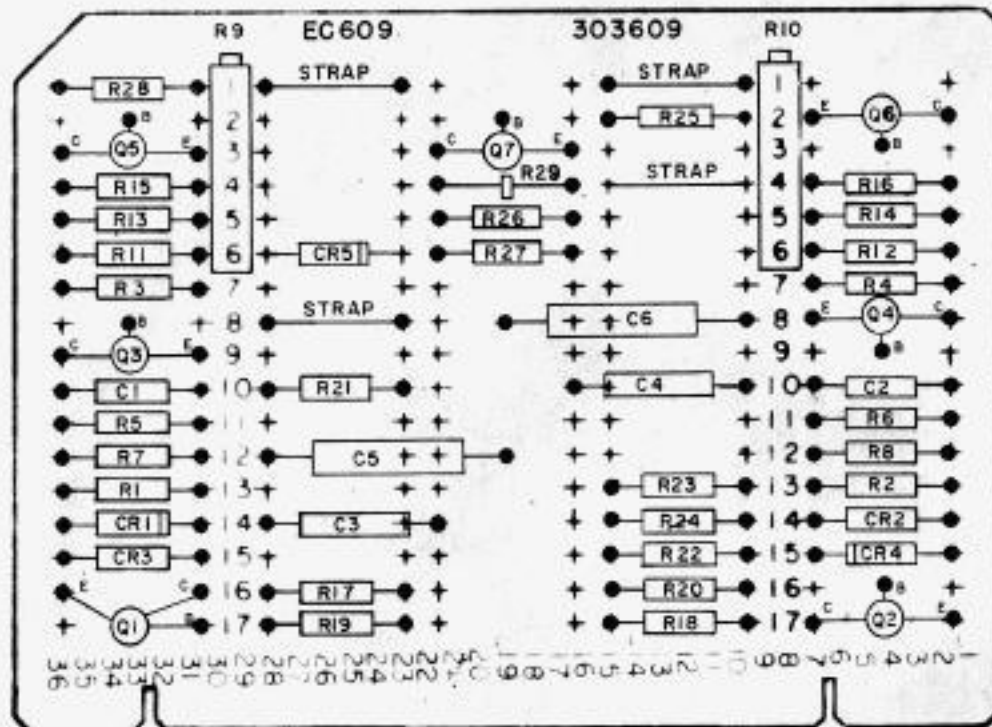


EC 609  
303609

VARIABLE SIGNAL DELAYS (2)

CIRCUIT BOARD EC 609

REVISIONS



300014

NOTE REFER TO 300014 FOR SPECIAL DRILLINGS  
REFER TO 6050 WD FOR BASIC MARKING INFORMATION

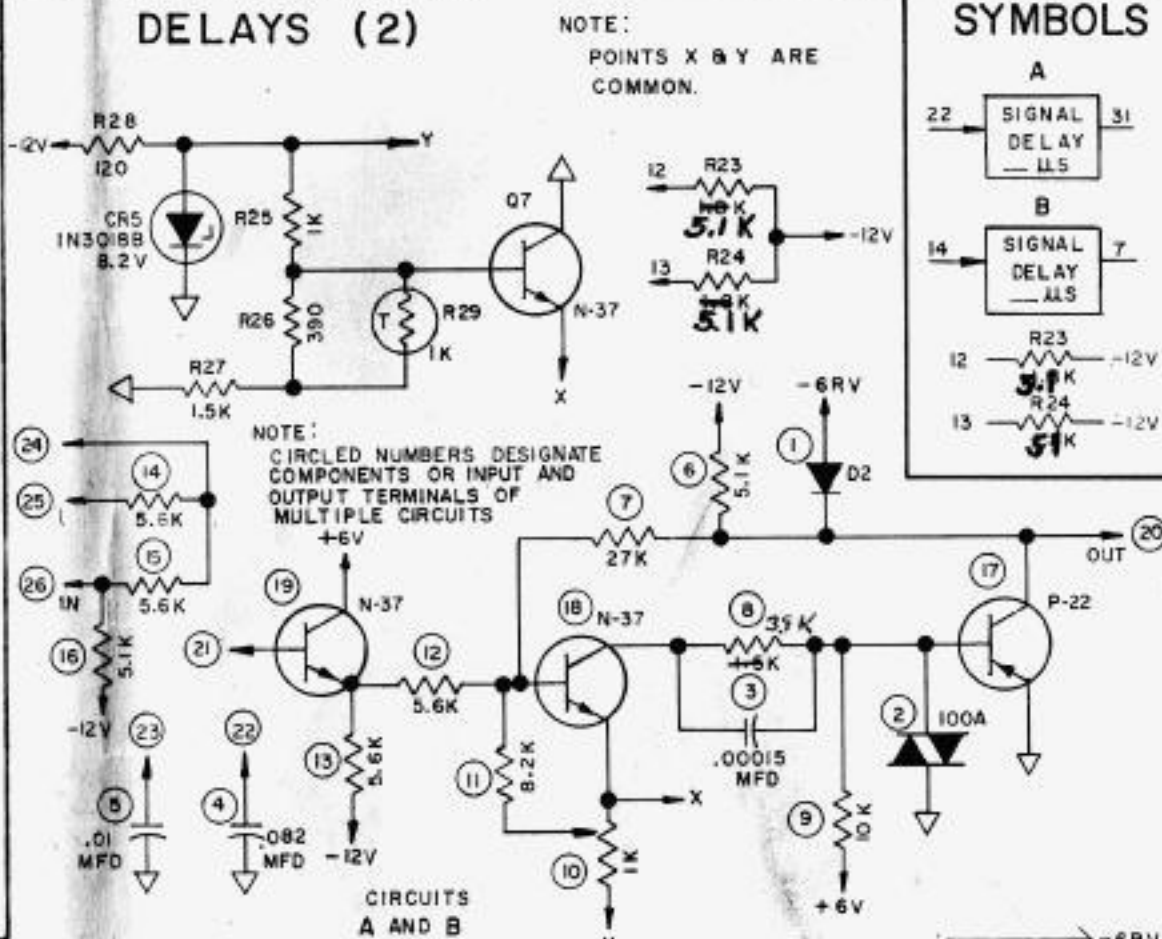


THIS CARD CONSISTS OF TWO VARIABLE (25  $\mu$ S TO 800  $\mu$ S) SIGNAL DELAY CIRCUITS. THE INPUT SIGNAL LEVELS VARY BETWEEN 0 AND -6V. THE OUTPUT SIGNAL IS IDENTICAL TO THE INPUT SIGNAL WITH THE LEADING AND LAGGING EDGES OF THE SIGNAL DELAYED BY THE SAME AMOUNT.

EACH CIRCUIT CONSISTS OF A VARIABLE RC INTEGRATOR (DETERMINED BY EXTERNAL STRAPS SHOWN AT RIGHT), AN EMITTER FOLLOWER, AND A REGENERATIVE SLICING AMPLIFIER. THE TURN-ON VOLTAGE OF THE AMPLIFIER IS DETERMINED BY THE SETTING OF POTENTIOMETER (10), TOGETHER WITH THE VOLTAGE DIVIDER ACTION OF RESISTORS (11) AND (12). THE TURN-OFF OF THE AMPLIFIER IS DETERMINED BY FEEDBACK CURRENT THROUGH RESISTOR (7) AND CURRENT BLEED-OFF THROUGH RESISTORS (1) AND (2).

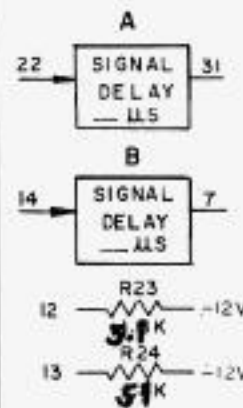
RESISTORS R25, R26, R28, ZENER DIODE CR5 TRANSISTOR Q7, AND THERMISTOR R29 STABILIZE THE CIRCUIT FOR VOLTAGE AND TEMPERATURE VARIATIONS.

POTENTIOMETER (10) ADJUSTS THE DELAY FOR SYMMETRY. WHEN SYMMETRY IS NOT DESIRED, (10) CAN BE USED TO ADJUST THE DELAY TO VALUES OTHER THAN THE NOMINAL VALUES SHOWN ON TABLE AT RIGHT. RESISTORS R23 AND R24 ARE OPTIONAL COLLECTOR LOADS USED TO PROVIDE LOWER OUTPUT IMPEDANCE AT OUTPUT TERMINAL.



NOTE:  
POINTS X & Y ARE COMMON.

SYMBOLS



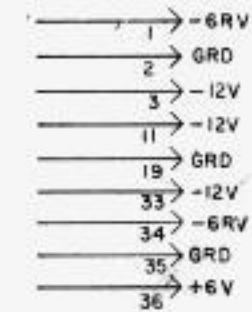
NOTE:  
CIRCLED NUMBERS DESIGNATE COMPONENTS OR INPUT AND OUTPUT TERMINALS OF MULTIPLE CIRCUITS

TABLE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	CR1	CR3	C1	C3	C5	R1	R3	R5	R7	R9	R11	R13	R15	R17
B	CR2	CR4	C2	C4	C6	R2	R4	R6	R8	R10	R12	R14	R16	R18

	15	16	17	18	19	20	21	22	23	24	25	26
A	R19	R21	Q1	Q3	Q5	31	29	25	23	27	21	22
B	R20	R22	Q2	Q4	Q6	7	8	16	17	9	15	14



EXTERNAL STRAPS REQUIRED FOR VARIOUS SIGNAL DELAYS

DELAY	CIRCUIT A	CIRCUIT B
25 $\mu$ S	21 22 , 23 27 29	14 15 , 8 9 17
50 $\mu$ S	23 27 29	8 9 17
100 $\mu$ S	21 23 29	8 15 17 →
200 $\mu$ S	21 22 , 25 27 29	14 15 , 8 9 16
400 $\mu$ S	25 27 29	8 9 16 →
800 $\mu$ S	21 25 29	8 15 16

NOTE: EXTERNAL CAPACITANCE CAN BE ADDED FOR LONGER TIME DELAYS

