MOBILE RADIO

INSTRUCTIONS
FOR
Porta•Mobile II™
AND GATE/CALL INDICATOR KIT 19A130967G1-G4
(OPTIONS 2115, 2116, 2128 & 2129)

TABLE OF CONTENTS

DESCRIPTION

Porta•Mobile II™ AND GATE/CALL INDICATOR Kit 19A130967G1-G4 is used with PM II receivers equipped with a Type 90 or Type 99 decoder and a Channel Guard decoder. The receiver will not open until the Type 90 or Type 99 decoder has been disabled and the Channel Guard tone is being received. The Call Indicator LED will light when the Type 90 or Type 99 decoder has been disabled by an incoming tone and will remain on until the decoder is reset. The application of each group is shown in the following chart:

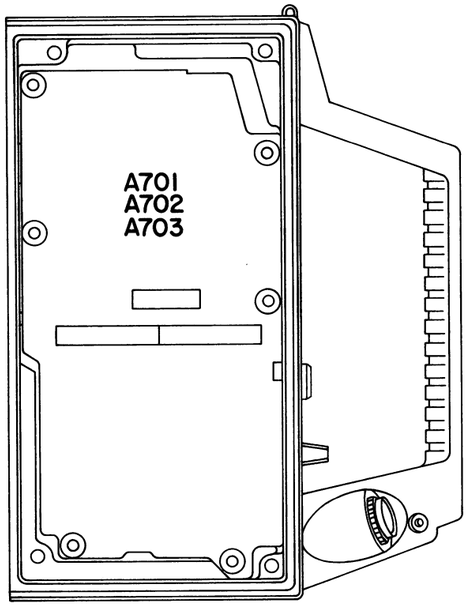
PART NUMBER	APPLICATION
19A130967G1	AND GATE with Type 99 (Includes Call Indicator)
19A130967G2	CALL INDICATOR with Type 99
19A130967G3	AND GATE with Type 90 (Includes Call Indicator)
19A130967G4	CALL INDICATOR with Type 90

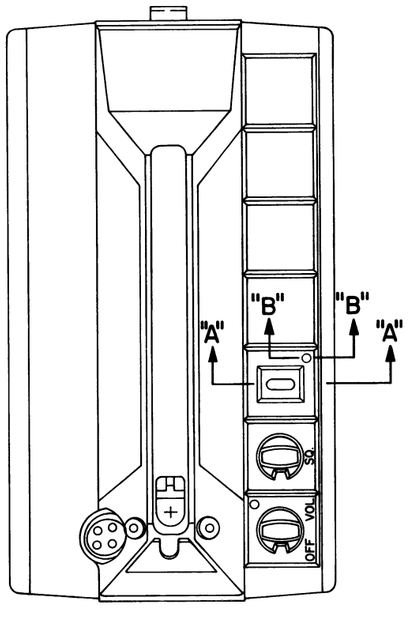
The AND GATE/CALL INDICATOR Kit mounts on the Porta•Mobile II™ system board and the Installation and Interconnection Diagrams contain the necessary information to install an AND GATE/CALL INDICATOR Kit (See Table of Contents).

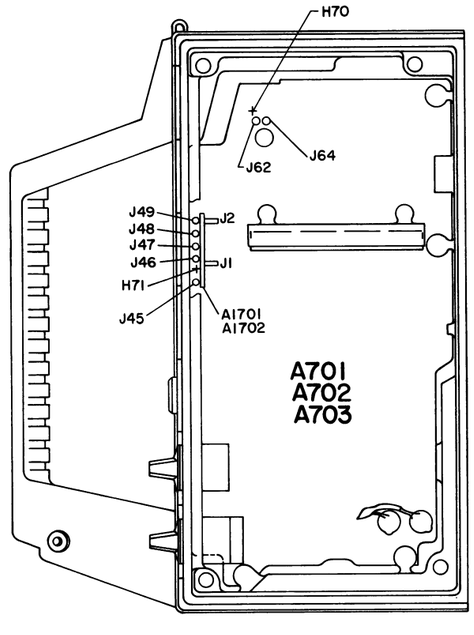
CIRCUIT ANALYSIS

The switched output from the Type 90 or Type 99 decoder is connected to Pin 1 of AND GATE/CALL INDICATOR board 19B226818G1. When either the Type 90 or Type 99 decoder is disabled by an incoming tone, the switched output is applied to the base of transistors Q1 and Q2. The switched output on the base of Q1 causes Q1 to conduct and CALL INDICATOR LED CR1701 to light. LED CR1701 will remain on until the decoder is reset.

The switched output from the Channel Guard decoder is connected to Pin 2 of the AND GATE/CALL INDICATOR board and is applied to the base of Q2. With the switched output of both the Type 90 or Type 99 and Channel Guard decoders simultaneously applied to the base of Q2, Q2 will conduct. Transistor Q2 conducting causes PNP transistor Q3 to conduct. Transistor Q3 conducting applies a switched output through Pin 4 to the Audio PA of the receiver opening the receiver to monitor the incoming call modulated with the proper Channel Guard tone. The receiver will remain open to receive calls modulated with the proper Channel Guard tone until the Type 90 or Type 99 decoder is reset.



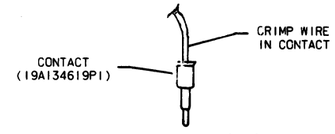




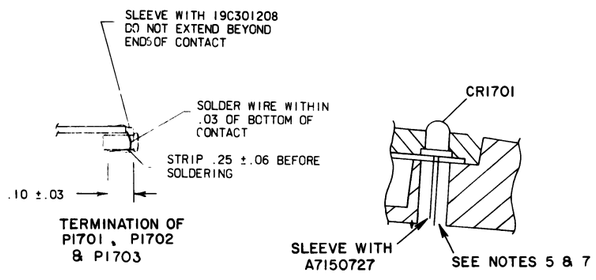
(1) THESE INSTRUCTIONS COVER THE INSTALLATION OF OPTION
T99 PL19A130967G1 AND GATE
(2) T99 PL19A130967G2 CALL INDICATOR
(3) T90 PL19A130967G3 AND GATE
(4) T90 PL19A130967G4 CALL INDICATOR

CONNECTIONS CHART			
FROM	TO	WIRE COLOR	TERMINATE
CR1701	A1701,A1702-J1	T28-W-GA	P1701
CR1701	A1701,A1702-J2	T28-V	P1702
A701,A702,A703-H71	A701,A702,A703-J64	T28-O	P1703

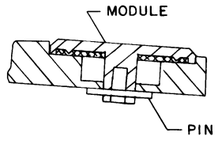
* USED WITH AND GATE ONLY
(TERMINATE "FROM" END PER DETAIL 'C')



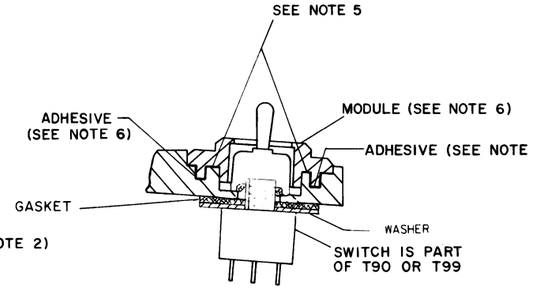
DETAIL 'C'



SECTION "B-B"
(ENLARGED)



SECTION "A-A"
BEFORE SWITCH ASM
(PARTIAL)



SECTION "A-A"
AFTER ASM OF MODULE
(PARTIAL)

INSTRUCTIONS:

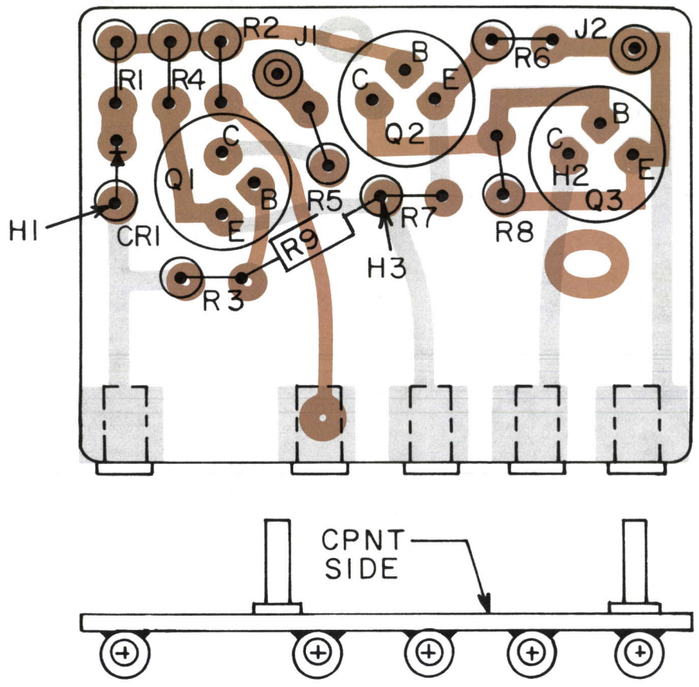
1. REMOVE FRONT AND BACK COVERS IF PRESENT.
2. REMOVE PIN, GASKET AND DUMMY MODULE AT POSITION SHOWN AND DISCARD.
3. ON AND GATE OPTION ONLY CUT RUN BETWEEN J70 & J62 ON SOLDER SIDE AS SHOWN.
4. ASSEMBLE AND GATE BD A1701 OR CALL INDICATOR BD A1702 TO J45 J49 AS SHOWN.
5. ASSEMBLE CR1701 TO MODULE.
6. REMOVE RTV FROM HOLE IN CASE. THEN ASSEMBLE WASHER, GASKET TO S703. SEAL AND MODULE PART OF KIT PL19A130972G1 IN POSITION SHOWN. FILL KEYING SLOT IN THREADED SWITCH BUSHING WITH RTV PER P15F-EA106P1 OR P2. DISCARD LOCKING RING THAT IS PART OF SWITCH. APPLY ADHESIVE TO CAVITIES AS SHOWN PER C.S.D. PROCESS P15F-EA106P4 AND ASSEMBLE MODULE TO CASE. OVERFLOW OF ADHESIVE BETWEEN MODULE AND CASE SURFACES IS PERMISSIBLE. PARTS TO BE CLAMPED TOGETHER DURING CURING CYCLE.
7. SLEEVE LEADS OF CR1701 AND RESEAL HOLE IN CASE AND OPEN END OF SLEEVING THAT THE LEADS PASS THRU PER P7A-EA100P5 OR P15F-EA106P1 OR P2.
8. MAKE CONNECTIONS PER CHART ABOVE.
9. SOLDER ALL ELECTRICAL CONNECTIONS.
10. ASSEMBLE FRONT AND REAR COVERS IF REQUIRED.
11.
12. FOR CONTROL WIRE CLAMPING INFORMATION REFER TO DRAWING 19D423115 NOTE 7.

(19D423748, Rev. 7)

INSTALLATION INSTRUCTION

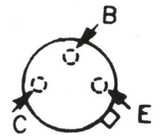
AND GATE/CALL INDICATOR

Issue 2



(19B232122, Rev. 0)
(19C321553, Sh. 2, Rev. 0)
(19C321553, Sh. 3, Rev. 0)

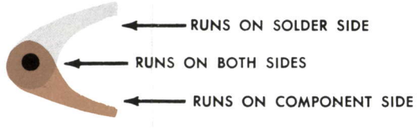
LEAD IDENTIFICATION
FOR Q1 - Q3



TRIANGULAR

TOP VIEW

NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

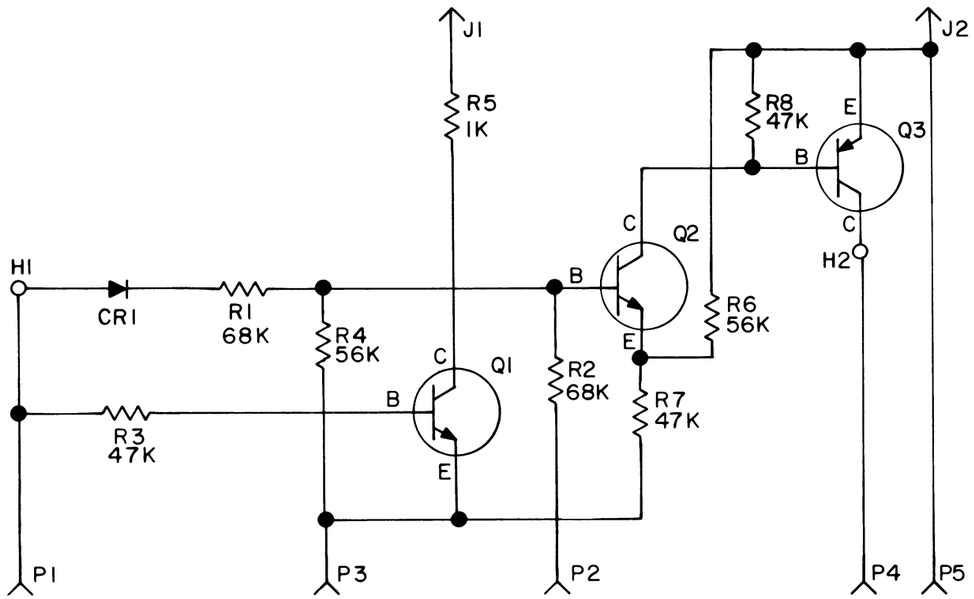


OUTLINE DIAGRAM

AND GATE/CALL INDICATOR

4 Issue 1

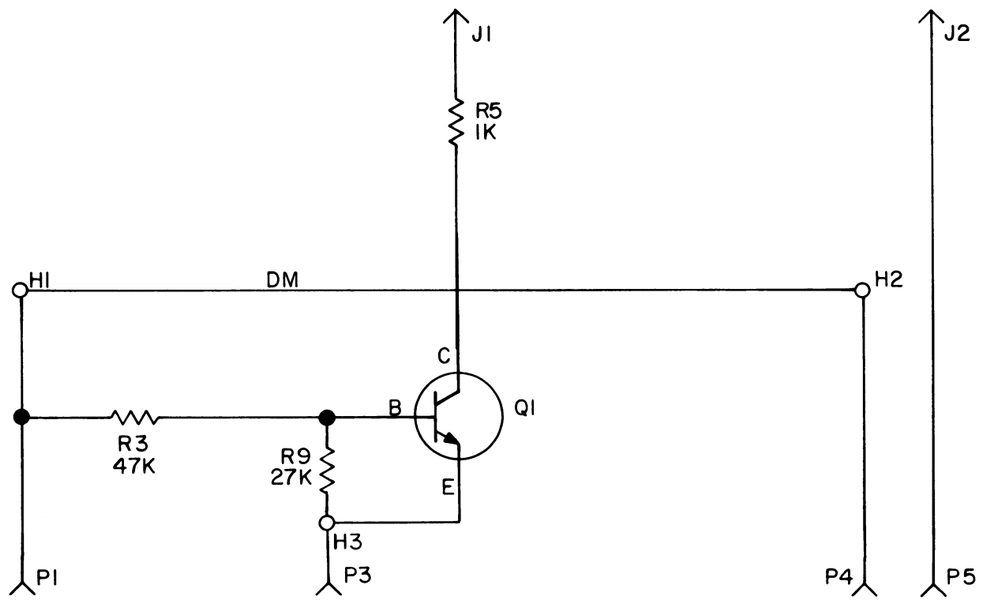
ANDGATE



(19B226821, Rev. 1)

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

CALL INDICATOR



(19B226822, Rev. 2)

ALL RESISTORS ARE 1/8 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF=MICROFARADS.

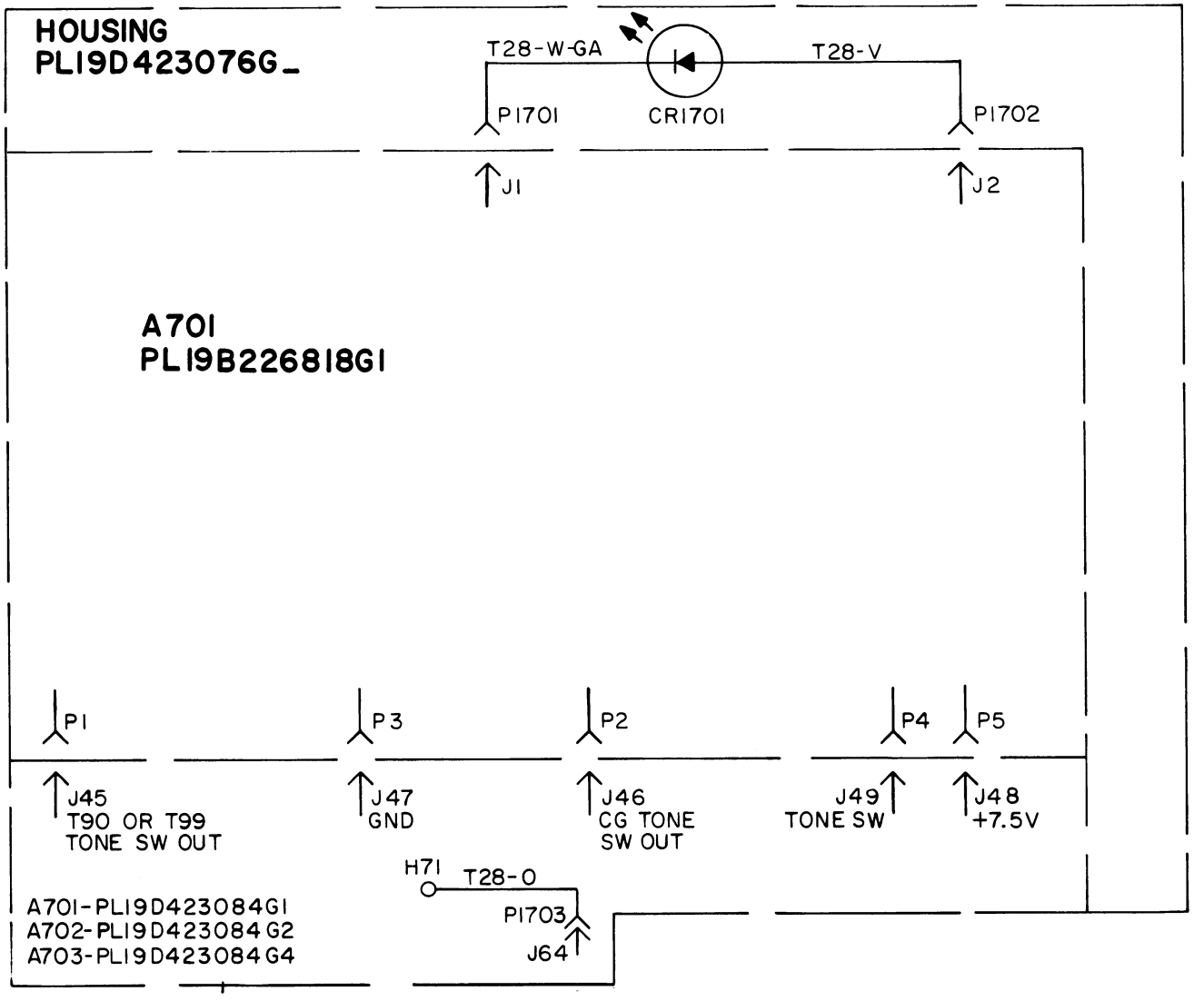
PARTS LIST

LBI-30418

AND GATE/CALL INDICATOR KIT
19A130967G1 T99 AND GATE
19A130967G2 T99 CALL INDICATOR
19A130967G3 T90 AND GATE
19A130967G4 T90 CALL INDICATOR

SYMBOL	GE PART NO.	DESCRIPTION
A1701		COMPONENT BOARD 19B226818G1 AND GATE 19B226818G2 CALL INDICATOR
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1	19A115250P1	Silicon.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1 and J2	19A116366P2	Contact, electrical: sim to Cambion 460-3233-01-03.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1 thru P5	19A115834P4	Contact, electrical: sim to AMP 2-332070-9.
		- - - - - - - - - - TRANSISTORS - - - - - - - -
Q1 and Q2	19A129184P1	Silicon, NPN.
Q3	19A129187P1	Silicon, PNP.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 and R2	3R151P683J	Composition: 68,000 ohms ±5%, 1/8 w.
R3	3R151P473J	Composition: 47,000 ohms ±5%, 1/8 w.
R4	3R151P563J	Composition: 56,000 ohms ±5%, 1/8 w.
R5	3R151P102J	Composition: 1000 ohms ±5%, 1/8 w.
R6	3R151P563J	Composition: 56,000 ohms ±5%, 1/8 w.
R7 and R8	3R151P473J	Composition: 47,000 ohms ±5%, 1/8 w.
R9	3R151P273J	Composition: 27,000 ohms ±5%, 1/8 w.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1701	19A130470G3	Diode, optoelectronic: red light emitting.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1701 thru P1703	19A115834P4	Contact, electrical: sim to AMP 2-332070-9.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	NP276504P1	Nameplate, T99.
	NP276504P3	Nameplate, T90.
	19B226358G19	Lens, T99.
	19B226358G20	Lens, T90.
	4035306P11	Insulator, fiber. (Q1-Q3).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

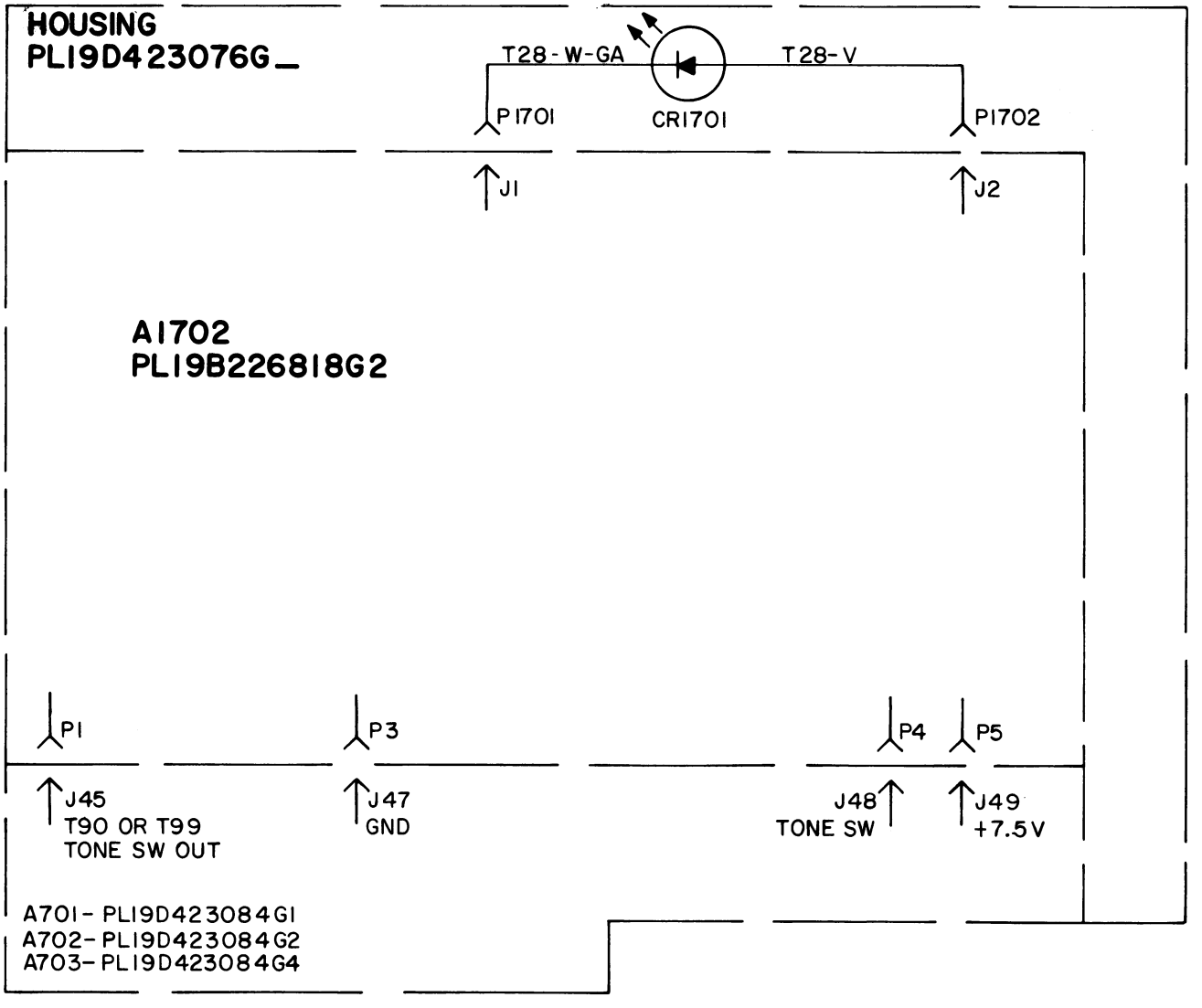


(19B227296, Rev. 2)

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

INTERCONNECTION DIAGRAM

AND GATE



IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

(19B227297, Rev. 1)

INTERCONNECTION DIAGRAM

CALL INDICATOR