OWNERS MANUAL
MODEL 250C
STEREO POWER AMPLIFIER

-IMPORTANT-

PLEASE READ THIS PAGE BEFORE OPERATING

YOUR

BGW POWER AMPLIFIER

Your new BGW power amplifier is designed to provide years of trouble free performance. Observing these few precautions will insure proper operation.

Never connect the output of one channel with that of another.

Never connect a direct short from the output of any channel to ground.

Connect the power cord to the proper voltage mains (normally this will be 105-120 volts AC, 50-60Hz).

Do not remove the factory lead seal. Amplifiers will not be covered under warranty if the seal is broken. There are NO adjustments within.

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1. DESCRIPTION

The BGW Model 250C is one of the most advanced dual solid state power amplifiers available.

Unique design features incorporated in the Model 250C make it virtually "FAIL SAFE" and free from accidental damage caused by human error in audio service.

A fast acting relay circuit is employed as a safeguard for your speakers. The circuitry controlling the relay constantly monitors the individual outputs of each channel. When any positive or negative DC component of more than ±10 volts occurs at the output, the circuit activates the relay which disconnects the speakers from the amplifier. The speed at which the relay responds is approximately 20 milliseconds (see figure 1). The relay circuit also supplies a time delayed connection of the speakers to the amplifier to eliminate unwanted noises at turn on.

On the front panel, the on-off switch, gain controls, and the L.E.D. pilot lamp and clipping indicators are mounted for ready use.

The packaging inside your 250C is unlike ordinary power amplifiers. Each channel assembly is on its own separate module, which simply plugs in or out for quick and easy service. Each of these units is constructed on a large aluminum extrusion. The total radiating surface area of each heat sink is 330 square inches. The heat sinks have mating circuit boards which carry the passive components. Each unit's wiring is identical with the next as the circuits are photo etched. The heat sinks plug in with an 8-pin connector.

The output stage of your amplifier uses the most advanced type of transistors available. These large geometry power devices have large safe operating area along base with extended power bandwidth. All the semiconductors in the output stage are in intimate contact with the heat sink. The bias circuit is also mounted on this isotherm which provides rock steady bias stability with temperature.

The voltage gain circuits are also mounted on the same circuit card. A true operational amplifier integrated circuit, hermetically sealed in a metal can, acts as the front end. The op amp (as they are called) is a special unit featuring high speed (15 MHz) and a high slew rate (50 volts/microsecond) yet still having very low noise due to its darlington input stage and careful design. The op amp stage is followed by a discrete complementary pair acting as active current source/sink and providing additional voltage gain. The current source is the ideal way to drive the output stage which is basically a voltage follower.

This sophisticated circuit design makes for an extremely accurate amplifier. The open loop gain is higher than found in the competitors' products. The accuracy of an amplifier is a function of the ratio of the open loop gain to the closed loop gain. In this case, the open loop gain is about 1,000,000. This extremely accurate signal processing enables the Model 250C to drive speakers at very high levels while adding absolutely no coloration of its own. Even at milliwatt levels the output waveform exhibits no sign of crossover distortion. The dynamic range capability of a typical 250C is almost 115dB.

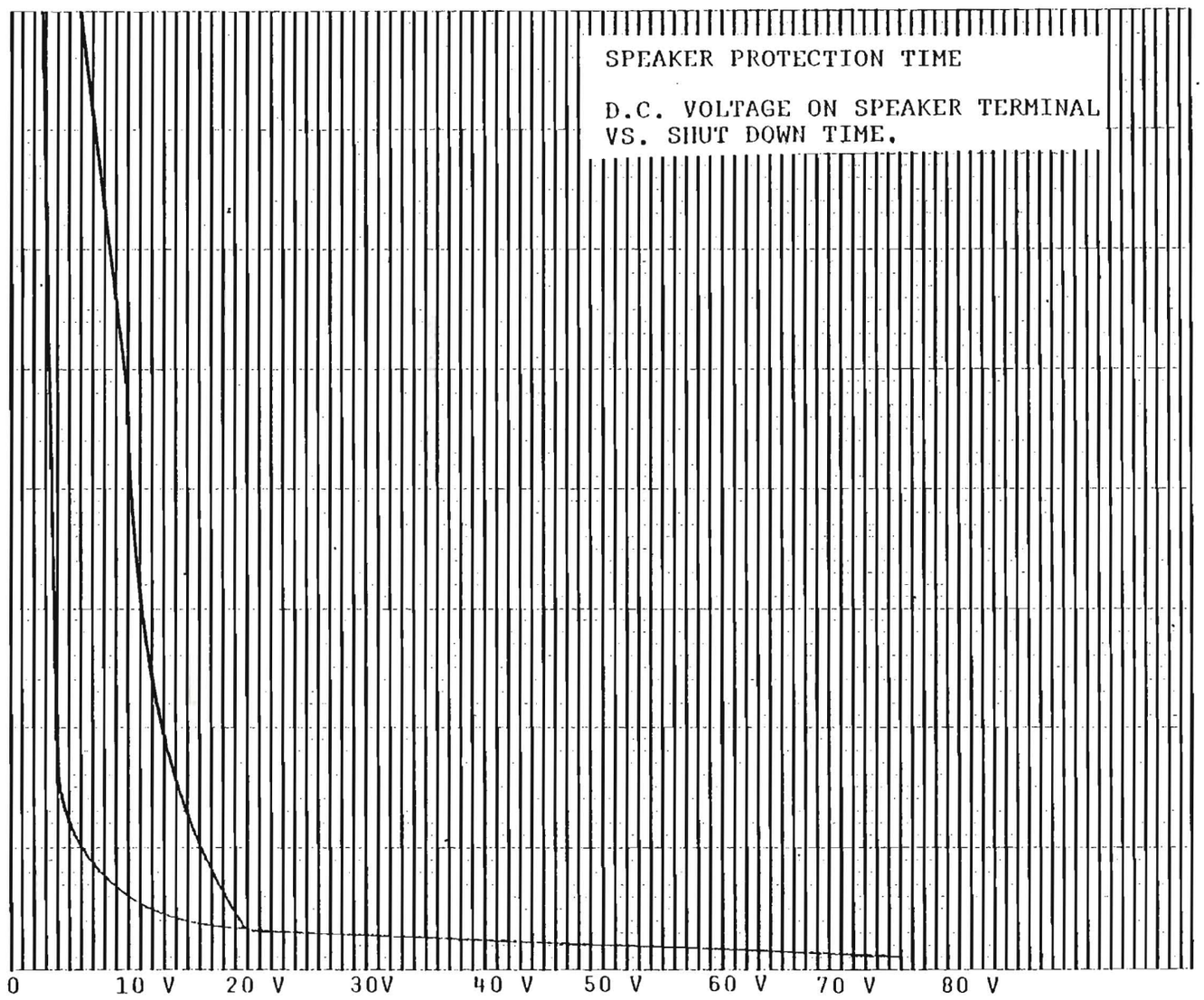

1 second
875 ms
750 ms
625 ms
500 ms
375 ms
250 ms
125 ms
SPEAKER PROTECTION TIME
D.C. VOLTAGE ON SPEAKER TERMINAL
VS. SHUT DOWN TIME.
0
10 V
20 V
30V
40 V
50 V
60 V
70 V
80 V
D. C. VOLTAGE

Figure 1

2. SPECIFICATIONS

The following specifications are guaranteed minimum performance levels, not typical or best case numbers measured under desired conditions. All test procedures used are according to the most conservative techniques in use today.

STEREO MODE - 8 OHMS

POWER OUTPUT:
100 watts average continuous power per channel

TOTAL HARMONIC DISTORTION:
Less than 0.1% from .25-105 watts per channel

POWER BAND: (at rated power)
20 Hz - 20 kHz

INPUT SENSITIVITY:
Approximately 1.5 volts required for full output

DAMPING FACTOR:
Greater than 500 at low frequencies

STEREO MODE - 4 OHMS

POWER OUTPUT:
126 watts average continuous power per channel

TOTAL HARMONIC DISTORTION:
Less than 0.15% from .25-190 watts per channel

POWER BAND:
20 Hz - 20 kHz

INPUT SENSITIVITY:
Approximately 1.25 volts required for full output

STEREO MODE - ANY IMPEDANCE

GAIN:
26dB (20x)

OUTPUT IMPEDANCE:
Designed for any load impedance greater than 2 ohms

MONO MODE - 16 OHMS

POWER OUTPUT:
230 watts average continuous power

TOTAL HARMONIC DISTORTION:
Less than .1% from .25-230 watts per channel

POWER BAND:
20Hz - 20kHz

INPUT SENSITIVITY:
Approximately .75 volts required for full output

MONO MODE - 8 OHMS

POWER OUTPUT:
251 watts average continuous power

TOTAL HARMONIC DISTORTION:
Less than .15% from .25-360 watts per channel

POWER BAND:
20 Hz - 20 kHz

INPUT SENSITIVITY:
Approximately .60 volts required for full output

MONO MODE - ANY IMPEDANCE

GAIN:
32dB (40x)

OUTPUT IMPEDANCE:
Designed for any load impedance greater than 4 ohms

ANY MODE

FREQUENCY RESPONSE:
+0, -.25dB 20Hz to 20kHz
+0, -3dB 2Hz to 65kHz

IM DISTORTION:
(60 and 7 kHz 4:1)
Less than .02% at rated power

INPUT IMPEDANCE:
47,000 ohms

RISE TIME:
3 microseconds - indicating a bandwidth of 65 kHz

HUM AND NOISE (20Hz - 20kHz)
106 dB below rated power

POWER REQUIREMENT:
105-120 volts 50-60Hz at 5 amps maximum or 210-240 volts at 2.5 amps maximum.

TURN ON:
Time delay relay turn on, no switching transients or thump will appear at output.

OUTPUT PROTECTION:
Each channel is protected against shorts, open circuit operation, mismatched loads, etc.

LOAD PROTECTION:
A unique relay circuit protects speakers against malfunction.

OVERALL PROTECTION:
Power line is protected with fast acting circuit breaker. No fuses of any kind are used. Two thermal switches (one per channel) protect against over temperature operation. Controlled power bandwidth and slew rate protect tweeters and amplifier against excessive high frequency operation. Input overload protection is afforded op amp by series limiting resistance.

POWER SUPPLY:
A large power transformer with twin primary windings is used. Computer grade electrolytic capacitors storing over 22 joules of energy, and a 25 amp bridge rectifier are employed. Two zener regulated supplies power each operational amplifier front end.

POWER REQUIREMENTS:
Unit requires either 105-120V AC or 210-240V 50-60Hz power. A 5 amp circuit breaker is supplied for units wired for 120V operation or a 2.5 amp breaker for 240V operation.

HEAT SINKING:
Each channel has its own removable heat sink. Each extrusion has 330 square inches of surface area.

CHASSIS:
A heavy steel chassis forms a protective cage for unmatched mechanical strength. A 3/16" aluminum rack mount panel is supplied. All modules are bolted to the chassis. The power supply is set close to the front panel to allow rack mounting without the use of guide rails or supports.

CONNECTORS:

Output:	Standard 3/4" spacing, 5 way binding posts for outputs (color coded for easy identification).
Input:	1/4" phone jack, 3 pin female audio connector.
AC Line:	Three wire grounded mail connector on five foot min. cable.

MODULES:
Three plug-in modules contain 95% of the circuitry. Modules consist of two heat sink channel assemblies and one relay circuit board.

CIRCUIT BOARDS:
Flame retardant glass epoxy boards per mil spec.

DIMENSIONS:
Panel 19" W x 5¾" H x 11-3/4" D - black annodized-grained aluminum.
The notching is standard E.I.A./Western Electric.

WEIGHT:
27 pounds net weight.
35 pounds packaged weight.
Shipping container: a unique double boxed system providing maximum safety for the unit.

3. WARRANTY

BGW Systems warrants all power amplifiers for a period of three years from date of manufacture. This warranty covers both defects in workmanship and/or materials. If malfunction does occur, the product will be repaired or replaced (at our option) without charge for materials or labor, if returned prepaid to BGW. The warranty does not cover equipment damaged due to negligence, misuse, shipping damage or accident, or if the serial number is defaced, altered or removed. Furthermore, units that are altered, modified or improperly serviced, in any instance, will not be repaired under terms of warranty.

4. FACTORY SERVICE

Should service be required, please fill out the Service Authorization Form and mail it to BGW Systems. All units must be shipped prepaid in the factory supplied shipping container, in order to prevent damage in transit. Units will be returned by freight collect.

5. INSTALLATION

UNPACKING:
Your BGW power amplifier is shipped in an advanced double boxed container. The container should be saved in event the unit is moved or shipped at some future date. Replacement containers are available from BGW Systems.

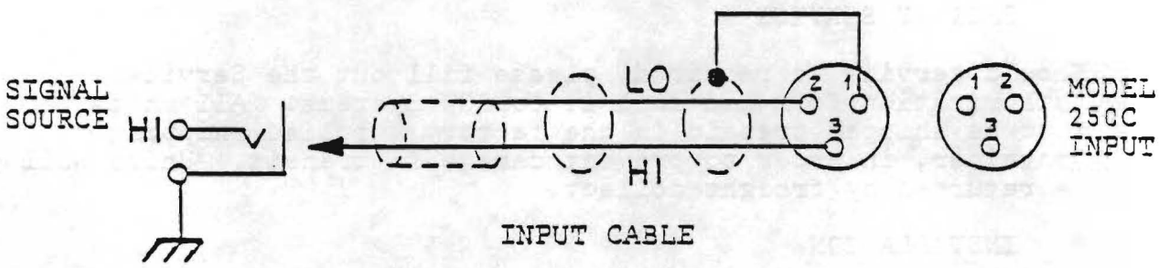
Inspect the unit for damage in transit immediately upon receipt. If damage is found, notify the transportation company immediately. Only the consignee may institute a claim with the carrier for shipping damage. BGW will cooperate fully in such event. Be sure to save the container as evidence of damage for the shipper to inspect.

MOUNTING:
The BGW power amp is supplied with a heavy standard 19" rack panel. The unit may be bolted into a rack by the front panel as long as provisions for unrestricted air flow are provided. Good ventilation practice will provide for air flow above and below the unit. Inadequate ventilation may cause the protective thermal switches to shut the unit off.

Normal Installation:
All connections should be made <u>before</u> power is applied. The 250C is designed to operate in either the Stereo (2-channel) mode or Monaural (bridged) mode. A slide switch located on the rear of the unit switches from one mode to the other. Select the mode required, then follow the directions below.

INPUT CONNECTIONS - STEREO MODE

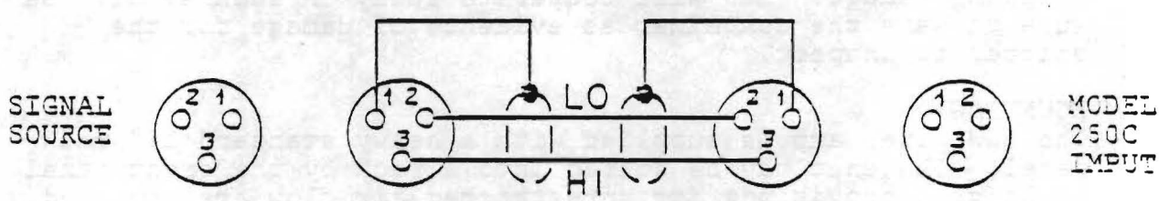
Shielded output cables from the preamplifier should be connected to the two input jacks on the amplifier. On the Model 250C the input jacks require standard 1/4" diameter phone plugs; (the input lines should be unbalanced) or three-pin, male audio connectors (such as the Cannon XL Series, or Switchcraft A3 Series). To use the Model 250C with high impedance, unbalanced input lines, use the jumper plug provided in the transformer socket and connect the input cables as follows:



INPUT CABLE

NOTE: SHIELD NOT CONNECTED TO ANYTHING AT SIGNAL SOURCE.

To use the Model 250C with balanced input lines, remove the jumper plugs from the transformer sockets and replace them with transformers of the desired impedance. Connect the input cables as follows:

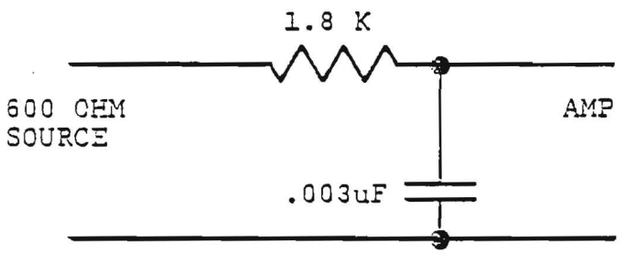


INPUT CABLE

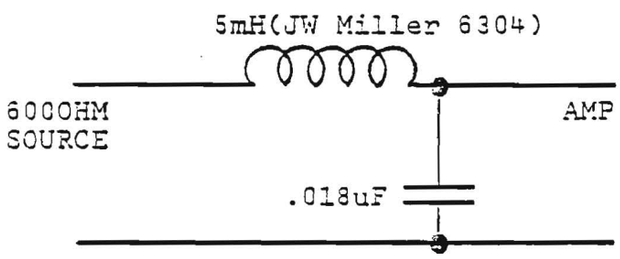
Input connections should be as short and direct as possible. Shielded cables must be used and both should originate from the same source (i.e., if both channels do not come from the same preamps, ground loop problems may arise).

The source must be capable of delivering 1.25 volts for full output from the amplifier.

For maximum signal to noise ratio driving source impedance should be less than 5,000 ohms. Radio frequency interference (RFI), when it occurs, can be reduced or eliminated by employing one of the filters shown below. They should be built in shielded enclosures such as 35mm. aluminum film cans.



6dB/octave rolloff above 20kHz.



12dB/octave rolloff above 20kHz

INPUT CONNECTIONS - BRIDGE MODE:
Follow the same procedure as outlined for Stereo Mode but use only one shielded cable plugged into channel 1. Do not connect anything to the input of channel 2.

OUTPUT CONNECTIONS - STEREO MODE:
Connect the left speaker to the binding posts marked CH 1 and the right speakers to the binding posts marked CH 2. Observe the phasing of the speakers. Most connectors on speaker cabinets are either color coded or marked +, -. Connect the black or minus (-) terminal on the speaker cabinet to the black binding posts on the amplifier. Connect the other speaker terminal to the red binding post.

The wires used for the speaker leads should be of the largest gauge possible in order to retain the highest damping factor possible. The chart provided shows the relation between wire size and damping factor.

To find the damping factor of a particular configuration of wire size and length and speaker impedance, take a ruler and line up the length of two-conductor-cable used with the wire gauge used and mark the resulting source resistance. Then line up this value with the resistance of the load and read off the resulting damping factor. For dynamic moving coil speakers, the load resistance should be that measured with an ohmmeter across the speaker terminals, not the manufacturer's stated impedance value. For electrostatic speakers, the manufacturer's value should be used. For best results, choose a configuration of wire size and length that will result in a damping factor of 50 or greater. Ideally, the output leads should be connected to the amplifier with standard banana plugs; however, the five-way action of the binding posts permits the use of tinned wires or spade lugs.

OUTPUT CONNECTIONS - BRIDGE MODE:

Follow the same procedure as outlined for Stereo mode but connect the single output across the two red binding posts of Channels 1 and 2. Do not connect anything to the Channel 1 or Channel 2 ground binding posts.

CONNECTING POWER MAINS:

The 250C is furnished with a three wire cord and a ground plug. Defeating the grounding provision may create hazardous conditions. The amplifier should be plugged in only when it has been established that it is wired for the correct power mains voltage and after all other connections to the amplifier have been made.

The mains (AC line) voltage is indicated on the serial number label on the rear of the amplifier. Amplifiers supplied for use in the United States are factory wired for 120 volts. Only the indicated mains voltage should be used. If the mains voltage must be changed, see the next page.

CHANGING THE MAINS VOLTAGE:
The mains voltage may be changed in the field by following procedure:

1. Remove the amplifier cover.

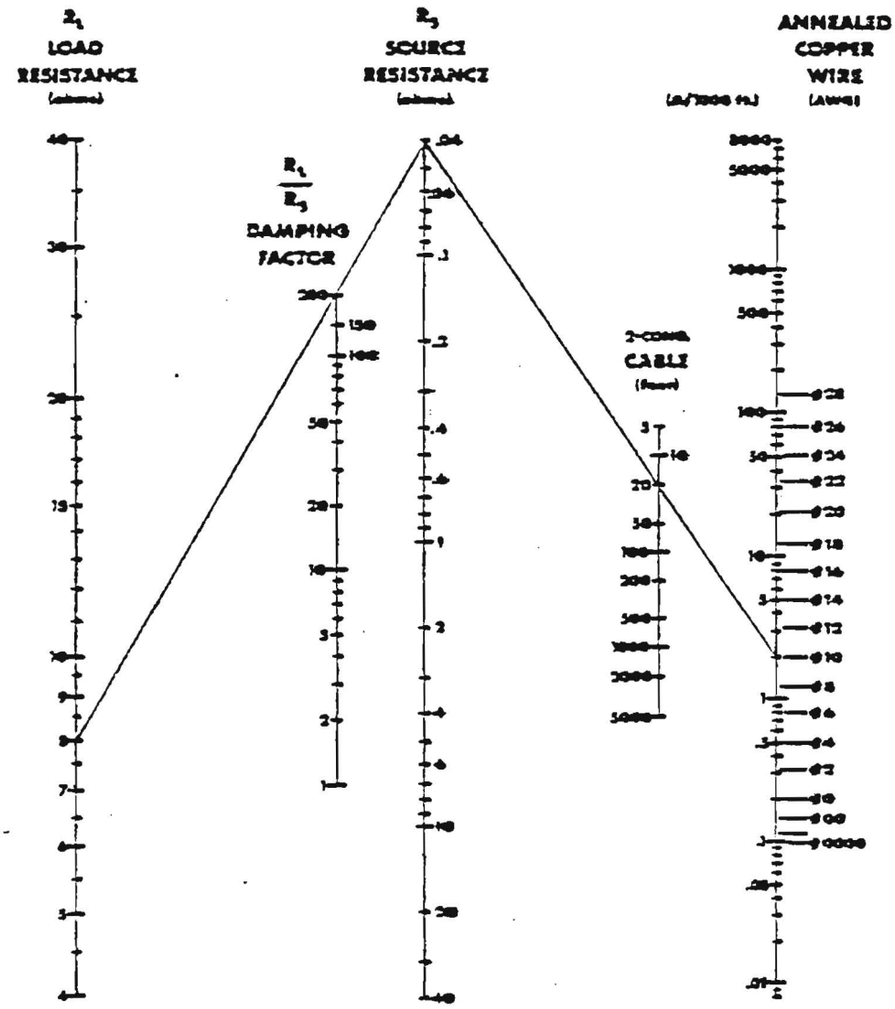
2. Change the transformer wires going to the mains barrier strip to match the appropriate column of the chart below:

	120V	240V
TOP 1		
2	Yellow Brown	Brown
3	Red	Yellow Orange
4	Orange Blue	Blue
5		Red
6	Green	Green

3. Change the circuit breaker on the front panel as follows:

   For 100 and 120 volt operation, use 6 amp.
   For 240 volt operation, use 3 amp.

   Replacement breakers are available from BGW Systems for $10.00 each, postpaid. Include the serial number and model of your unit when you order.



EXAMPLE: R_L = 8Ω, R_S = .04Ω OR D.F. = 200
CABLE LENGTH OF 20 FT. ANSWER: #10 WIRE

FIGURE 2
SOURCE RESISTANCE AND DAMPING FACTOR VS. LENGTH AND SIZE OF OUTPUT LEADS

6. OPERATION

TURN ON:
The Model 250C is free from thumps or transients during turn on. Often, turn-on transients originate in the preamp or tuner. This is especially true of tube-type units. If this situation arises, turn the amplifier on after the other units have had sufficient time to stabilize.

PROTECTION:
Three protection circuits are employed in the Model 250C.

1. The fast acting magnetic circuit breaker shuts the unit down whenever the unit draws excessive current.

2. The fast acting relay circuit instantaneously disconnects the amp outputs from the speakers if any condition exists that will damage the speakers.

3. Thermal switches mounted on each heat sink protect the amplifier from thermal failure. The amplifier will shut off if the heat sink temperature rises above 85 degrees Centigrade and will turn on again when the temperature drops. Activation of the thermal switches usually means that insufficient air circulation is being allowed.

PARTS LIST

HEATSINK MODULE

REFERENCE NO.	PART NO.	DESCRIPTION	QTY.
RESISTORS			
R28-33	4050-0330R	.33ohm 5W	6
R34	4025-2070	2.7ohm 2W	1
R25,26,27	4025-1001	10ohm 2W 5%	3
R35	4050-3001	30ohm 5W	1
R23,24	5005-6800	68ohm ½W	2
R22,10	5005-1002	100ohm ½W	2
R16,19,20	5005-6801	680ohm ½W	3
R2,6,9,13	5005-1003	1K ½W	4
R8,4	5005-1502	1.5K ½W	2
R5	5001-2491	2.49K ½W 1%	1
R1, R42	5005-4702	4.7K ½W	2
R17,18	5005-1503	15K ½W	2
R3,15,40,36	5005-4703	47K ½W	4
R7,4	5061-4752	47.5K ½W 1%	2
R37,38,41	5005-1005	100K ½W	3
R1	5005-1006	1Meg. ½W	1
R39	5005-1004	10K ½W	1
R43	5005-3602	3.6K ½W	1
CAPACITORS			
C4,8	0100-0047	47 pf	2
C13	0090-0120	120 pf	1
C2	0090-0240	240 pf	1
C14,16	0100-1000	1000 pf	2
C5,6	0129-0047	.047 uf 25V	2
C15	0129-0100	.1 uf 25V	1
C17,18,19	0369-0100	.1 uf 100V	3
C1	0226-0010	10 uf 25V	1
C11,12	0486-0010	10 uf 100V	2
C3	0456-0050	50 uf 12V	1
C7	0100-0068	68 pf 1kV	1
C20	0369-0470	.47 uf 100V	1
C10	0100-5000	5000 pf 1kV	1

REFERENCE NO.	PART NO.	DESCRIPTION	QTY.
SEMICONDUCTORS			
Q1	1854-0410	40410	1
Q2	1854-0409	40409	1
Q5	1854-6211	2N6211	1
Q4	1854-3583	2N3585	1
Q3	1853-3053	40309	1
Q6-11	1854-0636	MJ15015	6
Q12	5401		1
CR1,2	1900-4740	1N4740A	2
CR3,4,6-9	1900-4004	1N4004	2
1C1	1885-0318	LM318H	1
Q12	1853-5401	2N5451	1
Q14,13	1854-0043	MPSA13	2
HARDWARE			
	0770-1312	Stand off B1532B	4
	1231-1112	Lug Molex 02-04-1	9
	0723-3347	Insulator Shoulder	16

PARTS LIST

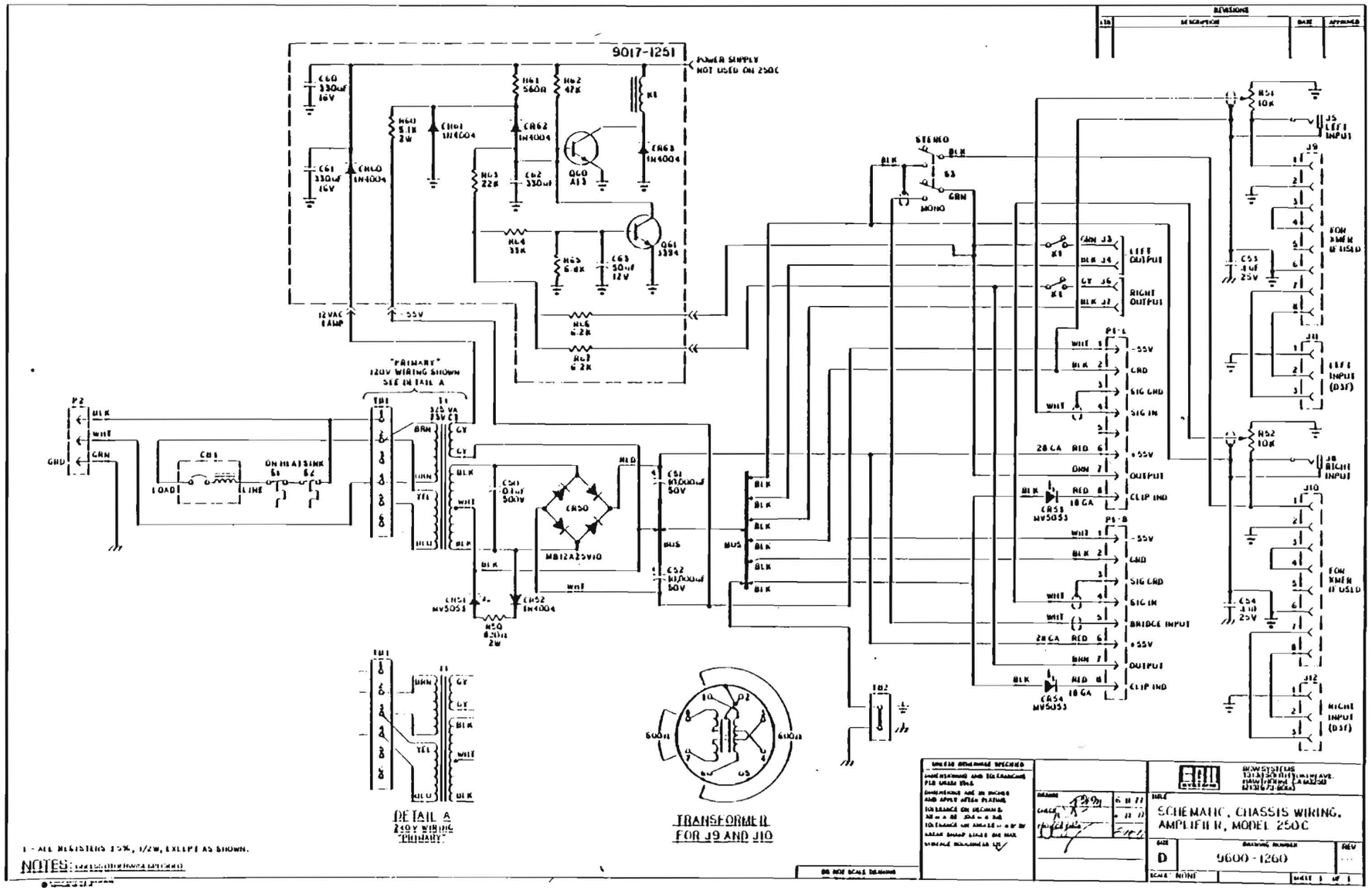
REFERENCE NO.	PART NO.	DESCRIPTION	QTY.
HEATSINK MODULE			
MISCELLANEOUS			
L1	9999-2440	.5uh coil fm.	1
J1	1202-0008	8 pin socket	1
	0630-3442	Thermal switch	1
	9007-0250	PCB HS250B	1
	1000-0250	250B raw HS	1
	1001-0260	Heatsink cup	1
	0723-0031	Insulator Mica TO-66	2
	0723-0321	Insulator Mica TO-3	6
	8902-0022	Teflon Tbg #22	1
RELAY CIRCUIT CARD			
RESISTORS			
R65	5005-6802	6.8ohm ½W	1
R66,67	5005-6202	6.2ohm ½W	2
R63	5005-2203	22ohm ½W	1
R62	5005-4703	47ohm ½W	1
R61	5005-5601	650ohm ½W	1
R64	5005-3303	33ohm ½W	1
R60	6025-5102	5.1ohm 2W	1
CAPACITORS			
C60,61,62	0466-0330	330uf 16V	3
C63	0456-0050	50uf 12V	1
SEMICONDUCTORS			
CR60,61,62,63	1900-4004	IN4004	4
Q60	1854-0013	MPS A13	1
Q61	1854-3394	MPS 3394	1

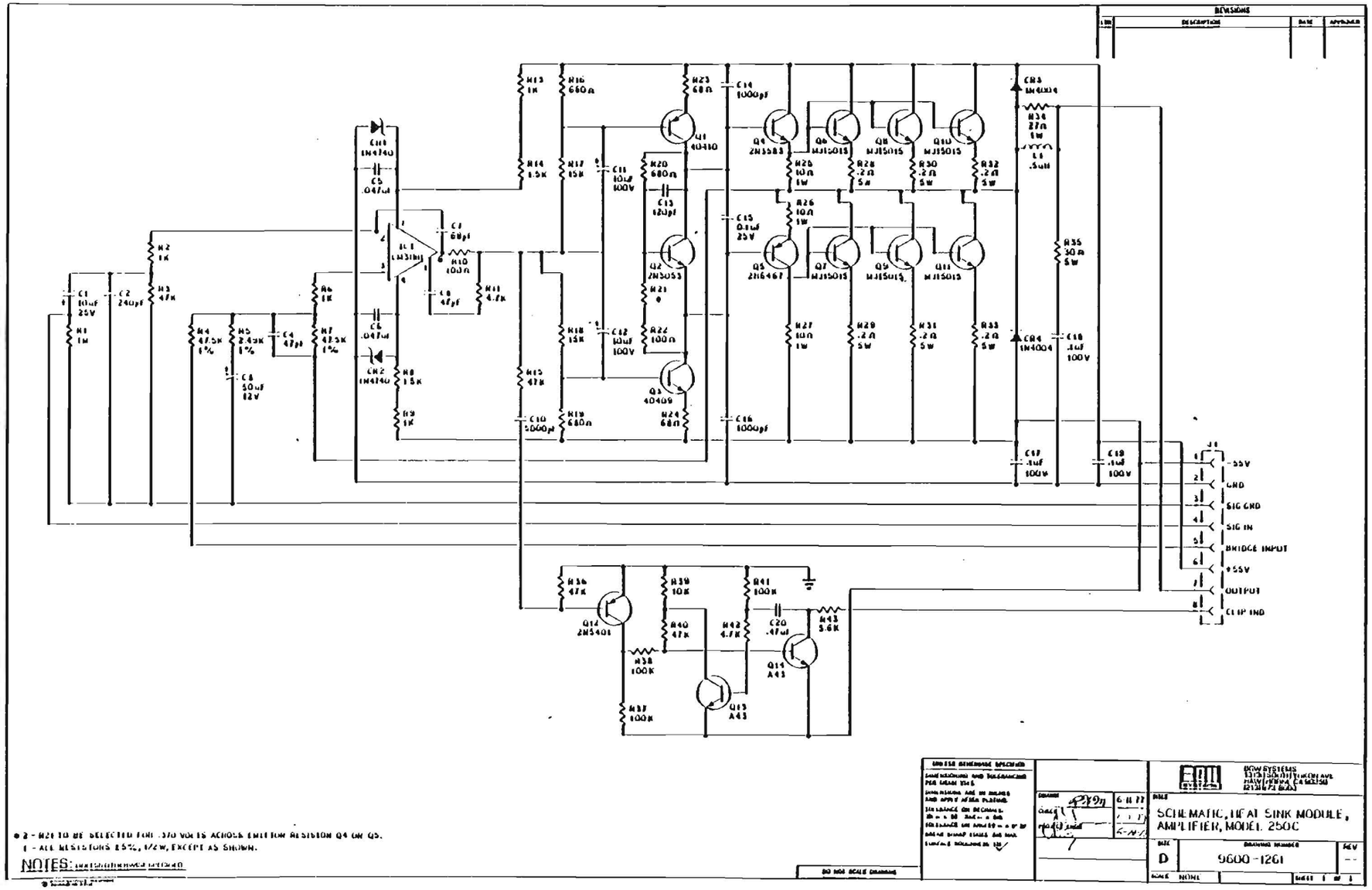
REFERENCE NO.	PART NO.	DESCRIPTION	QTY.
MISCELLANEOUS			
	9999-9002	Wire hold down RE	1
	0800-1000	Relay HP32 12VDC	1
	1004-1106	Magnet undox F110	2
	1204-1000	Socket relay	1
	9017-0251	PCB	1
	1349-9312	Molex Pins R93-12	8
CHASSIS			
RESISTORS			
R44	6010-8201	820ohm 1W	1
TRANSISTORS, DIODES			
CR12	1900-4004	IN4004	1
MB	1886-2502	Bridge Rect.	1
CR11	1990-0110	LED	3
CAPACITORS			
C18	0199-0100	.1uf 500V	1
C19,20	0543-0010S	10,000uf 75V	2
TRANSFORMER			
T1	0900-0260	Transformer 325V	1

PARTS LIST

REFERENCE NO.	PART NO.	DESCRIPTION	QTY.
PLUG, SOCKET, CONNECTORS			
	1231-3003	cnctr.Tm.	1
P1,2	1350-0008	Plug 8 pin	2
J5,8	9999-0111	Jack Input	2
J3,6	1231-0008	Red Binding post	2
J4,7	1231-0009	Black Binding post	2
TB1	0720-9126	Barrier Strip	1
J11,12	9999-0130	Jack Input D3F	2
J9,10	1203-0008	Socket 8 pin W/RI	2
HARDWARE			
	2605-6625	¼-20x5/8 brsh. Aluminum	4
	8607-0125	¼IDx½ODx.12	4
LUGS			
	1313-3457	Lug Crimp#10	9
	1322-9700	Lug slipon 16-14	18
	1321-5305	Lug slipon	2
	1231-1105	Lug Molex 02-05-1	8
METAL			
	9002-1260	Chassis 250C	1
	9000-1252	Front Panel	1
	9005-1260	Cover	1
MISCELLANEOUS			
P2	8706-0183	Line Cord	1
S3	0611-0191	Switch dpdt.	1
	9999-0019	Tie Wrap	25
	1235-0001	Clamp Cap.	2
	1235-6034	Clamp Strain Rel	1
CB1	0650-0602	Switch Rocker	1
	0721-0312	Barrier fish paper	1

REFERENCE NO.	PART NO.	DESCRIPTION	QTY.
	9999-2085	Feet Rubber 208S	4
COMPLETED ASSEMBLY			
	1000-1260	Heatsink Module	
	1100-1260	Harness	
	9017-1250	Crowbar	
PACKING CONTAINER			
	9700-1260	Manual	1
	9851-1250	Outer Box	1
	9850-1250	Inner Box	1
	9852-1250	Rail Block	2
	9854-0150	Corner Block	8


9017-1251
POWER SUPPLY
NOT USED ON 250C
STEREO
MONO
LEFT OUTPUT
RIGHT OUTPUT
-55V
GND
SIG GND
SIG IN
+55V
OUTPUT
CLIP IND
BRIDGE INPUT
J5 LEFT INPUT
J9 LEFT INPUT (D3F)
J8 RIGHT INPUT
J10 RIGHT INPUT (D3F)
"PRIMARY" 120V WIRING SHOWN SEE DETAIL A
DETAIL A
240V WIRING "PRIMARY"
TRANSFORMER FOR J9 AND J10
NOTES:
1 - ALL RESISTORS 5%, 1/2W, EXCEPT AS SHOWN.
SCHEMATIC, CHASSIS WIRING, AMPLIFIER, MODEL 250C
9600-1260
SIZE D
SCALE NONE



● 2 - R21 TO BE SELECTED FOR .370 VOLTS ACROSS EMITTER RESISTOR Q4 OR Q5.

1 - ALL RESISTORS ±5%, 1/2W, EXCEPT AS SHOWN.

NOTES: UNLESS OTHERWISE NOTED.

WARRANTY REGISTRATION

Please fill out and return this card within 2 weeks from date of purchase.

NAME:_____ DATE PURCHASED:_____

ADDRESS:_____ PHONE:_____

CITY:_____ STATE:_____ ZIP:_____

PURCHASED FROM: _____
Dealer

_____
Address

_____
City State Zip

MODEL NUMBER:_____

SERIAL NUMBER:_____

PURCHASE PRICE:_____

For What Purpose Is The Unit Intended?

Home_____
Studio_____
Sound Reinforcement_____
Other (explain)_____

Is this amplifier a replacement for an existing unit?

If yes, what kind?_____

Why did you choose a BGW power amplifier?

____Dealer Recommendation ____Magazine Advertisement
____Sound Quality ____Technical Design
____Friend's Recommendation ____Other_____

COMMENTS:

PLACE
STAMP
HERE

BGW
SYSTEMS

13130 SOUTH YUKON AVENUE
HAWTHORNE, CALIFORNIA 90250

FOLD HERE

SERVICE AUTHORIZATION FORM

Please complete this form as completely as possible and return to BGW Systems before returning unit.

NAME:_____ PHONE:_____

ADDRESS:_____
(City) (State) (Zip)

UNIT:_____ _____
MODEL SERIAL NUMBER

1. Describe symptoms:

2. Which channel(s) exhibits the problems?

3. What other equipment was involved?

	Manufacturer	Model No.
Preamp	_____	_____
Speakers	_____	_____

4. Under what conditions does the problem occur (check those that apply).

   a. all the time _____
   b. after awhile _____
   c. at high volume levels _____
   d. at high temperatures _____
   e. other (explain)

5. How often did the problem occur?

6. What did you do to isolate the problems to the power amp?

7. Further Comments:

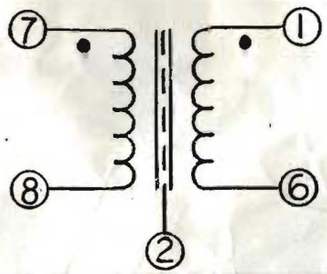
It is more expedient to call your dealer or our factory explaining the nature of your problem. In many instances the problem can be solved without returning the unit to the factory. WARNING: The unit must be returned in an original factory container. If you do not have one, we will provide a replacement for $14.00. Factory authorized warranty repair stations are located throughout the U.S. Call your dealer or the factory for the location of the service station nearest you.

PLACE
STAMP
HERE

BGW
SYSTEMS

13130 SOUTH YUKON AVENUE
HAWTHORNE, CALIFORNIA 90250

FOLD HERE



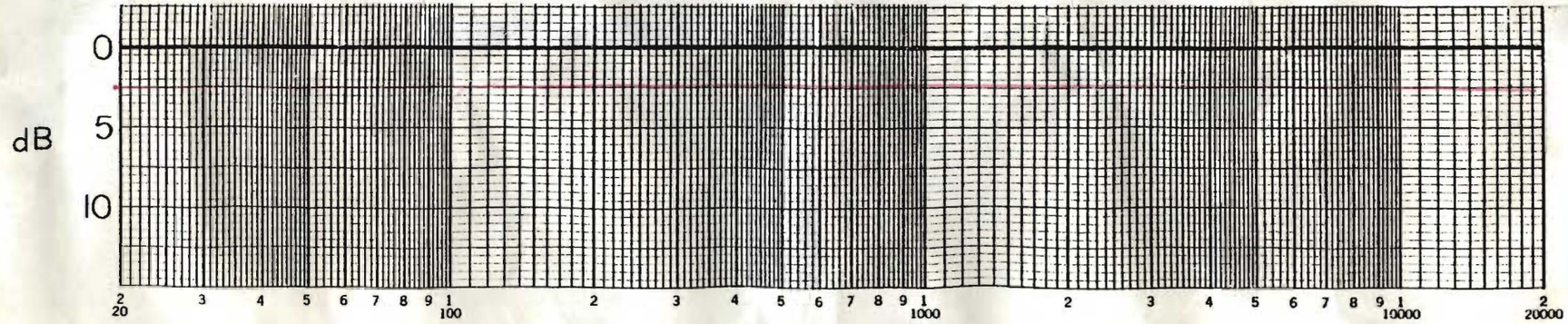
POLARITY _____
INSERTION LOSS _____
FREQUENCY RESPONSE _____

BGW SYSTEMS

0900-9250
BRIDGING TRANSFORMER
15K - 15K

TESTED BY

20 - 20K RESPONSE
600 OHM DRIVER
15K NOM. LOAD
0dB REF.



FREQUENCY IN CYCLES PER SECOND