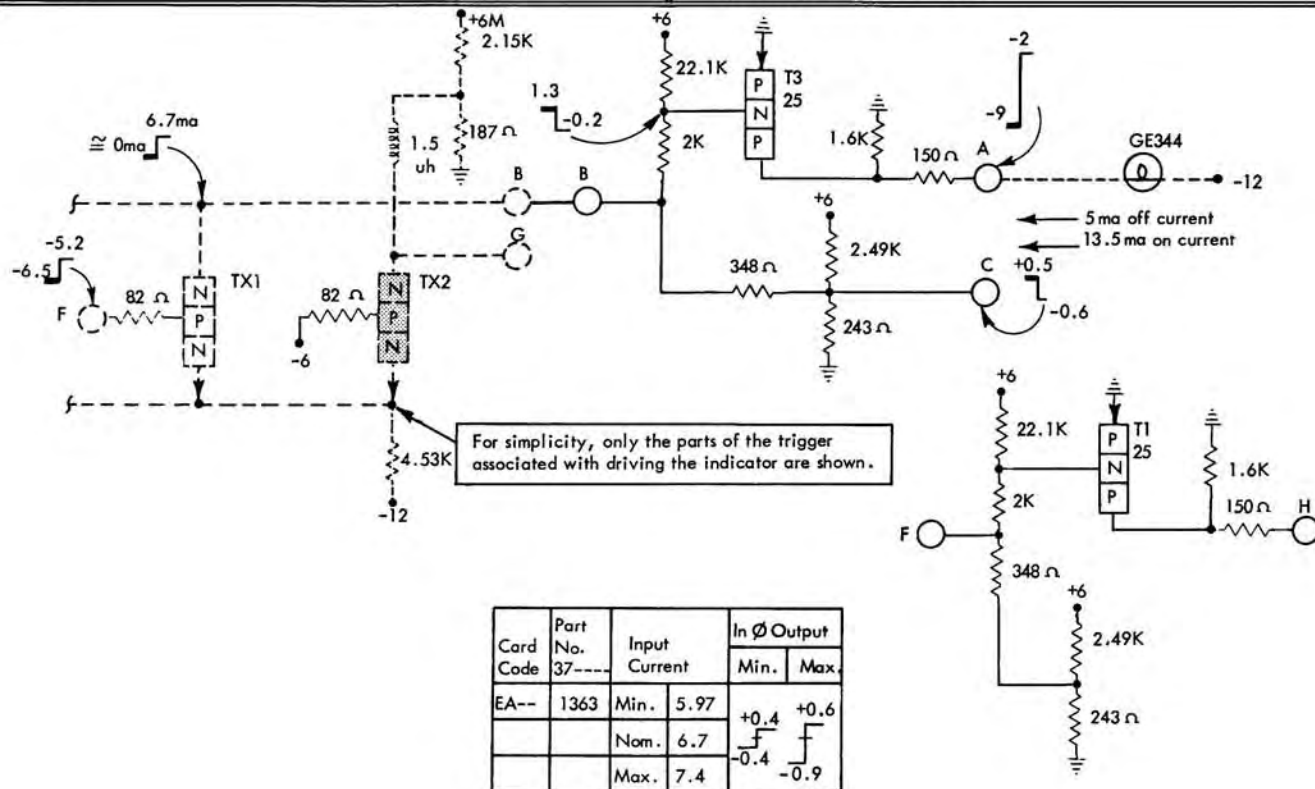


Typical Application of Indicator



Card Code	Part No. 37----	Input Current	In \emptyset Output	
			Min.	Max.
EA--	1363	Min.	5.97	+0.6
		Nom.	6.7	+0.4
		Max.	7.4	-0.4
				-0.9

Diffused Junction, -N Line Indicator

The EA -- card consists of three indicator circuits. Each circuit requires a -N line input to turn on the indicator lamp connected to the out-of-phase output. Two of these circuits also provide an in-phase N line output capable of driving two N type logic blocks. Note that the indicator above with no in-phase output has no N line output designation within the logic block. The N line notation is missing because the indicator signal levels (-2v to -9v) are not N levels but are special purpose levels.

Circuit Description

In the state shown, tx1 is reverse-biased and input current to the indicator is zero. Divider current through the 243 ohm, 2.49K coupling network establishes output C at a +N level of +0.5v. Current flow out of this network through the 22.1K to +6v sets the base level of T3 at +1.3v and T3 is reverse-biased. The 5ma current flow from -12v through the lamp and 1.6K to ground is not

enough to light the lamp. This current flow sets output A at a -9v level.

When the input to tx1 rises, tx1 is forward-biased and 6.7ma flows from -12v through tx1 into the indicator where it divides into two components of current. One component flows into the coupling network which establishes output C at a -N level of -0.6v; while the other flows through the 2K and 22.1K to +6v which drives the base of T3 below ground. T3 is forward-biased and the 13.5ma which flows from -12v through the lamp, 150 ohm resistor, and T3 to ground is enough to light the lamp. The voltage drop across the 150 ohm and T3 is 2v so output A is at a -2v level.

The third indicator is identical to the one described except that an N line output is not provided. This output is missing only because all eight locations on the card for input and output line connections (terminals A-H) have already been assigned.