



Card Code	Part No 37----	Extender Input Circuit	CM Output Circuit	Collector Loading Circuit			Delays (usec)	Circuit Use
				1	2	3		
JGWW	1580	No	1	Yes	Yes	Yes	Turn On Min. .155 Max. .48	-A +O
JGVW	1581	No	1	Yes	Yes	No	Turn Off Min. .07 Max. .15	-AO
JGVV	1582	No	1	Yes	No	No	Par'lel C'lector .004	+OA
JG--	1583	No	No	No	No	No	CM Base .020	C

CTDL High-Speed Two-Way -AND

The jgww card consists of three two-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 cgww group.

Circuit Description (Circuit 1)

The -AND function is performed by the diode mix D33 and D32 returned to -12v, and the INVERT function is accomplished by the transistor circuit. Coincidence of -T levels is required at input pins B and C to forward-bias T1 into saturation. With T1 on, the output at pin H nears 0v (minus the small voltage drop across the transistor). When either of the input signals increases to +6v, T1 is turned 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 to -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.