

REVISIONS						
ZONE	SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD
#	X2	SEE SHEET 2 OF 2 REVISION "X2"	12/2/63	2	JL	AK
#	X3	SEE SHEET 2 OF 2 REVISION "X3"	12-3-63	3	JP	MP
#	X4	SEE SHEET 2 OF 2 REVISION "X4"	12/19/63	4	JP	MP
	O	ORIGINAL RELEASE FOR PRODUCTION	5/12/64	0	A.M.	Q
C2	A	NOTE 4 - .050-.070 WIDE WAS .070 WIDE				
B7,9	A	1/16 R (4 CORNERS ADDED) NOTE ADDED TO A3168-1	7-22-64	11871	JP	Q
-	B	SEE SHEET 2 OF 2 REV. "B"	8-25-64	12050	JP	Q
-	C	SEE SHEET 2 OF 2 REV. "C"	10-30-64	12791	JP	Q
-	D	SEE SHEET 2 OF 2 REV. "D"	11-17-64	12946	JP	Q
-	E	SEE SHEET 2 OF 2 REV. "E"	12-16-64	13086	HCA	Q
-	F	SEE SHEET 2 OF 2 REV. "E"	12-22-64	17560	WHD	Q

ORIGINAL ARTWORK TO BE REMOVED FROM PROTECTIVE POCKETS WHEN PHOTOGRAPHING.

NOTE: DOUBLE POCKETS
3 INDIVIDUAL NEGATIVES
PRINTED CIRCUITRY
MARKING
PADS

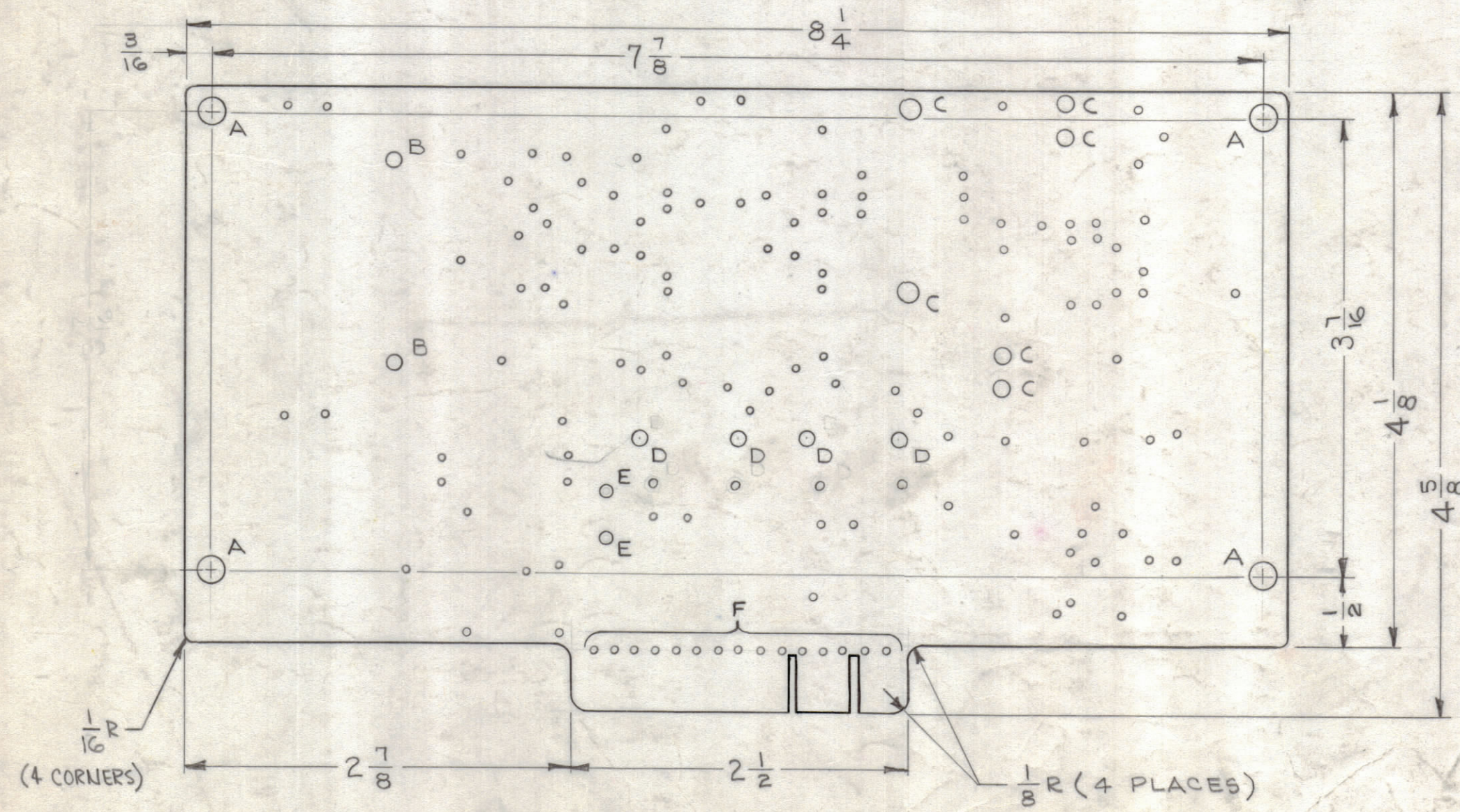
HOLE # PAD SPECIFICATIONS			
HOLE	DIA.	PAD DIA.	REQ.
UNMARKED	.052	.130	116
A	.196	.250	4
B	.140	NONE	2
C	.120	.130	6
D	.136	.250	4
E	.099	.130	2
F	.040	CONTACT FINGERS	15

NOTES: TO BE MANUFACTURED IN ACCORDANCE WITH TMC SPEC. S-735 UNLESS OTHERWISE SPECIFIED.

- MATERIAL - G-10 EPOXY GLASS LAMINATE 3/32 THICK, 2 OUNCE COPPER CLAD BOTH SIDES.
- ALL BOARDS WILL BE DOUBLE-SIDED. WHENEVER A PAD APPEARS ON THE PRINTED CIRCUIT SIDE, A SIMILAR SIZE AND SHAPE SHALL APPEAR ON THE COMPONENT SIDE IN EXACT REGISTER. (EXCEPT WHERE AN EXCEPTION IS NOTED).
- FINGER CONTACTS SHALL ALSO APPEAR ON THE COMPONENT SIDE OF BOARD AND SHALL BE CONNECTED WITH A .040 DIA. PLATED-THRU HOLE LOCATED IN THE CENTER OF EACH FINGER CONTACT .050" AWAY FROM THE MAIN BODY OF BOARD.
- THE PRINTED CIRCUIT BOARDS SHALL BE KEYED WITH SLOTS .050-.070" WIDE & .400" HIGH LOCATED BETWEEN FINGER CONTACTS 10 & 11, 13 & 14 AS VIEWED FROM COMPONENT SIDE OF BOARD.
- (A) ALL HOLES EXCEPT "A" MTG. HOLES ARE TO BE PLATED-THRU WITH MINIMUM COPPER PLATING THICKNESS OF .001.
(B) PLATE .0003 TO .0005 NICKEL & 25 MILLIONTHS MINIMUM OF GOLD ALL ETCHED SURFACES AND PLATED-THRU HOLES.

THE ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR PHOTOGRAPHING (SCALE 1:1)

ETCHING, PRINTED CIRCUIT (A 3168-1)



MACHINING (A 3168-2)
DO NOT SCALE DRAWING WORK TO DIMENSIONS

NOTES

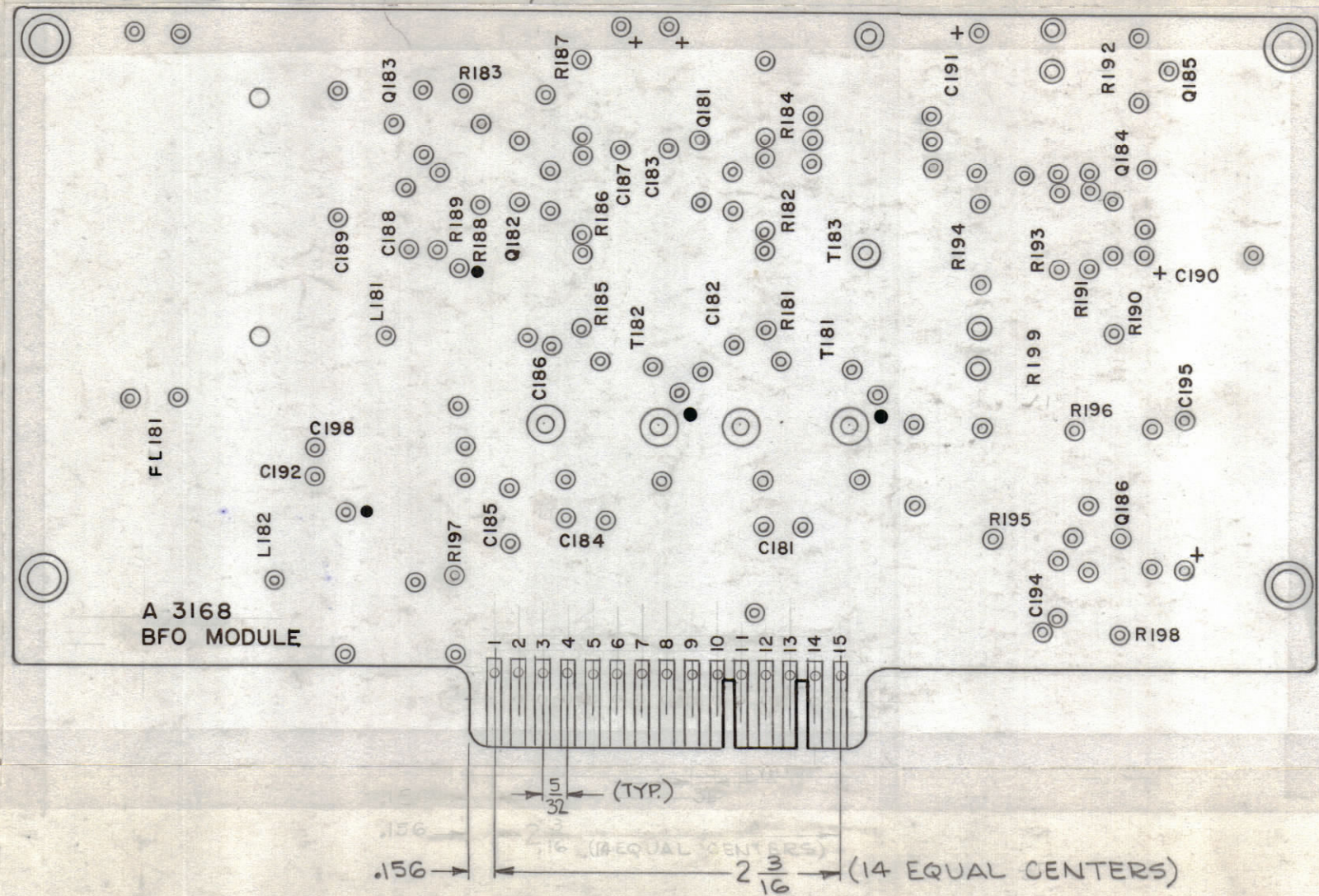
1	VLR-1	AX-424
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE	CODE	
1:1	A	
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REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
M. GELLMAN LIST OF MATERIAL				
MATERIAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
SEE NOTE #1		TITLE PRINTED CIRCUIT BOARD, ASSEMBLY (BFO MODULE)		
FINISH		DRAWN G. Jones		
SEE NOTE #1		DATE 9-13-63		
		CHECKED @		
		DATE 5-8-64		
		ELECT. DES. MCA		
		DATE 5-5-64		
		MECH. DES. MCA		
		DATE 5-5-64		
		SHEET 1 OF 2		

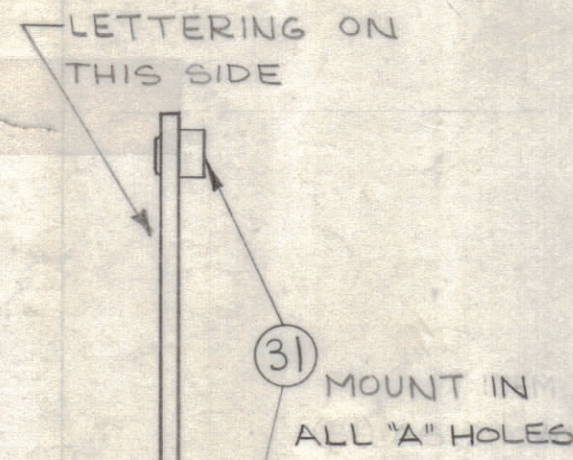
A 3168 F

- UNLESS OTHERWISE SPECIFIED -

- NOTE
 1- ALL LETTERING TO BE 5/64 HIGH, BLACK GOTHIC; ALL DOTS TO BE 1/16 DIA, .010 STROKE.
 2- MARKING PROCESS: AS PER TMC SPEC. S-727.
 3- LETTERING TO BE PLACED ± 1/64 AS SHOWN.



MARKING (A 3168-3) A-3168



SUB-ASS'Y (A 3168-4)

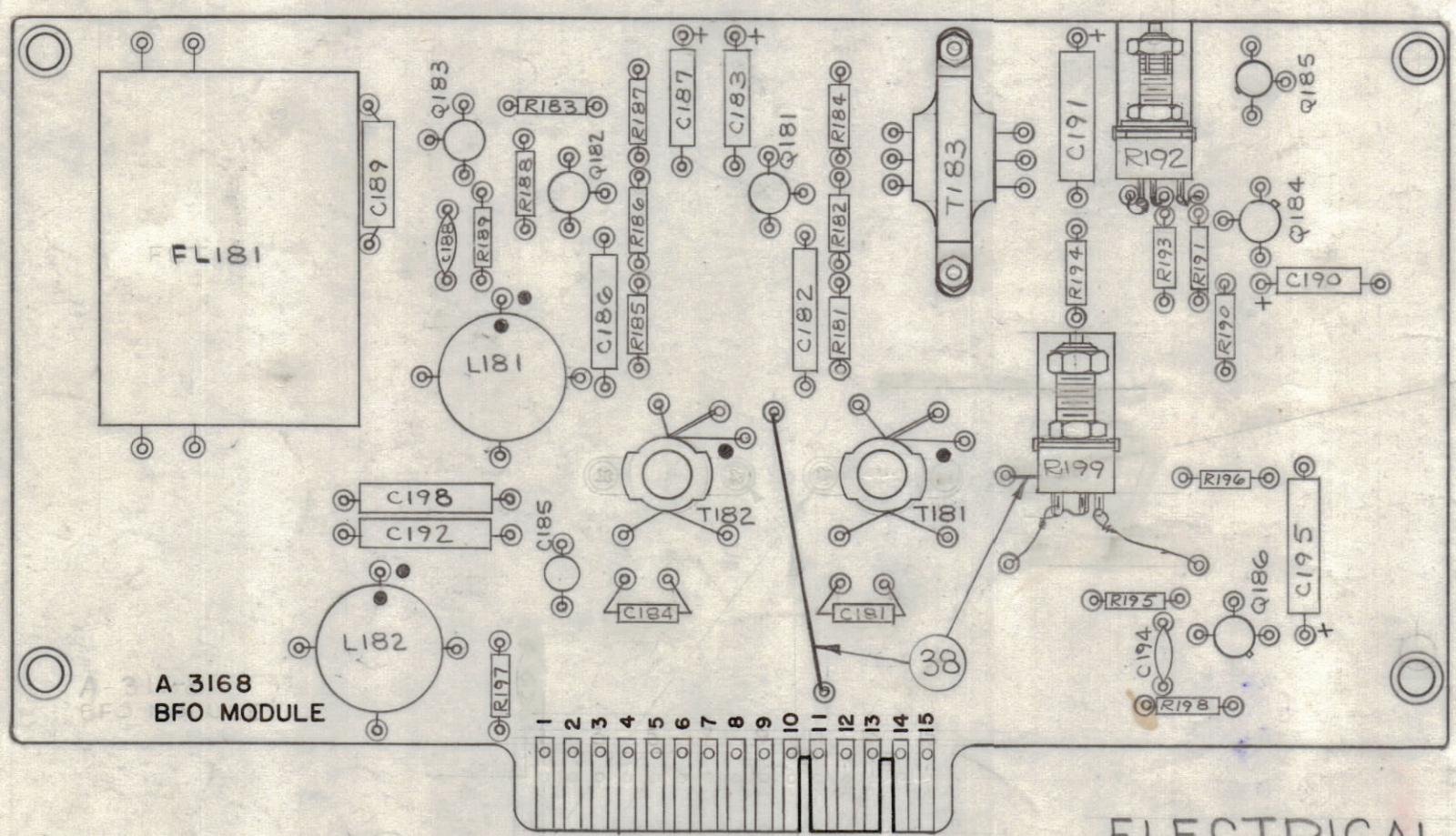
SUB-ASS'Y

REVISIONS						
ZONE	SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD
A		SEE SHEET 1 OF 2 REDRAWN	7.22.64	1187		
C2, E3	B	IT.17 WAS CM20E202G, IT.29 WAS 2N396A	8.25.64	12050	hjb	
	C	IT.1 WAS RC20GF102K, IT.19 WAS CM111F102 DIS, IT.20 WAS CM111FG21 DIS, IT.29 WAS 2N396A(TX101-1)	10.30.64	12791	hjb	
C1, C6	D	IT.17 SYM. C198 WAS C193, ON A3168-5 C198 WAS C193	11.17.64	12946	hjb	
	E	ON B/M IT.17 WAS CM112D202G35, IT.27 WAS FLT1A, ON A3168-3 E-5 FL181 WAS FLT1A	12.16.64	13086	HCA	
	F	BLK DOTS ADDED TO T181 & T182	12.22.64	17560	WHD	

- ASSEMBLY NOTICE
- TO MOUNT COMPONENTS INSERT LEAD THROUGH PLATED-THRU HOLES AND BEND ABOUT 1/16 OF LEAD OVER COPPER FOIL AS SHOWN.
 - APPLY HEAT AND SOLDER TO LEAD AND FOIL - CAUTION - TOO MUCH HEAT WILL CAUSE THE FOIL TO SEPARATE FROM THE BOARD.
 - CLEAN AND INSPECT AS PER S-676.
 - FUNGUS PROOFING PER TMC SPECIFICATION S113.
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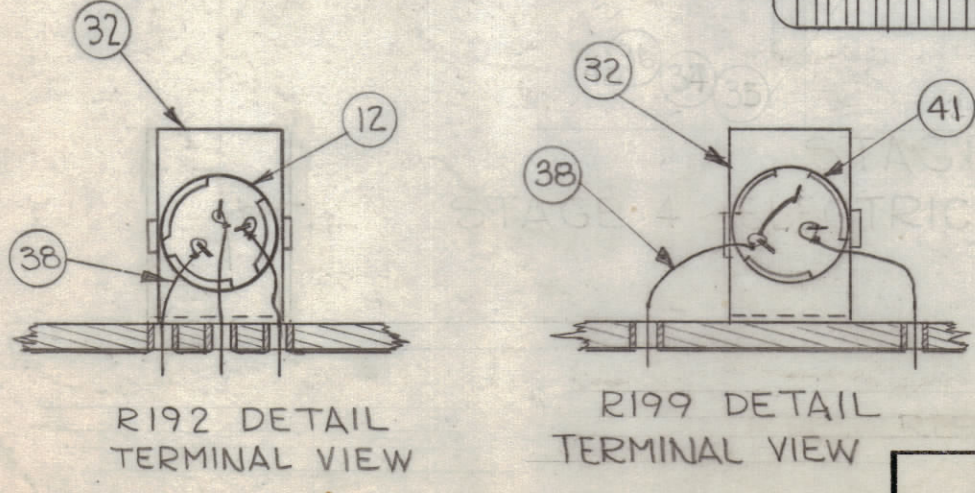
REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
4	43	LWI03MRN	LOCKWASHER, INTERNAL	
2	42	SCBP0348BNS	SCREW, MACHINE	
1	41	RV10GUX9B103A	RESISTOR, VARIABLE, COMPOSITION	R199
1	40	CV-112-1	CAPACITOR, VARIABLE	C185
X	39	BS-100	SOLDER, SOFT	
X	38	WL-100-G	WIRE, BUSS BAR TINNED #20	
2	37	NTH0632BN10	NUT, HEX.	
2	36	NTH0348BN8	NUT, HEX.	
2	35	LWI06MRN	LOCKWASHER, INTERNAL	
4	34	LWI04MRN	LOCKWASHER, INTERNAL	
4	33	SCBP0440BN4	SCREW, MACHINE	
2	32	MS-3392	BRACKET, MOUNTING	MTG R192,193
4	31	TE-164-7	STANDOFF, RIVET TYPE	A
1	30	TF-263	TRANSFORMER, MINIATURE	T183
3	29	TX101-1A (TX101-1)	TRANSISTOR	Q184,185,186
3	28	2N1637	TRANSISTOR	Q181,182,183
1	27	FX-194	FILTER, LOW PASS, 2.5 KC.	FL181
1	26	CL-320	COIL, R.F., FIXED	L182
1	25	CL-316	COIL, R.F., FIXED	L181
1	24	TT-196-2	TRANSFORMER, R.F., TUNED	T181
1	23	TT-196-1	TRANSFORMER, R.F., TUNED	T182
1	22	CC-100-33	CAPACITOR, FIXED, CERAMIC, DISC	C194
1	21	CC-100-28	CAPACITOR, FIXED, CERAMIC, DISC	C188
1	20	CM111F621G5S	CAPACITOR, FIXED, MICA	C181
1	19	CM112F112D5S	CAPACITOR, FIXED, MICA	C184
3	18	CM20E102G	CAPACITOR, FIXED, MICA	C182,186,187
2	17	CM112D202G5S	CAPACITOR, FIXED, MICA	C192,198
1	16	CE-105-2-15	MINIATURE ELECTROLYTIC CAP.	C190
2	15	CE-105-10-15		C183,187
1	14	CE-105-15-15		C195
1	13	CE-105-25-15	MINIATURE ELECTROLYTIC CAP.	C191
1	12	RV10GUX9B501A	RESISTOR, VARIABLE COMPOSITION	R192
1	11	RC20GF822K	RESISTOR, FIXED, COMPOSITION	R196
2	10	RC20GF470K		R191,193
1	9	RC20GF472K		R183
1	8	RC20GF273K		R188
1	7	RC20GF222K		R194
3	6	RC20GF182K		R181,185,185
1	5	RC20GF153K		R198
2	4	RC20GF123K		R182,186
2	3	RC20GF122K		R184,187
2	2	RC20GF103K		R189,190
1	1	RC20GF471K	RESISTOR, FIXED, COMPOSITION	R197

MATERIAL		THE TECHNICAL MATERIEL CORP.	
FINISH		MAMARONECK, NEW YORK	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		TITLE PRINTED CIRCUIT BOARD, ASSEMBLY (BFO MODULE)	
DRAWN G. J. [Signature]	DATE 4-15-63	FINAL APPROVAL [Signature]	DATE
CHECKED [Signature]	DATE 5/18/64		
ELECT. DES. [Signature]	DATE		
MECH. DES. [Signature]	DATE		
TOLERANCES		SHEET 2 OF 2	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	FRACTIONS ± 1/64 ANGLES ± 0° 30'	REV. LTR. F	



ELECTRICAL ASS'Y (A-3168-5)

VIEW "A-A"



R192 DETAIL TERMINAL VIEW

R199 DETAIL TERMINAL VIEW

REF: CK-677

1	VLRA-1	AX 424
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE 1:1	CODE A	

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NOTES