

audio research

H I G H D E F I N I T I O N[®]

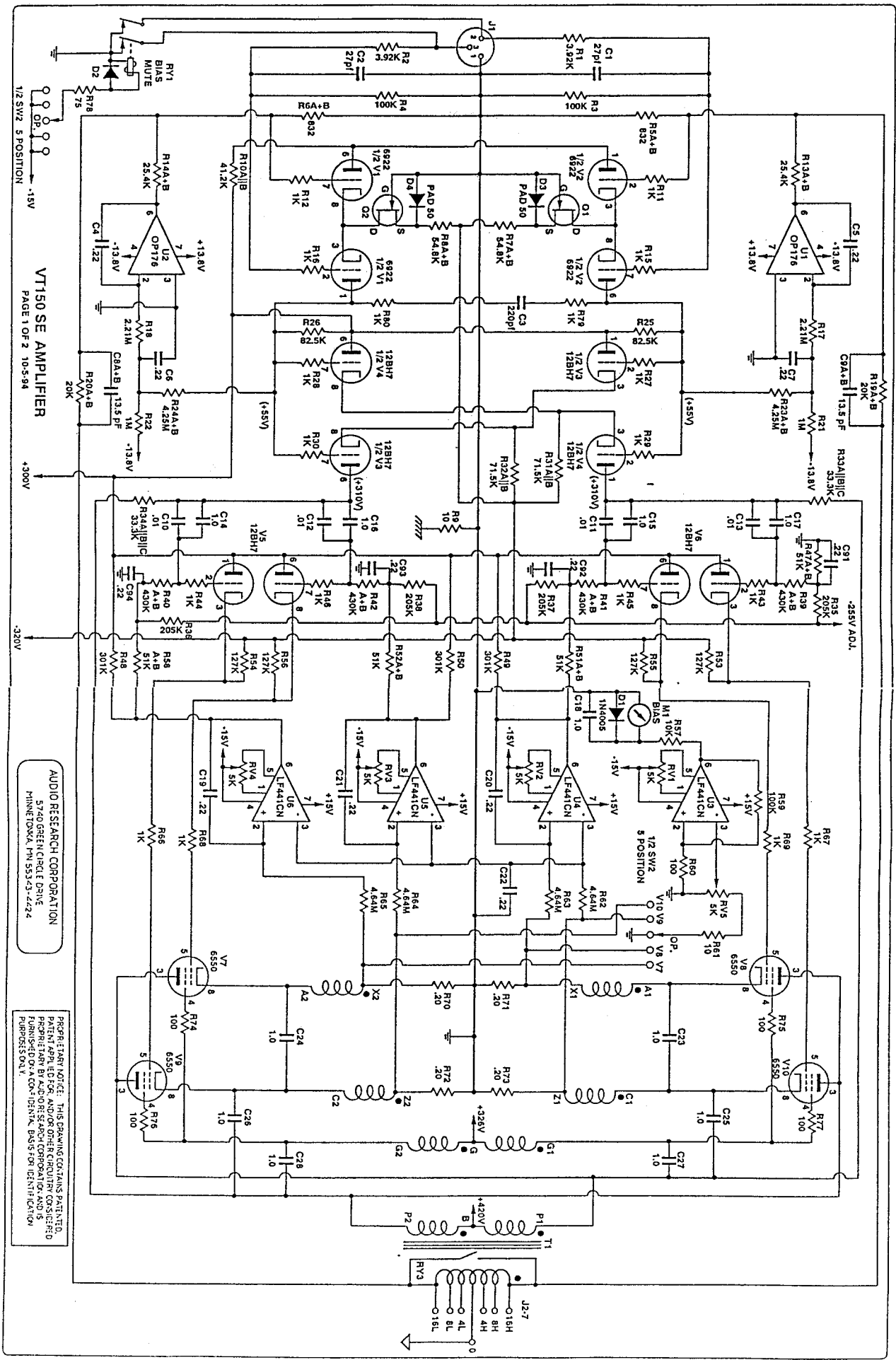
5740 GREEN CIRCLE DRIVE / MINNETONKA, MINNESOTA 55343-4424 / PHONE 612/939-0600 FAX 612/939-0604

VT150SE AMPLIFIER

SCHEMATIC

AND PARTS LIST

10-5-94

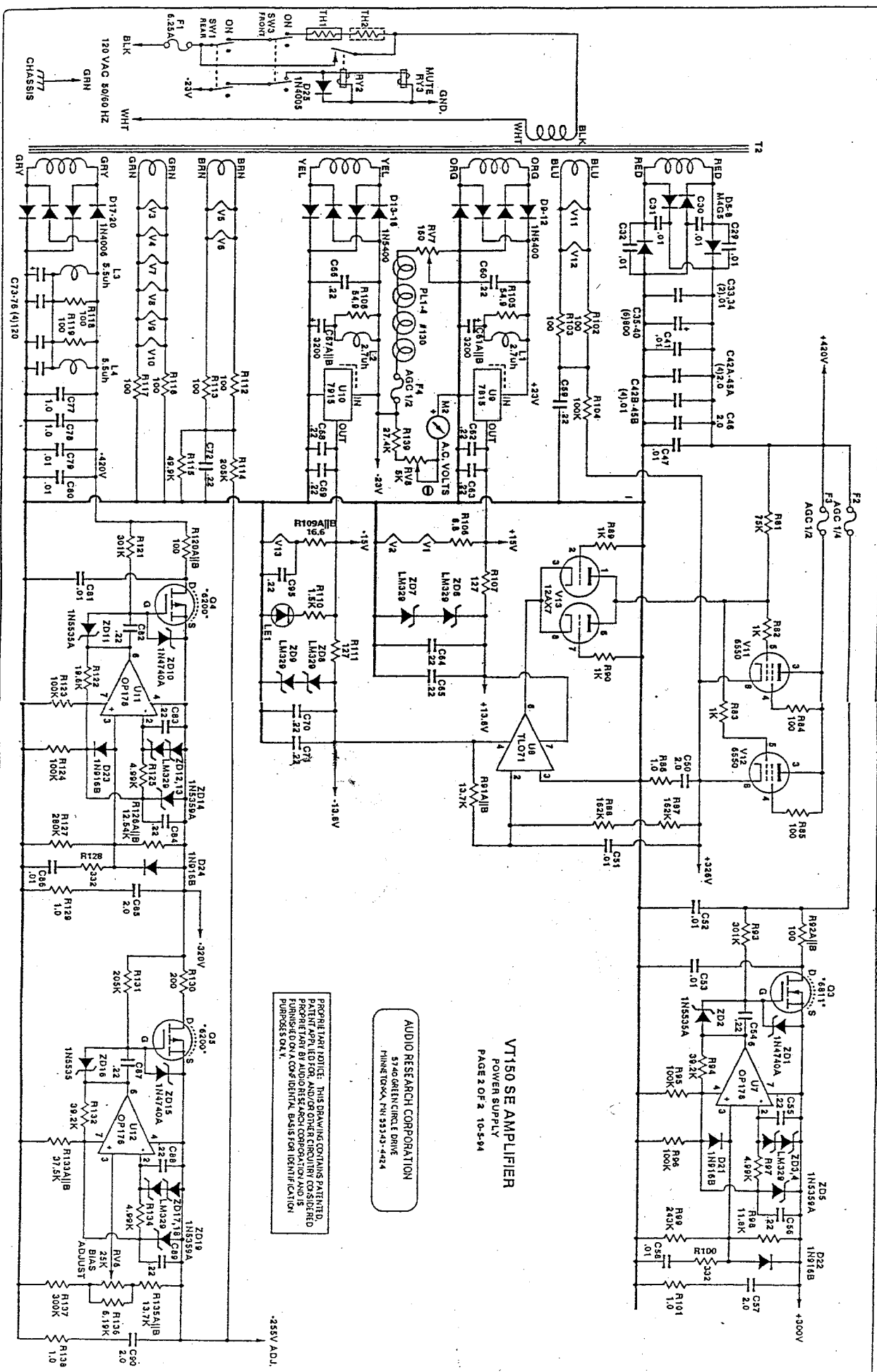


VT150 SE AMPLIFIER

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AUDIO RESEARCH CORPORATION
 5740 GREEN CIRCLE DRIVE
 HINNEBOKKA, PA 15533-5724

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VT150 SE AMPLIFIER

POWER SUPPLY
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AUDIO RESEARCH CORPORATION
5746 GLENVIEW DRIVE
HINGWOOD, GA 30540-7424

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-55V ADJ.

PARTS LIST

As of OCT 28 93

PRODUCT: VT150

NOTES:

Schematic Symbol	Quantity	ARC Part #	Description
C CAPACITORS			
C1,2,8A,8B,9A,9B	6	53270101	CAP. 27 PF +/-1PF 630V PNP
C3	1	53220201	CAP. 220 PF ±2.5% 630V PPN
C4-7,19-22,54-56,60,62-66,68-72,82-84	33	53220507	CAP. .22 UF 10% 160V
C 87-89,91-95			
C10-13,42B,43B,44B,45B,48,49,52,53	15	53100412	CAP. .01UF 600V
C 79-81			
C14-17,41,77,78	7	53100610	CAP. 1UF 400V
C18	1	52100601	CAP. 1.0UF 20% 50V
C23-C28	6	53100608	CAP. 1.0 UF 1-20% 425V TYPE V
C29-32	4	53100407	CAP. .01 UF 250V 20% MPE MALL.
C33,34,51,58,86	5	53100406	CAP. .01 UF +/-10% 630V
C35-40	6	50800801	CAP. 800 UF 450V GRAY
C42A,43A,44A,45A	4	53200612	CAP. 2 UF 450V REL. SEL.
C46,47,50,57,85,90	6	53200602	CAP. 2 UF +/-10% 450V
C59	1	53220509	CAP. .22 UF +/-10% 400 V
C61A,67A	2	50100908	CAP. 1000 UF 63V
C61B,67B	2	50220903	CAP. 2200 UF 35V.
C73-76	4	50120801	CAP. 120UF 450V.
D DIODES			
D1,2,25	3	30500400	IN4005 GENERAL INSTRUMENT
D3,4	2	30504800	PAD-5 DIODE,FE
D5-8	4	30503310	EDAL #M4G5
D9-16	8	30501500	MOTOROLA IN5400
D17-20	4	30502200	IN4006
D21-24	4	30500910	1N916B
F FUSES			
F1	3	34501000	FUSE, 6-1/4 MDX
F2	3	34500102	FUSE, 1/4 250V
F3	3	34500202	FUSE, AGC 1/2
J CONNECTORS			
J1	1	23201970	XLR CONNECTOR (Female)
J2-7	7	10036620	D400 CUSTOM BINDING POST
L INDUCTORS			
L1,2	2	61000160	CHOKE, 2.7 UH +/- 10%
L3,4	2	61000170	CHOKE, 5.5 UH
LE PANEL INDICATOR			
LE1	1	34300102	L.E.D. COLLAR & RETAINING RING

PARTS LIST

As of OCT 28 93

PRODUCT: VT150

NOTES:

Schematic Symbol	Quantity	ARC Part #	Description
M METERS/FANS			
M1	1	65000400	METER, PLATE CURRENT
Q TRANSISTORS			
Q1,2	2	30006506	FET, WHITE BLUE
Q3	1	30006811	FET, YELLOW
Q4,5	2	30006200	MTP 2P45
R RESISTORS			
R1,2	2	42392303	RES. 3.92K 1% MK-3 50PPM
R3,4,59	3	42100503	RES. 100K+/-1% MK-3 50PPM
R5A,6A	2	42475203	RES. 475 OHM 1% MK-3 50PPM
R5B,6B	2	42357203	RES. 357 OHM 1% MK-3 50PPM
R7A,7B,8A,8B	4	42274405	RES. 27.4K 1% MK-8 50PPM
R9,61	2	42100103	RES. 10 OHM 1% MK-3 50PPM
R10A,10B,25,26	4	42825405	RES. 82.5K 1% MK-8 50PPM
R11,12,15,16,27-30,43-46,79,80,82,83	18	42100303	RES. 1K 1% MK-3 50PPM
R 89,90			
R13A,13B,14A,14B,126A	5	42127403	RES. 12.7K 1% MK-3 50PPM
R17,18	2	42221603	RES. 2.21 MEG 1% MK-3 50PPM
R19A,19B,20A,20B,57	5	42100403	RES. 10K+/-1% MK-3 50PPM
R21,22,126B	3	42100603	RES. 1 MEG 1% MK-3 50PPM
R23A,24A	2	42124603	RES. 1.24 MEG 1% MK-350PPM
R23B,24B	2	42301603	RES. 3.01 MEG 1% MK-3 50PPM
R31A,31B,32A,32B	4	42143505	RES. 143K 1% MK-8 50PPM
R33A,33B,33C,34A,34B,34C,95,96,104	11	42100505	RES. 100K 1% MK-8 50PPM
R 123,124			
R35-38,114,131	6	42205503	RES. 205K 1% MK-3 50PPM
R39A-42A,39B-42B	8	42215503	RES. 215K 1% MK-3 50PPM
R47A,47B,51A,51B,52A,52B,58A,58B	8	42255403	RES. 25.5K 1% MK-3 50PPM
R48-50,93,121	5	42301503	RES. 301K 1% MK-3 50PPM
R53-56	4	42127505	RES. 127K 1% MK-8 50PPM
R60,102,103,112,113,116-119	9	42100203	RES. 100 OHM 1% MK-3 50PPM
R62-65	4	42464603	RES. 4.64 MEG. 1% MK-3 50PPM
R66-69	4	42100314	RES. 1K 1% MK-5 50PPM
R70-73	4	43200004	RES. 0.2 OHM 5% 5W
R74-77,84,85	6	43100205	RES. 100 OHM 2W 2% WW
R78	1	43750102	RES. 75 OHM 3W 5%
R81,133A,133B	3	42750405	RES. 75K 1% MK-8 50PPM
R86,101,129,138	4	43100002	RES. 1 OHM 2W 5% W.W.
R87,88	2	42162503	RES. 162K 1% MK-3 50PPM
R91A,91B,135A,135B	4	42274403	RES. 27.4K 1% MK-3 50PPM
R92A,92B,120A,120B,130	5	42200205	RES. 200 OHM+/-1% MK8 50PPM
R94,132	2	42392403	RES. 39.2K 1% MK-3 50PPM
R97,125,134	3	42499303	RES. 4.99K 1% MK-3 50PPM
R98	1	42118403	RES. 11.8K 1% MK-3 50PPM
R99	1	42243503	RES. 243K 1% MK3 50PPM
R100,128	2	42332203	RES. 332 OHM 1% MK-3 50PPM
R105,108	2	42549103	RES. 54.9 OHM 1% MK-3 50PPM
R106	1	43680000	RES. 6.8 OHM 2W 5% SPH
R107,111	2	42127203	RES. 127 1% OHM MK-3 50PPM
R109A,109B	2	42332103	RES. 33.2 OHM 1% MK-3 50PPM

PARTS LIST

As of OCT 28 93

PRODUCT: VT150

NOTES:

Schematic Symbol	Quantity	ARC Part #	Description
R110	1	42150303	RES. 1.50K 1% MK-3 50PPM
R115	1	42499403	RES. 49.9K 1% MK-3 50PPM
R122	1	42196403	RES. 19.6K 1% MK-3 50PPM
R127	1	42280513	RES. 280K1% MK-4 50PPM
R136	1	42619314	RES. 6.19K 1% MK-5 50PPM
R137	1	42300514	RES. 300K 1% MK-5 50PPM
		RV	CONTROLS
RV1-5	5	45500300	5K TRIM POT 10%
RV6	1	45250401	25K BIAS POT 550 R253A
		RY	RELAYS
RY1	1	64101600	RELAY, LS3
RY2	1	64101202	RELAY, 24V (NON SELECTED)
		SW	SWITCHES
SW1	1	24102300	SWITCH, ROCKER DPST
SW2	1	24001100	3 POS,METER SWITCH,D79
		T	TRANSFORMERS
T1	1	60010800	XFR., VT150 OUTPUT
T2	1	60010900	XFR., VT150 PWR. 120V.
		TH	THERMISTORS
TH1	1	47000300	THERMISTOR 30 OHM +/-20% CL60
		U	INTEGRATED CIRCUITS
U1,2,7,11,12	5	31002200	MC34071P
U3-6	4	31002400	LF 441CN OP. NATIONAL
U8	1	31001900	J FET INPUT OP-AMP
U9	1	31002000	MC7815CT
U10	1	31002700	MC7915 CT MOT.
		V	VACUUM TUBES
V1,2	2	32001150	VAC.TUBE 6922 RUSSIAN
V3-6	4	32001200	VAC.TUBE, 12BH7A
V7-12	6	32000551	VAC TUBE SOVTEK 6550-TESTED
V13	1	32001310	VAC.TUBE, 12AX7 CHINESE
		ZD	ZENER DIODES
ZD1,10,15	3	30500300	IN4740A
ZD2,11,16	3	30504210	IN5535A (KNOX ONLY)
ZD3,4,6-9,12,13,17,18	10	31000705	LM329DZ GREEN
ZD5,14,19	3	30503500	IN5359 B

Specifications

Model VT150SE

POWER OUTPUT: 130 watts continuous at 16 ohms from 20Hz to 20kHz with less than 1.0% total harmonic distortion (typically below .05% at 1 watt).

Approximate actual power available at "clipping" 145 watts (1kHz). (Note that actual power output is dependent upon both line voltage and "condition" i.e.: if power line has high distortion, maximum power will be affected adversely, although from a listening standpoint this is not very critical.)

POWER BANDWIDTH: (-3dB Points) 12Hz to 80kHz.

FREQUENCY RESPONSE: (-3dB Points at 1 watt) 2Hz to 200 kHz.

INPUT SENSITIVITY: 2.3V RMS balanced for rated output.

INPUT IMPEDANCE: 200K ohms balanced.

OUTPUT REGULATION: Approximately 0.5dB 16 ohm load to open circuit (Damping factor approximately 16).

OVERALL NEGATIVE FEEDBACK: 15dB.

SLEW RATE: 17 volts/microsecond.

RISE TIME: 2.0 microseconds.

HUM & NOISE: Less than 0.5mV RMS - 98dB below rated output (IHF weighted, input shorted).

POWER SUPPLY ENERGY STORAGE: Approximately, 420 joules.

POWER REQUIREMENTS: 110-125VAC 60Hz (220-250VAC 50Hz) 470 watts at rated output, 600 watts maximum, 290 watts at "idle".

TUBES REQUIRED: 2 - Matched pair 6550 - Power Output; 2 - 6550 Regulators; 1 - 12AX7 Regulator Amplifier; 4 -12BH7A Driver; 2 - 6922 input.

DIMENSIONS: 15.5" (39.4 cm) W x 10.9" (27.7 cm) H (10.5" (26.7 cm) panel + .4" (1 cm) feet) x 22.75" (57.8 cm) D behind panel, including rear handles. Front handles extend 1.5" (3.8 cm) forward of .38" (1 cm) thick panel.

WEIGHT: 77 lbs. (35 kg) Net; 97 lbs. (44 kg) Shipping.

Specifications subject to change without notice.