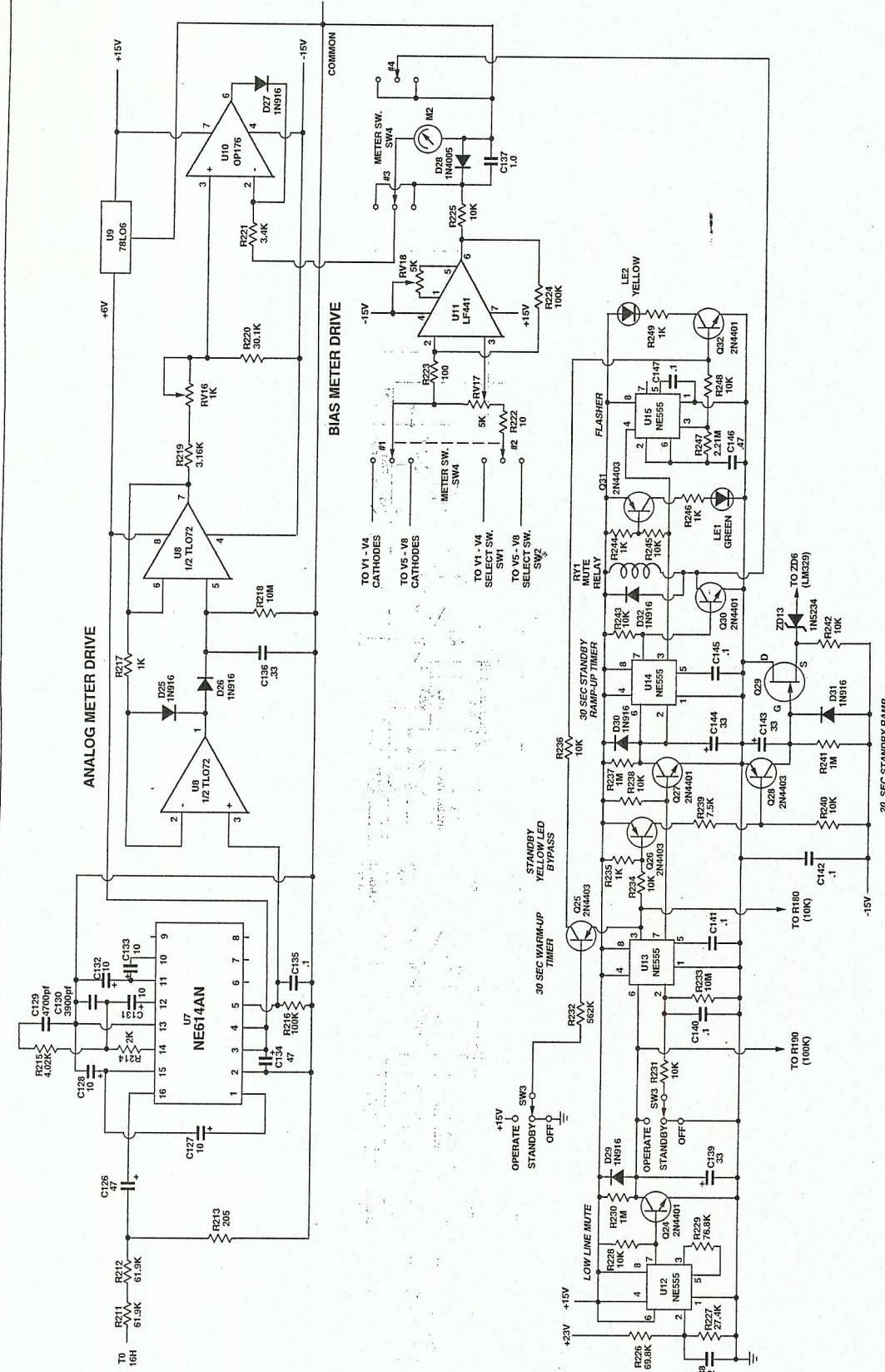


REF300 AUDIO
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AUDIO RESEARCH CORPORATION
AMHERST, MASSACHUSETTS 01004

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AUDIO RESEARCH CORPORATION
5740 GREEN CIRCLE DRIVE
MINNETONKA, MN 55345-4424

REF300 SOFT START METER DRIVE
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11-2-98

PARTS LIST

As of FEB 8 99

PRODUCT: REF300

NOTES: CHANGED REV. 1 PER ECN#98024 1/21/99

Schematic Symbol	Quantity	ARC Part #	Description
BR BRIDGE RECTIFIER			
BR1	1	30502310	RECTIFIER, BRIDGE 35MB80A
C CAPACITORS			
C1,28A	2	53220201	CAP., 220pf $\pm 2.5\%$ 630V PPN
C2-9,14A,15A,18A,19A,22A,23A,26A,27A	25	53220507	CAP., .22 μ F $\pm 10\%$ 160V
C 105-110,111,120,138			
C10,11,14B,15B,18B,19B,22B,23B,26B	11	53100410	CAP., .01 μ F $\pm 10\%$ 400V
C 27B,121			
C12A,13A,16A,17A,20A,21A,24A,25A	8	53680505	CAP., .68 μ F 425V INFINICAP GRN
C12B,13B,16B,17B,20B,21B,24B,25B,125	9	53100414	CAP., .01 μ F 630V. INFINI GRN
C28B	1	53330201	CAP., 330pF $\pm 2.5\%$ 630V PPN
C29A,30A,65-74,115,116,152	15	53200602	CAP., 2 μ F $\pm 10\%$ 450V
C29B,30B,119	3	53100412	CAP., .01 μ F $\pm 10\%$ 600V RTX
C31,127,128,131,132,133	6	51100700	CAP., 10 μ F 20V $\pm 10\%$ DIP TANT.
C32,135,140,141,142,145,147	7	52100500	CAP., 0.1 μ F 100V $\pm 20\%$
C33,93-96	5	50220903	CAP., 2200 μ F 35V ELECTROLYTIC
C34-37,52-61.113	15	50470807	CAP., 470 μ F 450V "LYTIC"
C38,39,62,63,64,114	6	50120801	CAP., 120 μ F 450V "LYTIC"
C40-45,115,116	6	53200603	CAP., 2 μ F $\pm 10\%$ 250V
C46-51,75-88,112,117,118	23	53100406	CAP., .01 μ F $\pm 10\%$ 630V
C89	1	50100704	CAP., 10 μ F 450V "LYTIC" AXIAL
C90A,90B	2	53560201	CAP., 560pF $\pm 2.5\%$ 630V
C91	1	53100610	CAP., 1.0 μ F $\pm 10\%$ 400V PPMF
C92	1	53560103	CAP., 56pF $\pm 2.5\%$ 630V PPN
C97,98	2	50220801	CAP., 220 μ F 50V
C99,100	2	50220702	CAP., 22 μ F 50V "LYTIC"
C101,102	2	50100601	CAP., 1 μ F 50V "LYTIC"
C103,104	2	53470511	CAP., .47 μ F $\pm 20\%$ 250V
C123	1	53100800	CAP., 1 μ F $\pm 10\%$ 450V
C124	1	53220509	CAP., .22 μ F $\pm 10\%$ 400V
C126,134	2	50470701	CAP., 47 μ F 35V $\pm 20\%$
C129	1	52470301	CAP., 4700pF 200V $\pm 10\%$
C130	1	52390300	CAP., 3900pF 200V $\pm 10\%$ CER RAD
C136	1	52330500	CAP., .33 μ F 100V $\pm 20\%$ CER MONO
C137	1	52100601	CAP., 1.0 μ F 50V $\pm 20\%$
C139,143,144	3	51330702	CAP., 33 μ F 16V $\pm 10\%$
C146	1	52470500	CAP., .47 μ F 200V $\pm 10\%$ CER RAD
C148-151	4	53100407	CAP., .01 μ F $\pm 20\%$ 250V
D DIODES			
D1-4,11,24,25,26,27,29,30,31,32	13	30500910	1N916B
D5,6,12-19,28	11	30500400	IN4005
D7-10,20-23	8	30502200	IN4006
F FUSES			
F2	1	34500705	(B)FUSE, 4 AMP MDQ BUSSMAN
F3	1	34500202	(B)FUSE, 1/2 AMP AGC BUSSMAN

PARTS LIST

As of FEB 8 99

PRODUCT: REF300

NOTES: CHANGED REV. 1 PER ECN#98024 1/21/99

Schematic Symbol	Quantity	ARC Part #	Description
R52,53,66,67,78,79,92,93	8	42150405	RES., 15K Ω MK-8 1% 50PPM
R56,57,70,71,82,83,96,97	8	42475414	RES., 47.5K Ω MK-5 1% 50PPM
R58,59,72,73,84,85,98,99,247	9	42221603	RES., 2.21 MEG MK-3 1% 50PPM
R60A,61A,74A,75A,86A,87A,100A,101A	8	42121303	RES., 1.21K Ω MK-3 1% 50PPM
R60B,61B,74B,75B,86B,87B,100B,101B	8	42150303	RES., 1.50K Ω MK-3 1% 50PPM
R62,63,76,77,88,89,102,103	8	42287503	RES., 287K Ω MK-3 1% 50PPM
R64,65,240,90,91,104,105,241	8	42392403	RES., 39.2K Ω MK-3 1% 50PPM
R106,107,114,115,122,123,130,131	8	42274103	RES., 27.4 Ω MK-3 1% 50PPM
R108,109,116,117,124,125,132,133	8	43100006	RES., 1.0 Ω 3W PRC
R110,111,118,119,126,127,134,135	8	42619314	RES., 6.19K Ω MK-5 1% 50PPM
R112,113,120,121,128,129,136,137,158	12	43100208	RES., 100 Ω 5% 3W W.W.
R 161,164,167			
R138-145	8	43200004	RES., 0.2 Ω 3W \pm 5%
R146A,146B	2	43100106	RES., 10 Ω 20W W.W.
R147	1	43500100	RES., 50 Ω 4.5W \pm 5% W.W.
R148	1	43100200	RES., 100 Ω 5% 2W
R149	1	42221302	RES., 2.21K Ω MK-2 1% 50 PPM
R150	1	42475502	RES., 475K Ω MK-2 1% 50PPM
R151	1	42100002	RES., 1 Ω MK-2 1% 50 PPM
R152	1	42357203	RES., 357 Ω MK-3 1% 50PPM
R153,213	2	42205203	RES., 205 Ω MK-3 1% 50PPM
R154	1	43300202	RES., 300 Ω 2W \pm 5% W.W.
R155A,155B	2	42143505	RES., 143K Ω MK-8 1% 50PPM
R156,160,163,166	4	43100105	RES., 10 Ω 2W 5% W.W.
R168	1	42100505	RES., 100K Ω MK-8 1% 50PPM
R171,177,180,198,206,210,225,228,231	10	42100403	RES., 10K Ω MK-3 1% 50PPM
R 234,236,238			
R172	1	43300001	RES., 3 Ω 6.5W \pm 5% W.W.
R173,229	2	42768403	RES., 76.8K Ω MK-3 1% 50PPM
R174	1	42255403	RES., 25.5K Ω MK-3 1% 50PPM
R175,176,205	3	42158513	RES., 158K Ω MK-4 1% 50PPM
R178,179	2	42681303	RES., 6.81K Ω MK-3 1% 50PPM
R181,222	2	42100103	RES., 10 Ω MK-3 1% 50PPM
R182-189,223	9	42100203	RES., 100 Ω MK-3 1% 50PPM
R192	1	42150613	RES., 1.5 MEG MK-4 1% 50PPM
R193,227	2	42274403	RES., 27.4K Ω MK-3 1% 50PPM
R194,195	2	43750001	RES., 7.5 Ω 2W \pm 5% W.W.
R197A,197B	2	42200205	RES., 200 Ω MK8 1% 50PPM
R199	1	42357303	RES., 3.57K Ω MK3 1% 50PPM
R200,201	2	42511303	RES., 5.11K Ω MK-3 1% 50PPM
R202	1	42110303	RES., 1.10K Ω MK3 1% 25PPM
R203A,203B	2	42150503	RES., 150K Ω MK-3 1% 50PPM
R204	1	42182303	RES., 1.82K Ω MK-3 1% 50PPM
R207	1	42215403	RES., 21.5K Ω MK-3 1% 50PPM
R208	1	42150203	RES., 150 Ω MK-3 1% 50PPM
R211,212	2	42619403	RES., 61.9K Ω MK-3 1% 50 PPM
R214	1	42200303	RES., 2K Ω MK-3 1% 50PPM
R215	1	42402303	RES., 4.02K Ω MK-3 1% 50PPM
R219	1	42316303	RES., 3.16K Ω MK-3 1% 50PPM
R220	1	42301403	RES., 30.1K Ω MK3 1% 50PPM
R221	1	42340302	RES., 3.40K Ω MK-2 1% 50 PPM
R226	1	42698403	RES., 69.8K Ω MK-3 1% 50PPM
R232	1	42562503	RES., 562K Ω MK-3 1% 50PPM
R239	1	42750303	RES., 7.5K Ω MK-3 1% 50PPM
R240,242,243,245,248	7	42100403	RES., 10K Ω MK-3 1% 50PPM

PARTS LIST

As of FEB 8 99

PRODUCT: REF300

NOTES: CHANGED REV. 1 PER ECN#98024 1/21/99

Schematic Symbol	Quantity	ARC Part #	Description
RV CONTROLS			
RV1,2	2	45200413	POT., TRIM 20K REF300
RV3,4	2	45500303	POT., 5K Ω TRIM VERT. 25 TURN
RV5-12	8	45250405	POT., 25K Ω 10%
RV13	1	45250200	POT., 250 Ω 25W REF300
RV14	1	45100424	POT., TRIM 10K Ω #3104F-1-103K
RV15	1	45150202	POT., 150 Ω 2W
RV16	1	45100300	POT., TRIM 1K Ω
RV17,18	2	45500300	POT., 5K Ω 10% TRIM
RY RELAYS			
RY1,3	2	64101600	RELAY, 12VDC
RY2	1	64101500	RELAY, 24V
T TRANSFORMERS			
T1	1	60016200	(B)XFR., OUTPUT REF300
T2	1	60016114	(B)XFR., PLATE REF300
T3	1	60016014	(B)XFR. POWER REF300
U INTEGRATED CIRCUITS			
U1,2	2	31007030	OPA124P, REF300
U3,12,13,14,15	5	31000800	TIMER, NE555N
U4	1	31002000	MC7815CT
U5	1	31002700	REGULATOR, VOLTAGE 15V. NEG.
U6,10	2	31002210	OP-AMP, OP176GP
U7	1	31007700	IC, NE614AN
U8	1	31001910	TLO72CP
U9	1	31006610	REGULATOR, VOLTAGE +6.2V
U11	1	31002411	OP-AMP, LF441CN MOTOROLA
V VACUUM TUBES			
V1-8,17-20	12	32000561	(B)VAC. TUBE, 6550C TESTED
V9-16,21	9	32001162	(B)TUBE, 6922 SILVER TESTED
ZD ZENER DIODES			
ZD1	1	30503900	ZENER, 1N5347A
ZD2	1	30501800	DIODE, ZENER IN5245B
ZD3	1	30502900	IN5374
ZD4	1	30503500	IN5359A OR B
ZD5,6,10,11,12	5	31000705	FET, GREEN
ZD7,8	2	30503800	DIODE, ZENER IN5274B
ZD9	1	30504400	IN5240B
ZD13	1	30502100	1N5234B

Model Reference 300

Specifications

POWER OUTPUT: 280 watts continuous at 16 ohms from 20Hz to 20kHz with less than 1% total harmonic distortion (typically less than .05% at 1 watt).

Actual maximum power available (at the point of clipping) is dependent upon the following:

- 1) power line voltage.
- 2) power line condition (ie: regulation, distortion).
- 3) type and brand of power output tube used.

Typical power under average circumstances will be around 290 watts. Maximum power under ideal conditions will be around 300 watts.

POWER BANDWIDTH: (-3dB points) 12Hz to 100kHz.

FREQUENCY RESPONSE: (-3dB points at 1 watt) 0.5Hz to 160 kHz.

INPUT SENSITIVITY: 1.75V RMS balanced for rated output. (32dB gain into 16 ohms).

INPUT IMPEDANCE: 200K ohms balanced.

OUTPUT TAPS: 1, 2, 4, 8, 16 ohms.

OUTPUT REGULATION: Approximately 0.8dB 16 ohm load to open circuit (Damping factor approximately 11).

OVERALL NEGATIVE FEEDBACK: 10dB.

HUM & NOISE: Less than 0.2mV RMS -110dB below rated output (IHF weighted, input shorted, 16 ohm output).

POWER SUPPLY ENERGY STORAGE: Approximately 448 joules.

POWER REQUIREMENTS: 105-125VAC 60Hz (210-250VAC 50Hz) 900 watts at rated output, 1200 watts maximum, 480 watts at idle, 280 watts standby.

TUBES REQUIRED: 4 Matched pair 6550C Power Output; 4-6550C Regulators; 1-6922 Regulator Amplifier; 4-6922 Driver; 4-6922 input.

The REFERENCE 300 has sufficient bias adjustment range to allow the use of any of the following output tube types: 6550, 6550B, 6550C, KT88, KT90, KT91, KT100.

The REFERENCE 300 as supplied from Audio Research is equipped with the Russian 6550C, which is our current choice for reliability and long service.

DIMENSIONS: 19" (48.3 cm) W x 10.5" (26.7 cm) H x (23.5" (59.7 cm) D. Handles extend 1.5" (3.8 cm) forward.

WEIGHT: 132 lbs. (59.9 kg) Net; Shipped in pairs, 410 lbs. (186 kg) per pair.

Specifications subject to change without notice.

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CL-519 1C-994110
