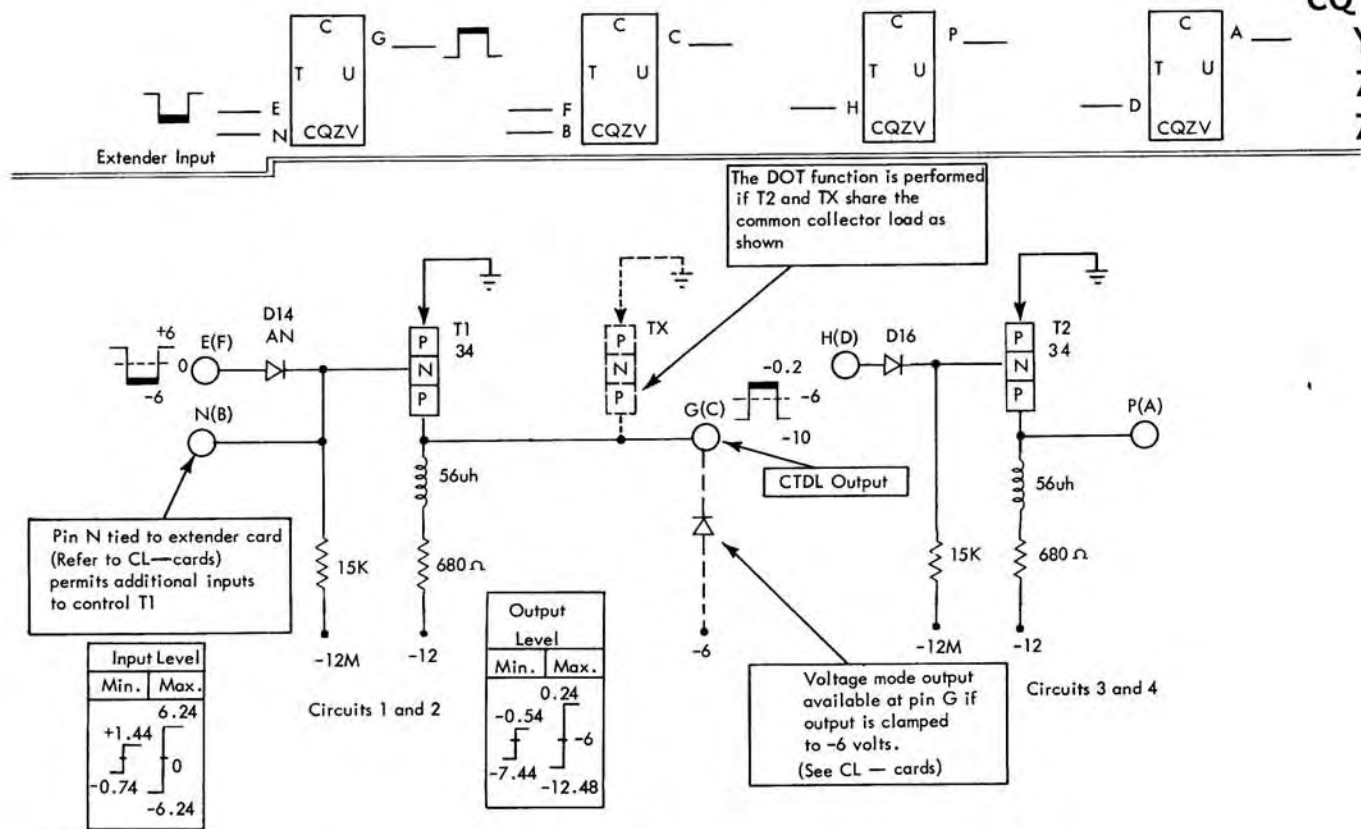


CQ --  
YG  
ZT  
ZV



Card Code	Part No 37----	Extender Input Circuit	CM Output Circuit	Collector Loading				Delays Per (usec)					Circuit Use		
				Ckt 1	Ckt 2	Ckt 3	Ckt 4	Basic Block	Parallel Collector	CM Base	Diode Input	100 uufd			
CQZV	1271	1-2	No	Yes	Yes	Yes	Yes	Turn On	Min.	.20	.00	.00	.00	.02	+C -CO +CA -TC -TCO
CQZT	1272	1-2	No	Yes	Yes	No	No		Max.	.70	.007	.015	.02	.05	
CQYG	1278	1-2	No	Yes	No	No	No	Turn Off	Min.	.06	.004	.005	.00	.03	
CQ--	1273	1-2	No	No	No	No	No		Max.	.18	.01	.02	.005	.06	

### CTDL T to U Converter

The CQZV card consists of four one-way NPN logic circuits. Each circuit on the card translates a T input to an out-of-phase U output. Internal collector loading for each circuit gives CTDL outputs at pins G, C, P and A. Extender pins N and B permit additional inputs to control circuits 1 and 2.

#### Circuit Description (Circuit 1)

A -T level is required at pin E to forward-bias T1 on. With T1 on, the output at pin G is near 0v (minus the slight drop across the forward-biased transistor). When the input signal increases to +6v, T1 is turned off. The low forward impedance of the conducting diode rapidly removes excessive minority carriers from the base region and minimizes the effect of operating the transistor in saturation. This action assures a fast response at the trailing edge of the output waveform. At this time, the transi-

tor acts as a high impedance and the output at pin H decreases to -12v.

Because of the large input signals used, variations in the input loading conditions do not affect the transistor status. The transistor is either in saturation or at cut-off. Output voltage levels are dependent on loading conditions.

#### Application

The circuit loading is noted above for the different cap connections in this group of cards. External collector loading is required for the unloaded circuits. Logical functions performed by these circuits are indicated by the symbols listed in the chart labeled Circuit Use. The DOT function is accomplished by connecting similar output pins together to share a common collector load. CTDL and voltage-mode outputs are available from these circuits as noted on the schematic.