

NOTE: THESE DIMENSIONS, SPECIFICATIONS, OR OTHER DATA ARE BASED UPON THE ASSUMPTION THAT THE MATERIALS AND COMPONENTS WILL BE SUPPLIED BY THE CONTRACTOR AND THAT THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER SELECTION AND USE OF THE MATERIALS AND COMPONENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SELECTION AND USE OF THE MATERIALS AND COMPONENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SELECTION AND USE OF THE MATERIALS AND COMPONENTS.

NOTE: *FOR INFORMATION ONLY. CONTRACTOR MAY AT HIS OPTION DEVIATE FROM THESE PROCESS DETAILS

REVISIONS		DATE	APPROVAL
SYN	REVISED & REDESIGNED	21 DEC 59	P.M.E.
B1	NOTE 1 DESCRIPTION ADDED	20 APR 60	P.M.E.

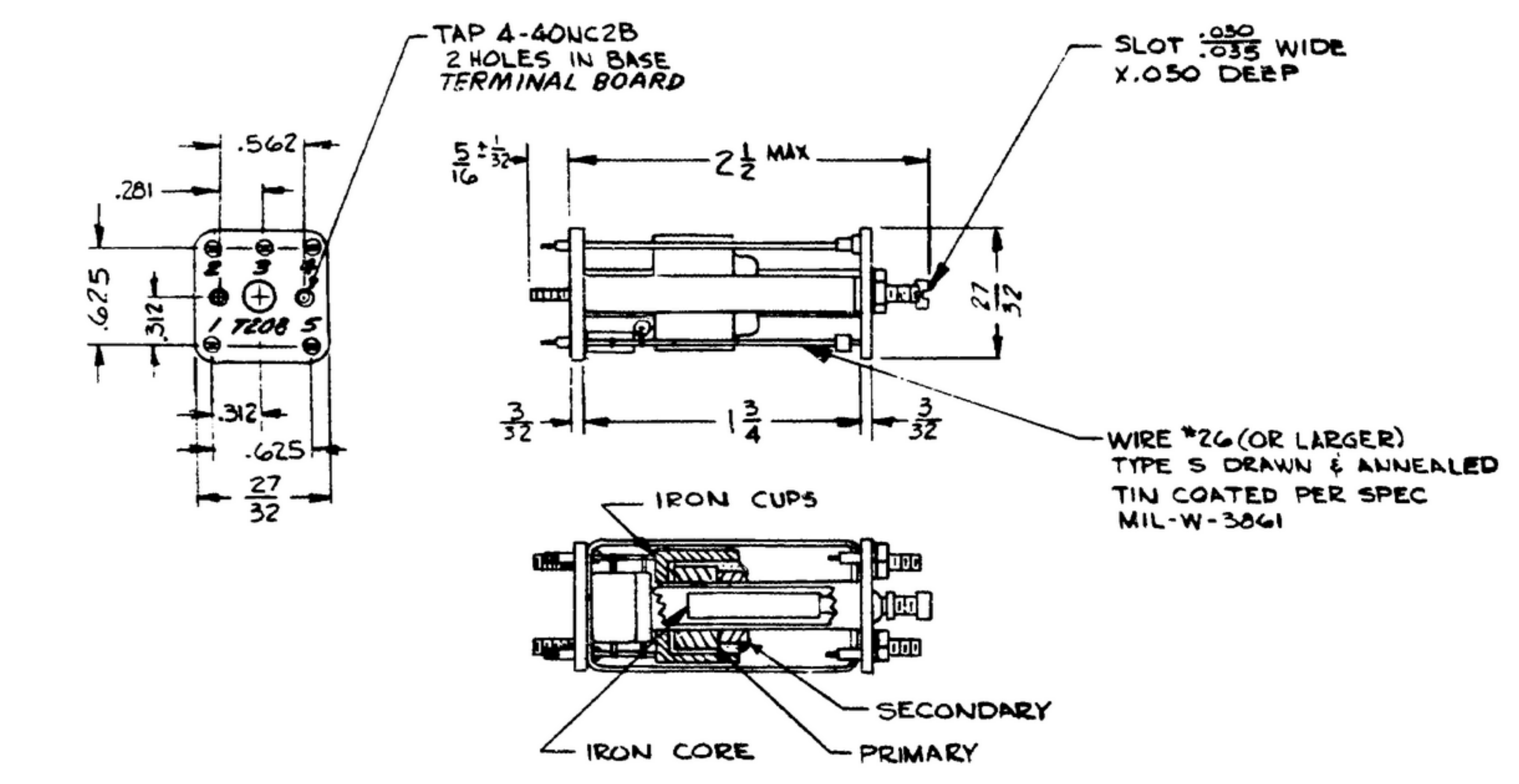
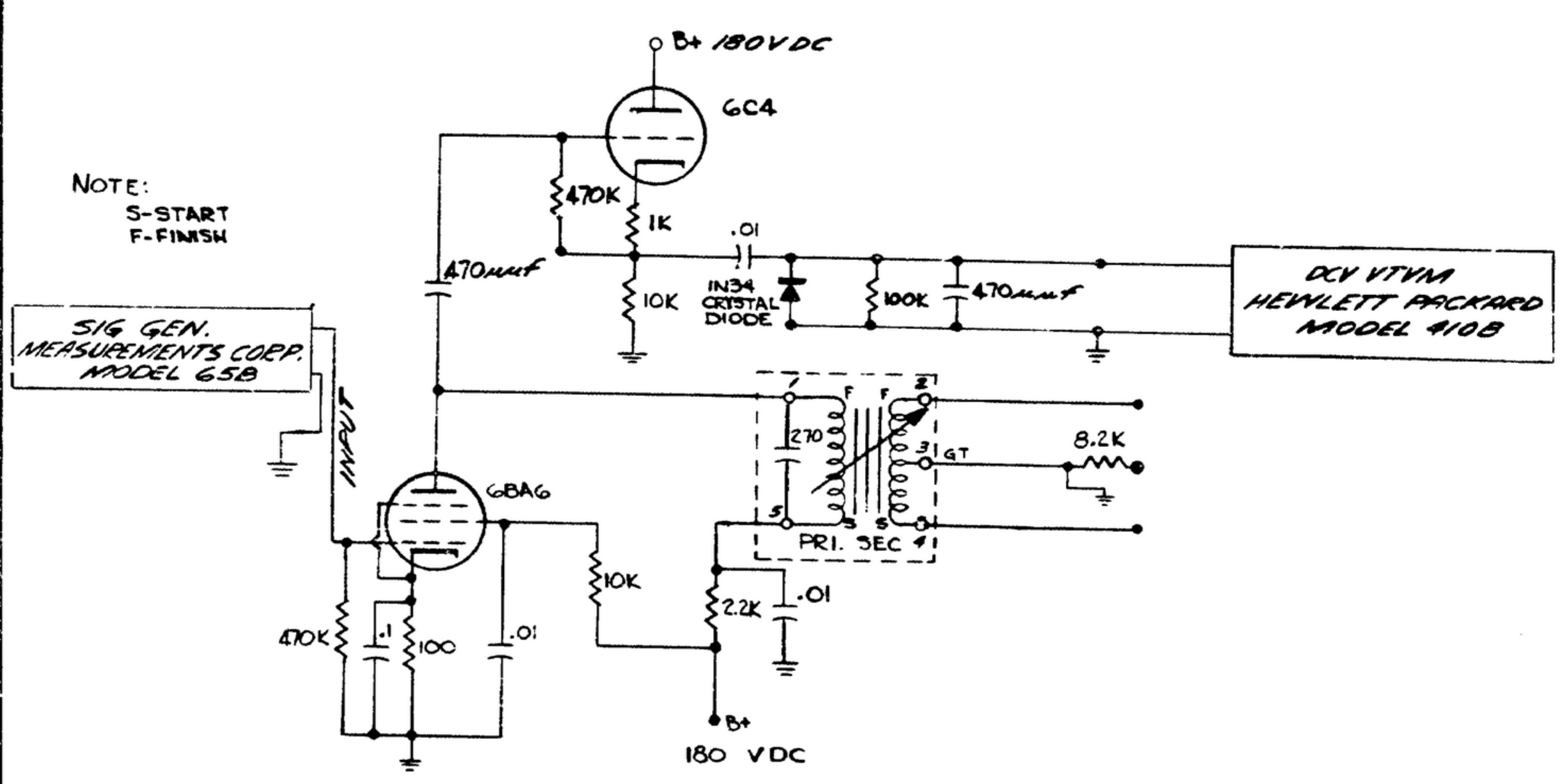


FIGURE 3
TERMINAL LUG
SCALE 4/1



TEST CIRCUIT
FIGURE 2

UNLESS OTHERWISE INDICATED, CAPACITANCES ARE IN UF, & RESISTANCES ARE IN OHMS.

NOTES:

(B) 1. PART MAY BE NO. 24205202 AS SUPPLIED BY STEWART-WARNER ELECTRONICS, CHICAGO, ILL. OR EQUAL, PROVIDING IT MEETS THE FOLLOWING REQUIREMENTS AND DIMENSIONS SHOWN.
DESCRIPTION: 455 KC I.F. COIL.

MATERIALS AND COMPONENTS:

SHIELD CAN: 29/32" X 29/32" OUTSIDE .018 THICK, 2.044" ±.015 INSIDE DEPTH. ALUMINUM, FINISH E513 PER SPEC MIL-F-14072.

PHENOLICS:

TUNING: MAY BE PANELYTE GRADE 780 AS SUPPLIED BY ST. REGIS PAPER CO., PANELYTE DIV., RICHMOND, IND. OR EQUAL: .285 IN. ±.003 IN. O.D. .250 IN. ±.003 IN. I.D.
SHEET STOCK: PLASTIC TYPE PBE-P PER SPEC MIL-P-3115.

POWDERED IRON PARTS:

CORE: CARBONYL C BASIC MATERIAL---.245/.250" DIA. X 5/8" LG., 4-W NC-2A X 7/8" LG. SCREW -- BRASS (SEE FIGURE 1).
CUPS: NO. P-3009 AS SUPPLIED BY PYROFERRIC CO., NEW YORK, N.Y. OR EQUAL; 23/32" O.D., 27/64" I.D. INSIDE DEPTH.
ALL POWDERED IRON PARTS SHALL BE IMPREGATED TO WITHSTAND THE SERVICE CONDITIONS TEST LISTED BELOW--IF IRON CUPS ARE IMPREGATED AS AN ASSEMBLY THE CUPS NEED NOT BE IMPREGATED PRIOR TO ASSEMBLY.
ADJUSTMENT SCREW: SHALL BE GROUNDED AND HAVE A MINIMUM ADJUSTMENT TRAVEL NECESSARY TO RESONATE THE COIL +50 KC FROM THE CENTER FREQUENCY AND SHALL HAVE AN OPERATING TORQUE BETWEEN 2 AND 12 INCH OUNCES.

TERMINALS: DETAILED--BRASS, FINISH M351 PER SPEC MIL-F-14072, AS SUPPLIED BY LERCO ELECTRONICS INC., BURBANKS, CALIF.

CAPACITOR, COIL TUNING:

CHISEN1003 CAPACITOR SHALL BE IN ACCORDANCE WITH SPEC MIL-C-5 EXCEPT WHERE AMENDED: SILVER MICA, STYLE CM15, TOTAL CAPACITANCE 200 pF ±2%, TEMPERATURE RANGE -55°C TO +125°C, AMENDED CHARACTERISTIC (E) -20 TO -100 PPM/°C. AS SUPPLIED BY CORNELL-DUBILIER ELECTRIC, SO. PLAINFIELD, N.J. OR EQUAL.
CC22UJ3006 CAPACITOR SHALL BE IN ACCORDANCE WITH SPEC MIL-C-20 EXCEPT WHERE AMENDED: CERAMIC, STYLE CC22, TEMPERATURE COEFFICIENT -750 PPM/°C, TEMPERATURE COEFFICIENT TOLERANCE J, TOTAL CAPACITY 30 UUF ±5%, AMENDED TEMPERATURE RANGE -55°C TO +125°C. AS SUPPLIED BY: ERIE RESISTOR CORP., ERIE, PENN.

WIRE: PRIMARY WINDING - 15 X #4 SMP LITZ; SECONDARY WINDING - 5 X #4 SMP LITZ, AS SUPPLIED BY CHICAGO WIRE INSULATING & W.G. CO., CHICAGO, ILL. OR EQUAL.

FUNGICIDAL MATERIALS: ALL ORGANIC MATERIALS SHALL BE FUNGUS INERT OR TREATED TO BE FUNGUS RESISTANT WITH VARNISH TYPE 1 PER SPEC MIL-V-173.

OVERALL HEIGHT: OVERALL HEIGHT FROM BOTTOM OF SHIELD CAN TO TOP OF ADJUSTING SCREW WHEN TUNED, SHALL NOT EXCEED 2-1/2 INCHES.

IMPREGNATION: COILS SHALL BE IMPREGATED WITH POLYSTYRENE LACQUER, TYPE POLYWELO #912 AS SUPPLIED BY AMPHENOL ELECTRONICS CORP., CHICAGO, ILL. OR CONTRACTOR'S APPROVED EQUIVALENT.
MANUFACTURER'S RECOMMENDED INSTRUCTIONS FOR IMPREGATING COIL:
A. DRY OUT COIL AT 100°C FOR MINIMUM OF 2 HOURS.
B. THIN POLYWELO TO BRUSHING CONSISTENCY AND APPLY ONTO COIL THOROUGHLY.
C. AIR DRY FOR 30 MINUTES OR OAKE DRY AT 50°C FOR 15 MINUTES.
D. REPEAT STEP B & C.

POTTING: COILS SHALL BE POTTED WITHIN THE CUP CORE USING AN EPOXY RESIN TYPE RESINELD #2 AS SUPPLIED BY M. B. FULLER CO., ST. PAUL, MINN., AND CEMENT TYPE A.M.S. PC9881 AS SUPPLIED BY MASS & WALDSTEIN CO., HAVENHILL, MASS. OR CONTRACTOR'S APPROVED EQUIVALENT.
MANUFACTURER'S RECOMMENDED INSTRUCTIONS FOR POTTING COIL:
A. CEMENT BOTTOM SIDE OF COIL TO CUP CORE AS SHOWN, ASSURING SEAL BETWEEN THE COIL FORM AND THE CLEARANCE HOLE OF CUP CORE. ALLOW CEMENT TO DRY FOR MINIMUM OF 30 MINUTES.
B. HEAT POTTING COMPOUND TO POURING CONSISTENCY AND MIX (EQUAL MEASURES OF HARDENER & ADHESIVE) THOROUGHLY, THEN POUR MIXTURE INTO CUP CORE FILLING THE CUP FULLY.
C. BAKE ASSEMBLY AT 109°C FOR MINIMUM OF ONE HOUR.

PERFORMANCE:

Q--THE Q SHALL EQUAL 130 ±10% WHEN MEASURED ON BOONTON Q-METER TYPE 150A AS SUPPLIED BY BOONTON RADIO CORP., BOONTON, N.J. OR EQUAL, WITH TUNING CAPACITY DIAL ADJUSTED TO 270 UNF WITH TERMINAL 5 AND SHIELD CAN GROUNDED.
PRODUCTION MEASUREMENT OF Q--TO TEST CONFORMANCE WITH Q, UNITS SHALL BE CHECKED IN THE TEST CIRCUIT OF FIGURE 2 AND COMPARED TO A STANDARD COIL ASSEMBLY TO BE APPROVED BY THE PRIME CONTRACTOR. THE INPUT LEVEL OF THE SIGNAL GENERATOR IS ADJUSTED AT THE CENTER FREQUENCY TO GIVE 3.0 VDC AT THE OUTPUT OF THE CATHODE FOLLOWER. UNDER THESE CONDITIONS, THE INPUT VOLTAGE TO A COIL UNDER TEST SHALL BE WITHIN 10% OF THE VALUE OF THE INPUT VOLTAGE TO THE STANDARD COIL NECESSARY TO GIVE THE 3.0 VDC OUTPUT.

COUPLING: THE SPACING BETWEEN PRIMARY AND SECONDARY COILS OR THE NUMBER OF TURNS ON THE SECONDARY WINDING MAY BE ADJUSTED TO CONFORM WITH THE COUPLING REQUIREMENTS LISTED BELOW.
PRODUCTION MEASUREMENT OF COUPLING: TO TEST CONFORMANCE WITH COUPLING, UNITS SHALL BE CHECKED IN THE TEST CIRCUIT OF FIGURE 2. THE METHOD OF TESTING IS AS FOLLOWS: WITH THE SECONDARY WINDING UNLOADED, THE INPUT LEVEL OF THE SIGNAL GENERATOR IS ADJUSTED AT THE CENTER FREQUENCY TO GIVE 3.0 VDC AT THE OUTPUT OF THE CATHODE FOLLOWER. AN 8200 OHM ±5% RESISTOR IS THEN CONNECTED ACROSS TERMINALS 2 AND 3 AND THE COIL RETURNED. THE CATHODE FOLLOWER OUTPUT VOLTAGE SHALL BE 1.5 VDC ±15%. THE LOAD RESISTOR IS THEN CONNECTED TO TERMINALS 3 AND 4 AND THE MEASURED OUTPUT VOLTAGE SHALL BE WITHIN 15% OF ITS VALUE WHEN THE RESISTOR WAS ACROSS TERMINALS 2 AND 3.

CONT'D.

SERVICE CONDITIONS:

TEMPERATURE RANGE: -40°C TO +95°C, STORAGE TEMPERATURE -62°C.
HUMIDITY: UP TO 95% R.H.
STABILITY: THE RESONANT FREQUENCY OF THE TUNED CIRCUIT SHALL NOT VARY MORE THAN 3 KC OVER THE TEMPERATURE RANGE -40°C TO +95°C. STORAGE TEMPERATURE DOWN TO -62°C.

SERVICE CONDITIONS TEST: UNITS SHALL OPERATE WITHIN REQUIRED SPECIFICATIONS OVER ANY NORMAL COMBINATION OF SPECIFIED SERVICE CONDITIONS. UNITS SHALL SHOW NO EVIDENCE OF CORROSION OR MALFUNCTIONING AFTER SUBJECTION TO FIVE CYCLES NON-OPERATING OF HUMIDITY CYCLING SPECIFIED ON SIGNAL CORPS DRAWING SC-D-16286, PLUS A 4-HOUR DRYING PERIOD.

VIBRATION TESTS: UNITS SHALL BE TESTED BY VIBRATION IN THREE MUTUALLY PERPENDICULAR DIRECTIONS PARALLEL TO EDGES OF SHIELD CAN. FREQUENCY OF VIBRATION FROM 10 TO 55 CYCLES PER SECOND. AMPLITUDE (ONE-HALF OF TOTAL EXCURSION) OF VIBRATION .030 INCHES. VIBRATE ABOUT 30 MINUTES IN EACH DIRECTION. AT THE CONCLUSION OF TEST, UNITS SHALL SHOW NO EVIDENCE OF BREAKAGE, PERMANENT DEFORMATION OR LOOSENING OF PARTS.

MARKINGS: WINDINGS SHALL BE CONNECTED TO BASE TERMINALS AS INDICATED ON DRAWING. CONTRACTOR'S PART NUMBER SHALL BE AFFIXED ON THE SIDE OF CASE IN A THOROUGHLY LEGIBLE MANNER. ALL CHARACTERS & MARKINGS IN VERTICAL GOTHIC 3/32 INCHES HIGH IN ACCORDANCE WITH AID TO MEET THE TEST REQUIREMENTS OF SPEC MIL-M-13281. MARK TOP OF SHIELD CAN SYMBOL T208.

RECD	PART NO.	DESCRIPTION	QTY	MATL SPEC
LIST OF MATERIAL - 24205202				
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES		
		±1/16 ±.005		
		Drawn By: J. V. L. G. E.		
		Checked By: B. G. E.		
		USED ON		
		APPLICATION		
		DATE 27 MAR 58	SCALE 1/1	

SM-D-249235
TRANSFORMER-I.F.
DEPARTMENT OF THE ARMY
SIGNAL CORPS ENGINEERING
LABORATORIES
FORT MONMOUTH NEW JERSEY

WHEN REFERRING TO THIS DRAWING STATE DRAWING NO., APPLICABLE ISSUE SYMBOL, IF ANY, AND DATE.