias of T4 is

increased because the emitter attempts to rise to a more positive level than ground. This condition exists because the emitter now sees the 5.11K ground resistor paralleled by approximately 5K to +30v. With the increased bias, the current flow through T4 increases to 7ma. This current is drawn out of the coupling network and the load, flows through T4, where it divides into current flow through TX2 to +30v and current flow through the 5.11K resistor to ground. Output G rises to a +P because of the increased current flow out of the coupling network.

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 (2.7 µh, 402 ohms and 1.96K) is not used. In such cases output B drives the power driver directly.