



Pin G is tied to extender card (refer to CL- cards) permits additional inputs to control T2.

The DOT Function is performed if T2 and TX share the common load as shown.

Voltage mode output available at Pin N if output is clamped to -6 volts. (See CL- Cards)

Input Level	
Min.	Max.
-0.74	6.24
1.44	0

Output Levels			
Current Mode		CTDL	
Min.	Max.	Min.	Max.
-4.9	-3.54	-0.54	+ .24
-8.82	-12.48	-7.44	-6

Card Code	Part No. 37----	Extender Input Circuit	CM Output Circuit	Collector Loading Circuit		Delays	(usec)					Circuit Use	
				1	2		Per	Basic Block	Par'lel C'lector	CM Base	Diode Input		100 uufd
JHWV	1584	1	1	Yes	Yes	Turn Off	Min.	.145	.00	.00	.00	.02	+O +OA C
							Max.	.49	.007	.02	.02	.05	
JHVU	1585	1	1	Yes	No	Turn On	Min.	.075	.004	.005	.000	.03	-A -AO
JH--	1586	1	No	No	No		Max.	.15	.01	.02	.005	.06	

### CTDL High-Speed Three-way -AND

The JHWV card consists of two three-way PNP logic circuits. Each circuit on the card normally performs a -AND and INVERT logical function which translates a T input to an out-of-phase U output. By decreasing the value of the input base resistor used in this circuit, faster switching of the output pulse results, in comparison to the identical circuit in the cjvw group. Extender pin G permits additional inputs to control circuit 1.

#### Circuit Description (Circuit 1)

The -AND function is performed by the diode mix D33, D32, and D31 returned to -12v; the INVERT function is accomplished by the transistor circuit. Coincidence of -T levels is required at input pins D, E, and F to forward-bias T2 into saturation. With T2 on, the output at pin N nears 0v (minus the small voltage drop across the transistor). When any of the input signals increase to +6v, T2 is forced off. The low forward impedance of the conducting logic diode rapidly removes the excessive minority carriers from the base region. This action minimizes the effect of operating the transistor in saturation and assures

a fast response at the trailing edge of the output waveform. At this time, the transistor acts as a high impedance and the output at pin H decreases toward -12v. The 220 ohm resistor limits the output voltage swing at pin P and provides a usable current-mode output.

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

Internal collector 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 functions are accomplished by connecting similar output pins together to share a common collector load. CTDL, current-mode, and voltage-mode outputs are available from these circuits as noted on the schematic.