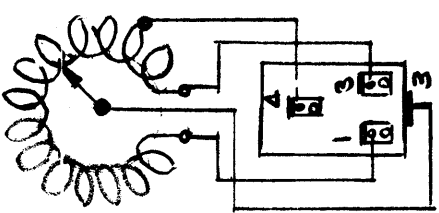


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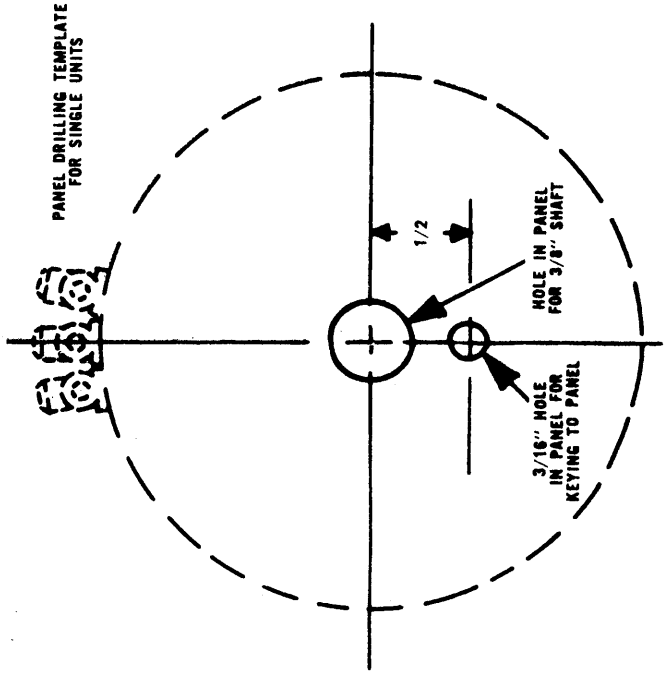
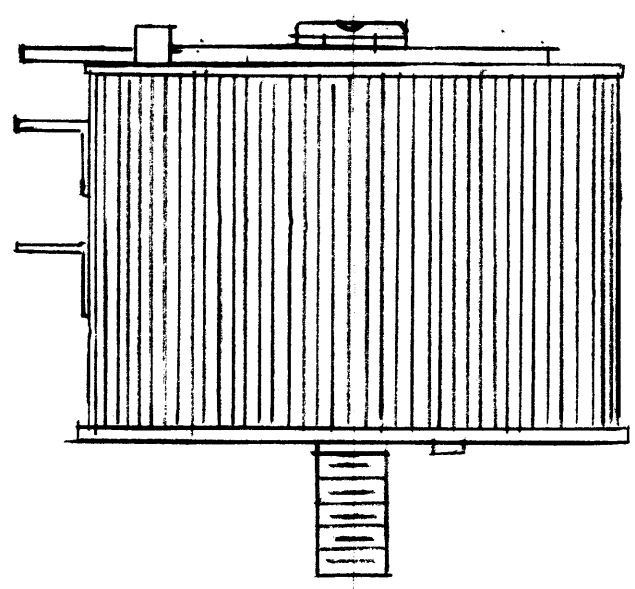
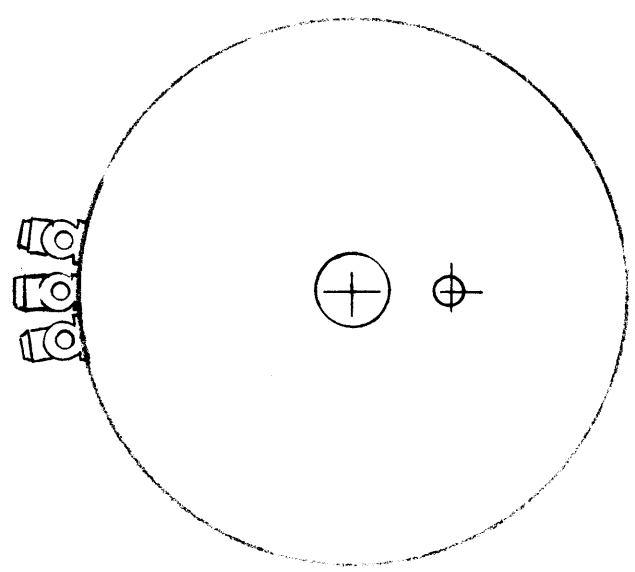
EM.N. NO.		DRAFT	CHKD	ZONE	LTR	DESCRIPTION	DATE	APPROVED
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REVISIONS

SCHEMATIC



TYPE	INPUT VOLTAGE	FREQUENCY (HZ)	CONSTANT CURRENT		CONSTANT IMPEDANCE		KIND OF ROTATION		TERMINALS		
			VOLTS	AMPS	VOLTS	AMPS	MIN.	MAX.	INPUT	JUMPER	OUTPUT
12	240	50 60	0.240	0.71	0.17	0.9**	0.22	CW	1-2		1-3
			0.264	0.5	0.13			CCW	1-2		2-3
							CW	1-4		1-3	



MFG. THE SUPERIOR ELECTRIC COMP.
BRISTOL, CONN.

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DECIMALS: .X ± .05, .XX ± .01, .XXX ± .005
FRACTIONS: 1/64
TOLS. ANGLES: °-30'

MATERIAL: FINISH

FINAL APPROVAL: _____ DATE: _____
MECH. DES. _____ DATE: _____
ELECT. DES. _____ DATE: _____
CHECKED: _____ DATE: _____
DRAWN: G.D.L. DATE: 5-31-83

LIST OF MATERIAL

THE TECHNICAL MATERIEL CORP.
MAMARONECK, NEW YORK

VARIABLE TRANSFORMER

SIZE: B CODE IDENT. NO.: 82679 DWG NO.: TF 450 ISSUE: _____
SCALE: 1:1 SHEET: 1 OF 1

REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
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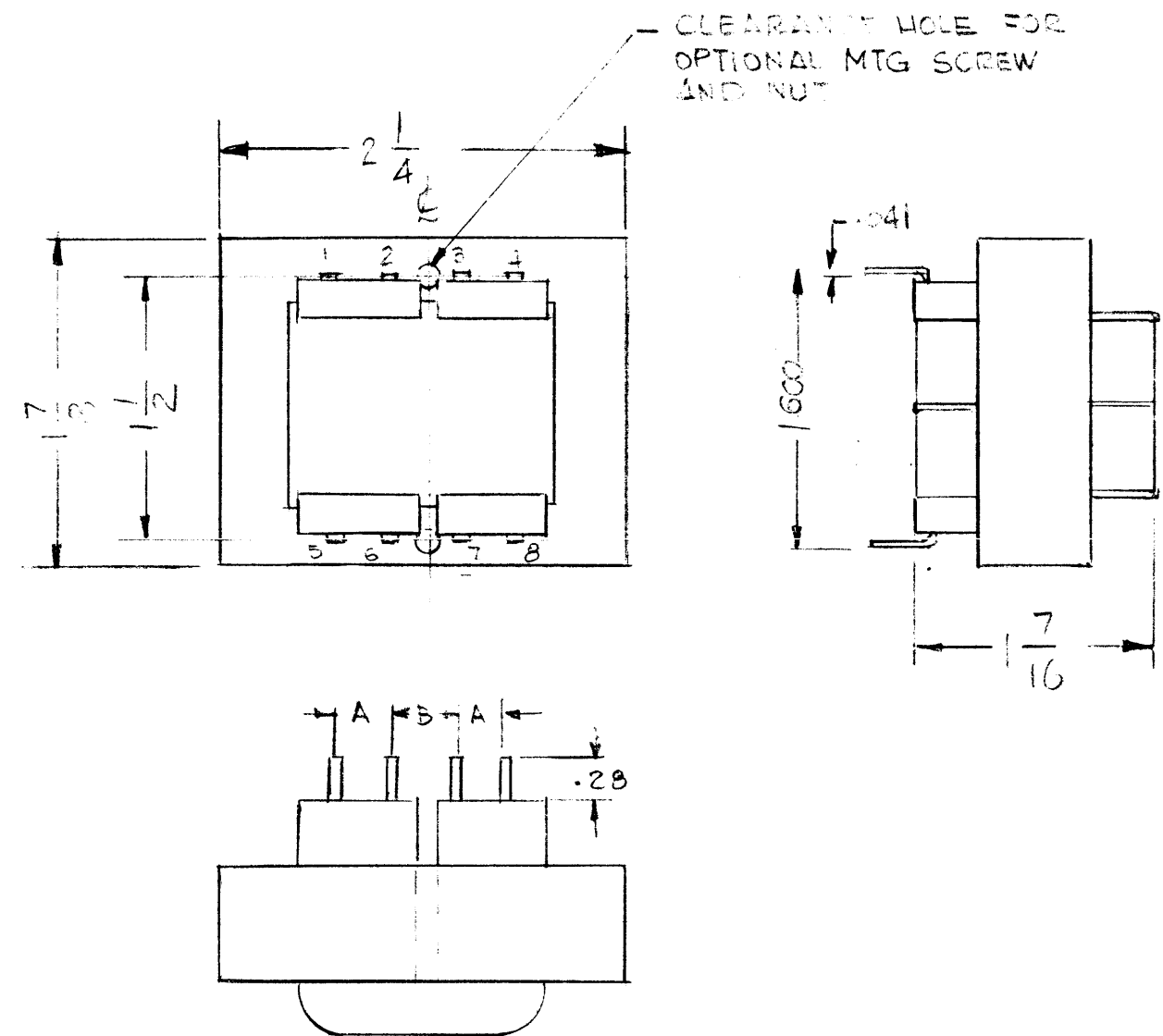
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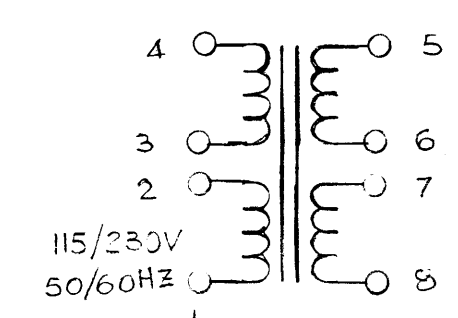
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1

REVISIONS							
E.M.N. NO.	DRAFT	CHKD	ZONE	LTR	DESCRIPTION	DATE	APPROVED
	GDL				DESIGN RELEASE FOR PRODUCTION	9-17-84	



ELECTRICAL SPEC'S
 PRIMARY : 115/230V.
 SECONDARY: SERIES PARALLEL
 43V @ 0.04A 24V @ 0.8A

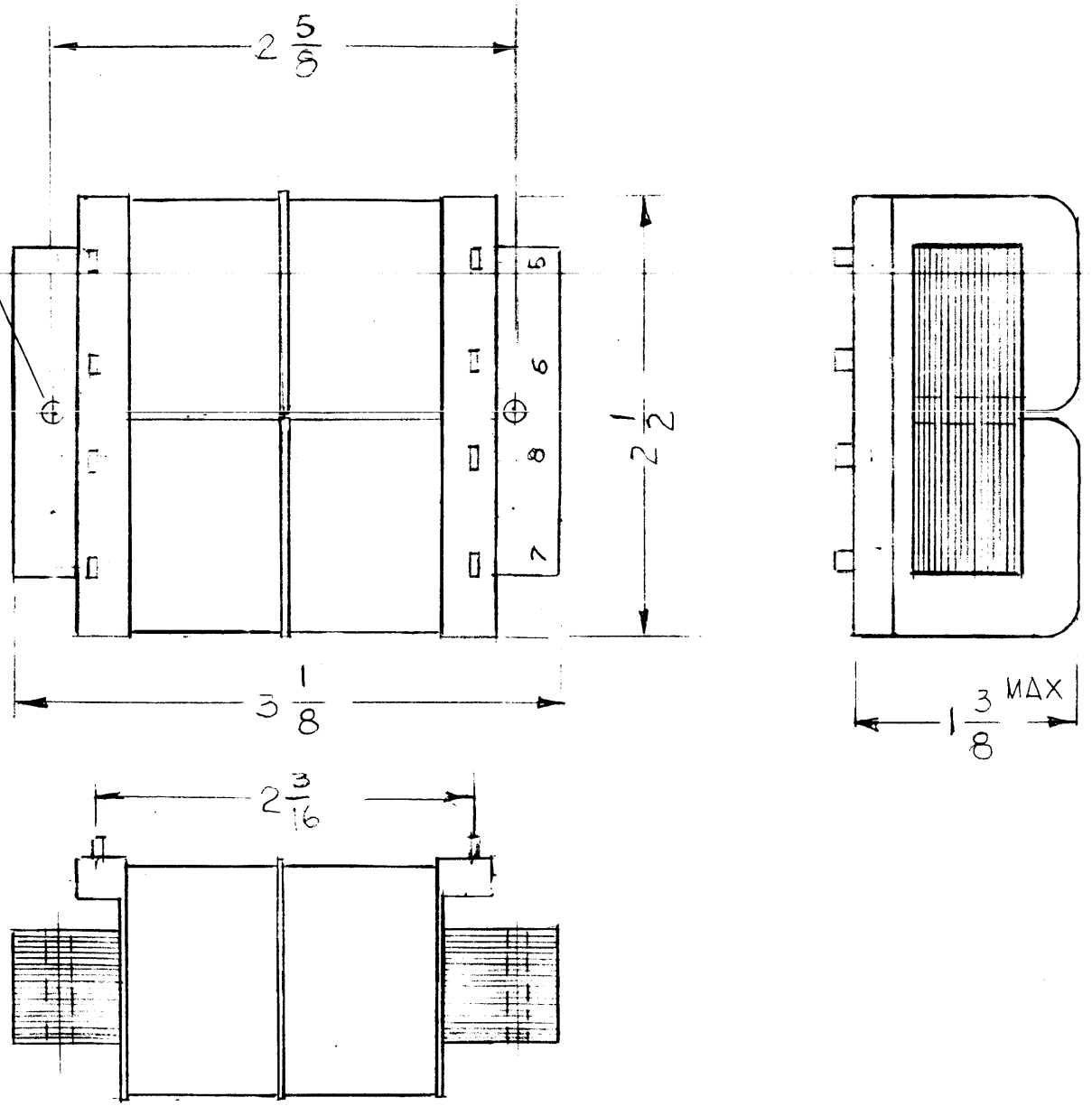


SCHEMATIC DIAGRAM

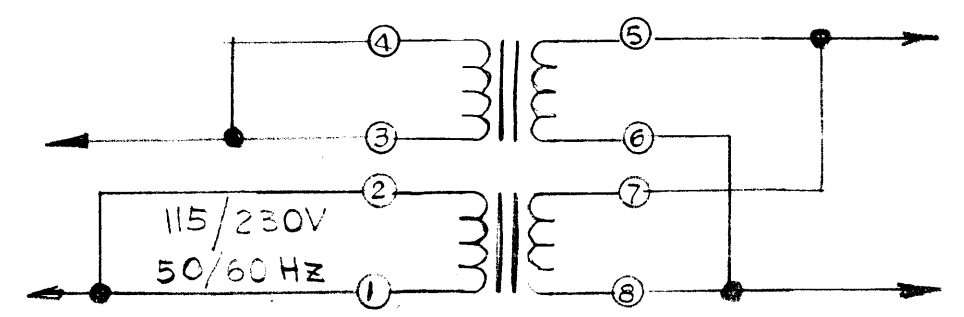
QTY / UNIT	MODEL USED ON	ASS'Y NO.	REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
1	AZ 102						
LIST OF MATERIAL							
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK							
TRANSFORMER, POWER							
APPLICATION CODE C S-11-930			FINAL APPROVAL [Signature] DATE 9/17/84		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
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MATERIAL FINISH			ELECT. DES. DATE		SCALE 1:1 SHEET OF		
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005			FRACTIONS 1/64 ANGLES 0° -30'		DRAWN GDL DATE 9-17-84		

REVISIONS							
E.M.N. NO.	DRAFT	CHKD	ZONE	LTR	DESCRIPTION	DATE	APPROVED
	GDL			Δ	REVISE & UPDATED	8-28-91	

CLEARANCE FOR # 6 SCREW



-- ELECTRICAL SPECS --
 PRIMARY 115/230V
 SECONDARY 56V C.T. & 850VA
 PARALLEL WINDING



SCHEMATIC DIAGRAM

REF: SIGNAL CAT. G-8 LP 56-850
 FLATHEAD HUBG S125

1	AMC-8	
QTY / UNIT	MODEL USED ON	ASS'Y NO.
APPLICATION		
	CODE	8401 -

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DECIMALS .X ± .05 .XX ± .01 .XXX ± .005

FRACTIONS 1/64 ANGLES 0°-30'

TOLS.

MATERIAL

FINISH

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
TRANSFORMER, POWER				
FINAL APPROVAL <i>[Signature]</i>		DATE		
MECH. DES.		DATE		
ELECT. DES.		DATE		
CHECKED		DATE		
DRAWN G.D.L.		DATE 8-27-91		
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE	
B	82679	TF 453	Δ	
SCALE 1:1	SHEET		OF	

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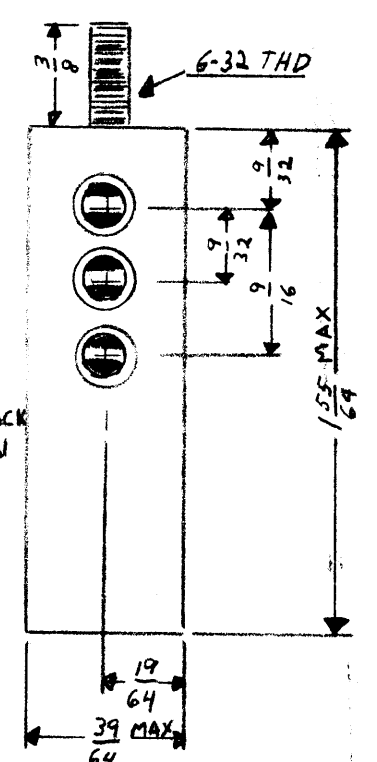
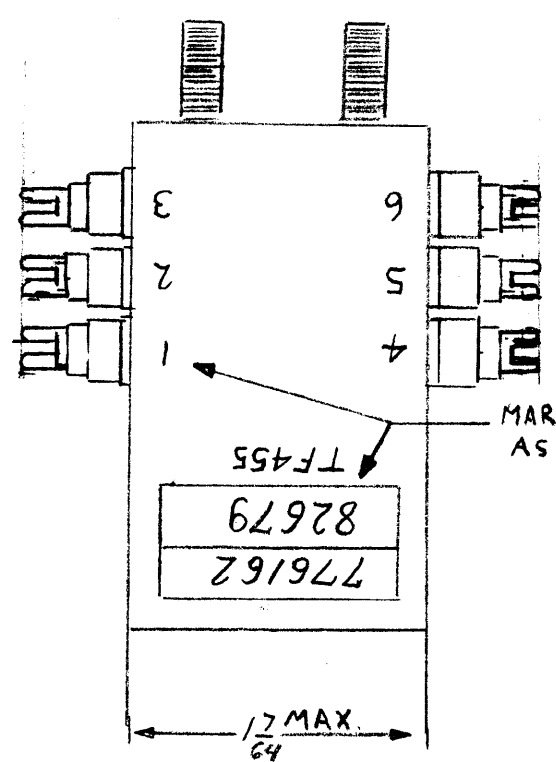
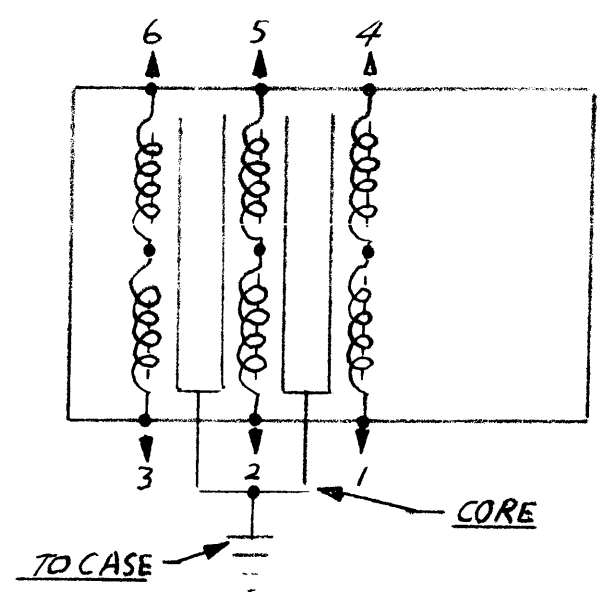
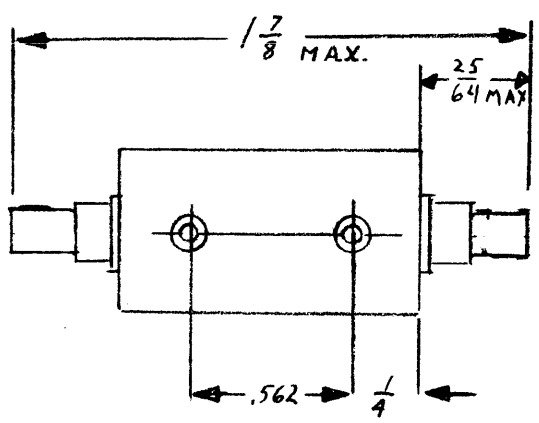
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REVISIONS							
EM.N.NO.	DRAFT	CHKD	ZONE	LTR	DESCRIPTION	DATE	APPROVED



BUORD DRAWING NO
776162

FIG 1

QTY / UNIT	MODEL USED ON	ASS'Y NO.
APPLICATION		
CODE		

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	FRACTIONS 1/64 ANGLES 0° - 30'
MATERIAL	
FINISH	

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
TRANSFORMER, PULSE TF-455				
FINAL APPROVAL	DATE			
MECH. DES.	DATE			
ELECT. DES.	DATE			
CHECKED	DATE			
DRAWN	DATE			
SIZE	CODE IDENT. NO.	ISSUE		
B	82679	TF 455		
SCALE	SHEET 1 OF 3			

5

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1

REVISIONS

E.M.N.NO.	DRAFT	CHKD	ZONE	LTR	DESCRIPTION	DATE	APPROVED
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1. GENERAL

1.1 THIS TRANSFORMER SHALL CONSIST OF 3 SEPERATE WINDINGS. THE TRANSFORMATION RATIO FROM ONE WINDING TO ANOTHER SHALL BE 1:1 TO WITHIN 2%.

2. OPERATING CONDITIONS

2.1 THE MAXIMUM INSTANTANEOUS VOLTAGE ACROSS ANY ONE WINDING WILL BE 180 VOLTS.

2.1 THE MAXIMUM PEAK CURRENT THROUGH ANY WINDING WILL BE 0.35 AMPERES.

2.3 THE MAXIMUM D-C CURRENT THROUGH ANY WINDING WILL BE 1 MILLIAMPERE.

3. ELECTRICAL REQUIREMENTS

3.1 TERMINALS 1, 2 AND 3 SHALL HAVE THE SAME POLARITY.

3.2 THE INDUCTANCE OF ANY WINDING AT 1,000 HERTZ SHALL MEASURE 2.0 MILLIHENRIES MINIMUM WITH THE OTHER WINDINGS OPEN CIRCUITED. THE VOLTAGE ACROSS THE WINDING UNDER TEST SHALL BE 0.05 +/-0.005 VOLTS RMS.

3.3 THE TRANSFORMER SHALL BE TESTED FOR DIELECTRIC STRENGTH IN ACCORDANCE WITH THE FOLLOWING TABLE:

 MIN. DIELECTRIC STRENGTH TEST VOLTAGES
 A.C. VOLTAGES-APPLY FOR NOT LESS THAN 5 SECONDS
 NOR MORE THAN 1 MINUTE.

TERMINAL	CASE	#3	#2
#1	1500	1500	1500
#2	1500	1500	--
#3	1500	--	--

3.4 THE PULSING PROPERTIES OF THE TRANSFORMER WILL BE TESTED WITH THE CIRCUIT SHOWN IN FIGURE 3. TEST SETUP #1. AN OSCILLOSCOPE OF THE PROPER PASS BAND, DEFLECTION SENSITIVITY AND SWEEP SPEEDS, SHALL BE USED FOR THE MEASUREMENTS. THE OUTPUT PULSE SHALL CONFIRM TO THE FOLLOWING SPECIFICATIONS.

ADJUST THE POSITIVE SIGNAL ACROSS R1 TO READ 9 VOLTS +/-5% ON THE OSCILLOSCOPE BY VARYING THE FILAMENT INPUT VOLTAGE.

RISE TIME - THE NEGATIVE PULSE OUTPUT SHALL RISE FROM 10% TO 90% OF THE MAXIMUM VOLTAGE IN NO MORE THAN 0.25 MICRO SECONDS.

WIDTH - AT 70% OF IT'S FULL AMPLITUDE THE PULSE WIDTH SHALL BE 0.92 +/-0.03 MICRO SECONDS

AMPLITUDE - THE RATIO OF THE MAXIMUM AMPLITUDE OF THE PULSE OUTPUT TO THE SIGNAL ACROSS R1 SHALL BE 10:1 +/-10%.

3.5 INTERCHANGE TERMINAL 6 WITH TERMINAL 4 AND TERMINAL 3 WITH TERMINAL 1.

3.6 THIS TRANSFORMER SHALL ALSO COMPLY WITH FIGURE 2 ON SHEET 2.

4. OTHER REQUIREMENTS

4.1 THE TRANSFORMER SHALL COMPLY WITH SPECIFICATION MIL-T-27E GRADE 4, CLASS R.

4.2 THE EXTERIOR OF THE CASE IS TO BE FINISHED WITH PAINT OF A MEDIUM COLOR SUCH AS MUNSELL N4.5

4.3 THE TRANSFORMER SHALL BE MARKED AS SHOWN EXCEPT THAT THE MAUNFACTURER'S NAME OR SYMBOL SHALL APPEAR IN ADDITION TO THE REQUIRED INFORMATION.

5. OPERATING CONDITIONS FOR FIGURE 2, TEST SETUP #2

5.1 6.3 V.A.C. SHALL BE APPLIED TO THE HEATER (PINS 1 & 9).

5.2 THE SQUARE WAVE GENERATOR SHALL OPERATE AT 2,200 HERTZ AT 10 VOLTS MINIMUM PEAK TO PEAK.

6. REQUIREMENTS OF FIGURE 3

6.1 MEASUREMENTS SHALL BE MADE WITH A MODEL 475D TEKTRONIX OSCILLOSCOPE, OR EQUIVALENT.

6.2 WITH S1 CLOSED AND S2 OPEN, THE AMPLITUDE OF THE PULSE AT OUTPUT 1 SHALL BE 180 VOLTS MINIMUM.

6.3 WITH S1 CLOSED AND S2 CLOSED, THE AMPLITUDE OF THE PULSE AT OUTPUT 1 SHALL BE 70 VOLTS MINIMUM.

6.4 WITH S1 OPEN AND S2 OPEN, THE AMPLITUDE OF THE PULSE AT OUTPUT 2 SHALL BE 30 VOLTS MINIMUM

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
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LIST OF MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		FINAL APPROVAL <i>[Signature]</i>	DATE 3/7/86	THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		MECH. DES. <i>[Signature]</i>	DATE 3/10/86		
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005		FRACTIONS 1/64 ANGLES 0° -30'	ELECT. DES. <i>[Signature]</i>	DATE 3/7/86	TRANSFORMER, PULSE TF-455
MATERIAL			CHECKED	DATE	
FINISH			DRAWN <i>[Signature]</i>	DATE 3/7/86	
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.		SIZE B		CODE IDENT. NO. 82679	ISSUE 1
		SCALE		SHEET 3 OF 4	

QTY / UNIT	MODEL USED ON	ASS'Y NO.
APPLICATION		
CODE		

5

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2

1

REVISIONS					DATE	APPROVED
E.M.N. NO.	DRAFT	CHKD	ZONE	LTR	DESCRIPTION	

TRANSFORMER, Audio. TF456

ELECTICAL RATING

IMPEDANCE SOURCE	15,000 OHMS
LOAD	95,000 OHMS
POWER LEVEL	MAXIMUM 10 DBm
LIFE EXPECTANCY	MINIMUM 10,000 HOURS
ALTITUDE	MAXIMUM 10,000 FEET
OPERATING TEMPERATURE	60 DEGREES C WITH 40 DEGREE C HEAT RISE
WORKING VOLTAGE	175 VOLTS
FREQUENCY RANGE	350-7000 CPS + OR - 2DB

PHYSICAL CHARACTERISTICS

CASE SIZE	MAXIMUM 8 OUNCES
WEIGHT	METHOD 2 50 G
SHOCK	MINIMUM 18 AWG
TERMINALS SOLDER LUG	MAXIMUM 0.375 INCHES
TERMINAL HEIGH	

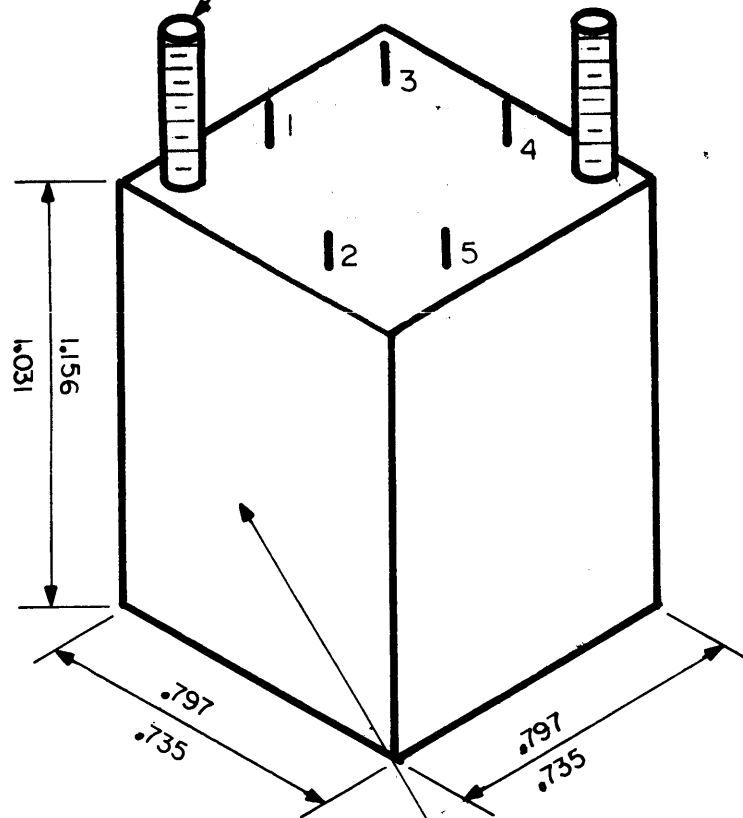
ELECTRICAL PROPERTIES

HARMONIC DISTORTION	MAXIMUM 5% WITH 3.0 MA. DC IN PRIMARY
PRIMARY IMPEDANCE	MINIMUM 2K-OHMS WITH 3.0 VOLTS 60 CPS 3.0 MA. DC
FREQUENCY RESPONSE	MINIMUM 350-7000 CPS + OR - 2 DB
RATED LOAD	
ELECTROSTATIC SHIELDING	MINIMUM VOLTAGE RATIO 5 TO 1 AT 20 KHZ
POLARITY	ADDITIVE WITH 2 AND 3 CONNECTED
RESONANCE	OPEN CIRCUIT PRIMARY RESONANCE 1.4KHZ TO 4.5 KHZ

NOTES

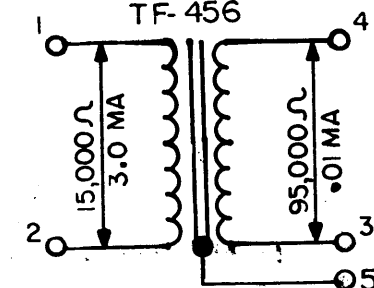
- TRANSFORMER TO CONFORM TO ALL REQUIREMENTS OF MIL-T-27A MODIFIED AS LISTED BELOW
- TERMINAL ARRANGEMENT OPTIONAL WITHIN MOUNTING AREA INDICATED ON THE TEMPLATE BUT TERMINALS MUST MAINTAIN A MINIMUM CLEARANCE OF .060 TO CHASSIS.
- MOUNTING HARDWARE NOT SUPPLIED
- PRESERVATION, PACKAGING, PACKING AND MARKING FOR DOMESTIC SHIPMENT FOR IMMEDIATE USE.
- MARKING MUST INCLUDE TYPE TF4RX20YY CIRCUIT DIAGRAM AND BUREAU OF ORDNANCE DRAWING NO. 1626636.
- CASE YY SAME DIMENSIONS AS TYPE AF CASE EXCEPT FOR MOUNTING STUD LOCATION

440NC. X.38
(2 STUDS)

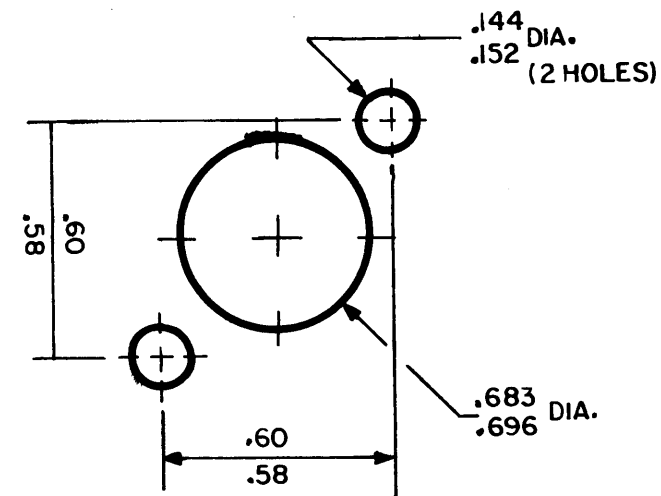


CIRCUIT DIAGRAM & MARKING ON THIS SIDE

TECHNICAL MATERIEL CORPORATION
MAMARONECK, NY 82679
TF-456



BUORD NO.1626636
TF4RX20YY
CIRCUIT DIAGRAM & MARKING



TEMPLATE CHASSIS CUTOUT

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
TRANSFORMER REF. BUORD. 1626636				
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE	
B	82679	TF456		
SCALE	SHEET		OF	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES

DECIMALS	FRACTIONS
.X ± .05	1/64
.XX ± .01	TOLS. ANGLES
.XXX ± .005	0° .30'

MATERIAL

FINISH

FINAL APPROVAL	DATE
MECH. DES.	DATE
ELECT. DES.	DATE
CHECKED	DATE
DRAWN	DATE

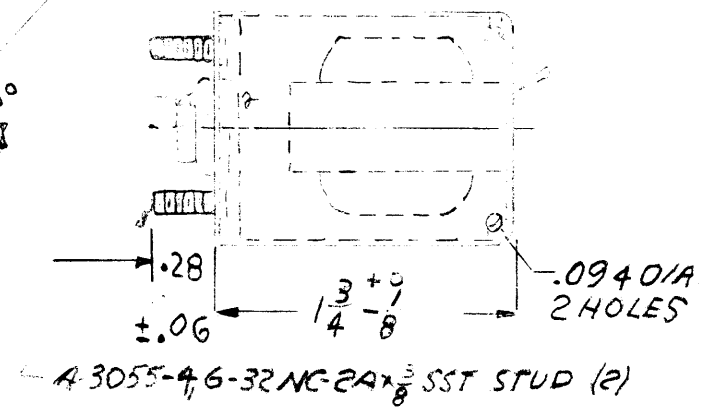
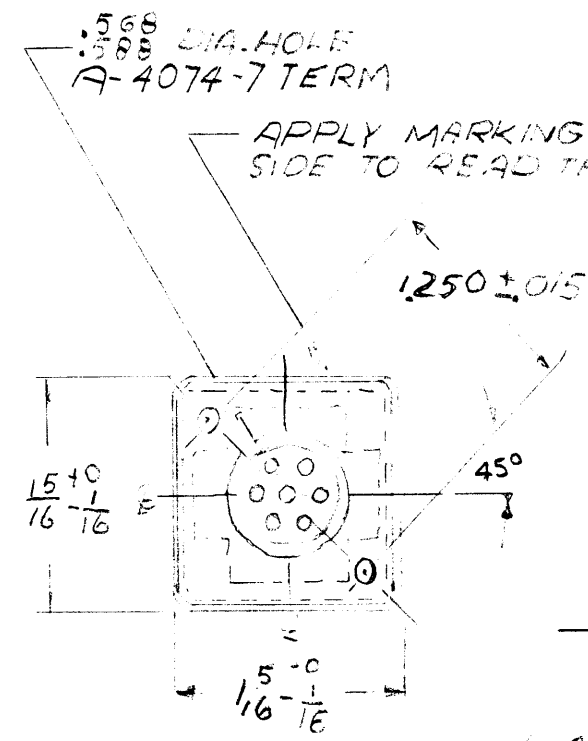
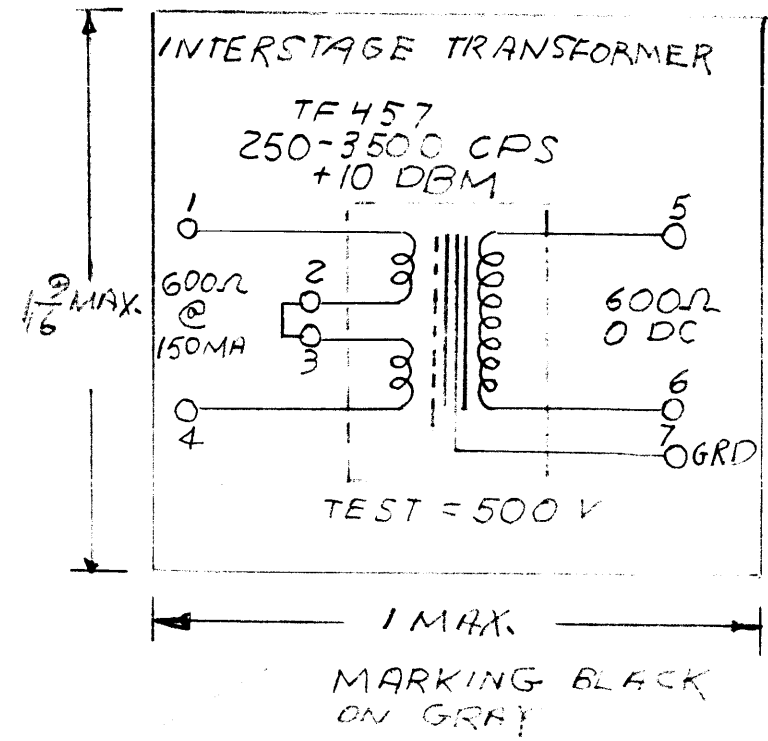
QTY / UNIT	MODEL USED ON	ASS'Y NO.
APPLICATION		
	CODE	

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REVISIONS							
EM.N.NO	DRAFT	CHKD	ZONE	LTR	DESCRIPTION	DATE	APPROVED

TOLERANCES UNLESS OTHERWISE SPECIFIED $\pm \frac{1}{32}$

- UNIT TO BE HERMETICALLY SEALED-USE 60/40 ROSIN CORE SOLDER AT LID(S), TERM(S), & PLUGS ETC. & SILVER SOLDER & BORAX FLUX AT MTG. STUDS/INSERTS.
- UNIT SHALL BE COATED WITH AN FUNGICIDAL VARNISH PER MIL-V-173A.
- FINISH PLATE PER A-1231, PAINT LIGHT GRAY ENAMEL PER MIL-E-15080, TYPE III CLASS 2, FED STD. 595 COLOR NO 26622. DO NOT PAINT LID



QTY / UNIT	MODEL USED ON	ASS'Y NO.
APPLICATION		
CODE		
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FINISH		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	FRACTIONS 1/64 ANGLES 0° - 30'
MATERIAL	
FINISH	

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
<p>FINAL APPROVAL <i>O.R.</i> DATE <i>10/10/66</i></p> <p>MECH. DES. DATE</p> <p>ELECT. DES. DATE</p> <p>CHECKED DATE</p> <p>DRAWN <i>F.P.</i> DATE <i>10/7/66</i></p>				
<p>THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK</p> <p>TRANSFORMER, INTERSTAGE AUDIO</p>				
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE	
B	82679	TF 457		
SCALE	SHEET		OF	

5

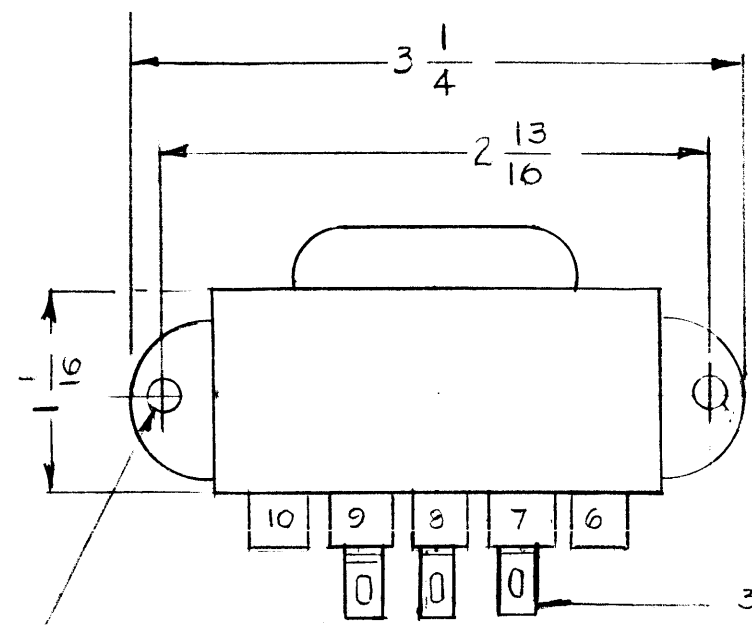
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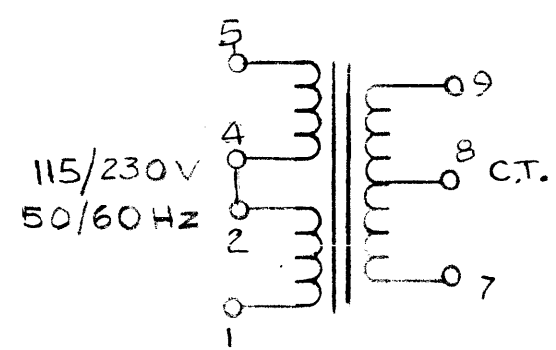
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REVISIONS							
EM.N. NO.	DRAFT	CHKD	ZONE	LTR	DESCRIPTION	DATE	APPROVED

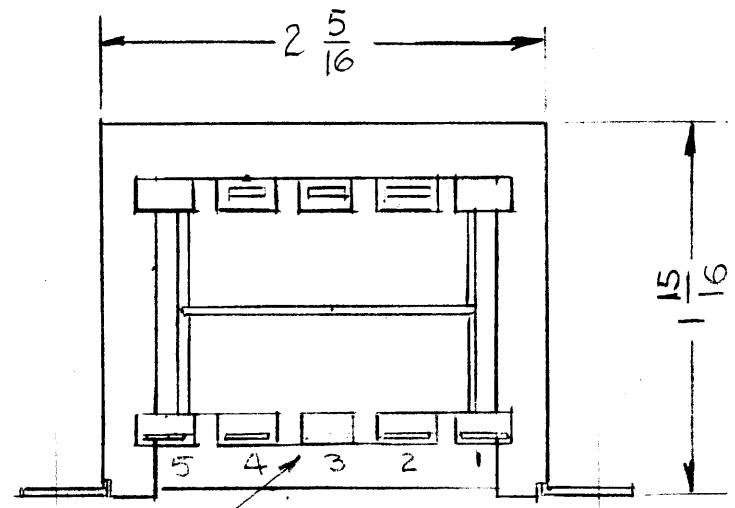


3/16 DIA
MTG HOLES
(2)

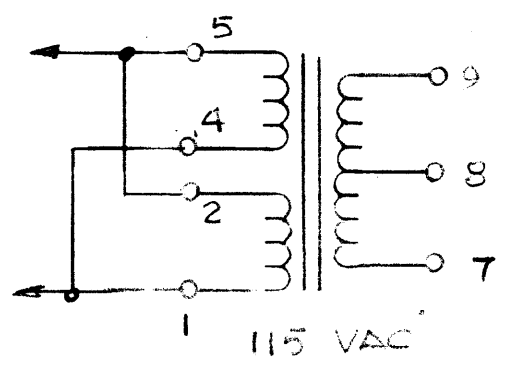
3/16 SOLDER TERMS.



SCHMATIC
DIAGRAM



PRIMARY



~ ELECTRICAL SPECIFICATION ~
PRIMARY: 115 / 230 VAC
SECONDARY: 48V C.T @ 0.63A.

MFG. SIGNAL XFMR CO.
CATALOG-68
DP 241-6.48 BSP.

1	BSP-35	
QTY / UNIT	MODEL USED ON	ASS'Y NO.
APPLICATION		
CODE		

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	FRACTIONS TOLS. 1/64 ANGLES 0°-30'
MATERIAL	
FINISH	

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
FINAL APPROVAL <i>GDL</i> DATE 12/10/92				
MECH. DES. DATE				
ELECT. DES. DATE				
CHECKED DATE				
DRAWN <i>GDL</i> DATE 11/1/92				
SIZE B		CODE IDENT. NO. 82679	DWG NO. TF 459	ISSUE 1
SCALE			SHEET	OF

THE TECHNICAL MATERIEL CORP.
MAMARONECK, NEW YORK

TRANSFORMER, POWER

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1