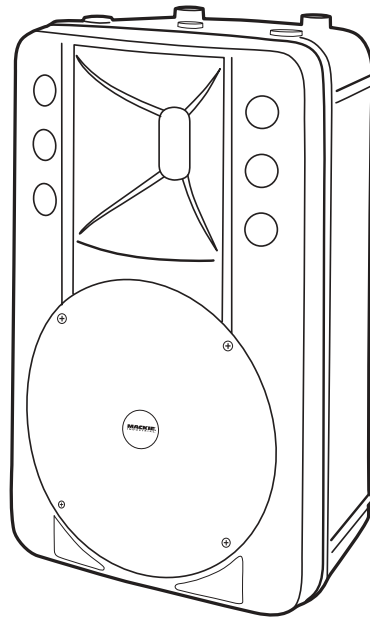


MACKIE®

ART300A

Active Loudspeaker



Service Manual

 <p style="margin: 0;">SERVICE ON THIS EQUIPMENT IS TO BE PERFORMED BY EXPERIENCED REPAIR TECHNICIANS ONLY</p> <p style="margin: 0;"><i>CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE</i></p>	
---	---

 <p style="margin: 0;">CAUTION AVIS</p> <p style="margin: 0;">RISK OF ELECTRIC SHOCK DO NOT OPEN</p> <p style="margin: 0;"><i>RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR</i></p>	
--	---

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE THE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED PERSONNEL

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR EVITER LES RISQUES DE CHOC ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE. AUCUN ENTRETIEN DE PIECES INTERIEURES PAR L'USAGER. CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE.

AVIS: POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, N'EXPOSEZ PAS CET ARTICLE A LA PLUIE OU A L'HUMIDITE.

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UN PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS LAISSER AUCUNE PARTIE A DECOUVERT.

This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION : Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio energy and, if not installed properly and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Le symbole éclair avec point de flèche à l'intérieur d'un triangle équilatéral est utilisé pour alerter l'utilisateur de la présence à l'intérieur du coffret de "voltage dangereux" non isolé d'ampleur suffisante pour constituer un risque d'électrocution.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Le point d'exclamation à l'intérieur d'un triangle équilatéral est employé pour alerter les utilisateurs de la présence d'instructions importantes pour le fonctionnement et l'entretien (service) dans le livret d'instruction accompagnant l'appareil.

CONTENTS

Safety Instructions	2
Introduction	4
Active Speaker Safety Test	5
Overview.....	7
Rear Panel	8
Specifications	9
Parts	10
Final Assembly.....	10
Amplifier Assembly	11
Amplifier PCB Assembly	12
Input Board Assembly and PCB.....	14
RCF Parts Differences.....	15
Main Circuit Board.....	16
Schematics	
Crossover	16
High Frequency Amplifier.....	17
Low Frequency Amplifier.....	18
Power Supply	19
PCB Layout.....	20
Input Board.....	21
Schematic	21
PCB Layout.....	22

Introduction



About this Manual

This manual contains the basic repair information for the ART series loudspeakers. For each model, the following information is supplied:

- Safety information
- Overview
- Rear panel view and features
- Specifications and test details
- Parts list, containing a master parts list and sub-assembly parts
- Parts list differences between RCF and Mackie Industrial ART speakers
- Schematics
- PCB layout drawing

It is essential that you have a copy of the user's manual as this contains the complete operating instructions.

Service Technical Assistance

Mackie Designs, Service Technical Assistance, is available 8AM - 5PM PST, Monday through Friday for Authorized Mackie Service Centers, at 1-800-258-6883. Feel free to call with any questions and speak with a carefully-calibrated technician. If one is not available, leave a detailed message and a qualified Mackoid will return your call asap.

Disclaimer

The information contained in this manual is proprietary to Mackie Designs, Inc. The entire manual is protected under copyright and may not be reproduced by any means without express written permission from Mackie Designs, Inc.

www.mackieindustrial.com

16220 Wood-Red Road NE, Woodinville, WA 98072 USA
TEL 888.337.7404, FAX 425.487.4337, industrial@mackie.com
UK +44.1268.571.212, FAX +44.1268.570.809 industrial@rcf-uk.com
ITALY +39.0522.354.111, FAX +39.0522.926.208 industrial@rcf.it
FRANCE +33.3.8546.9160, FAX +33.3.8546.9161 rcf.commercial@wanadoo.fr
GERMANY +49.2572.96042.0, FAX +49.2572.96042.10 industrial@mackie.de

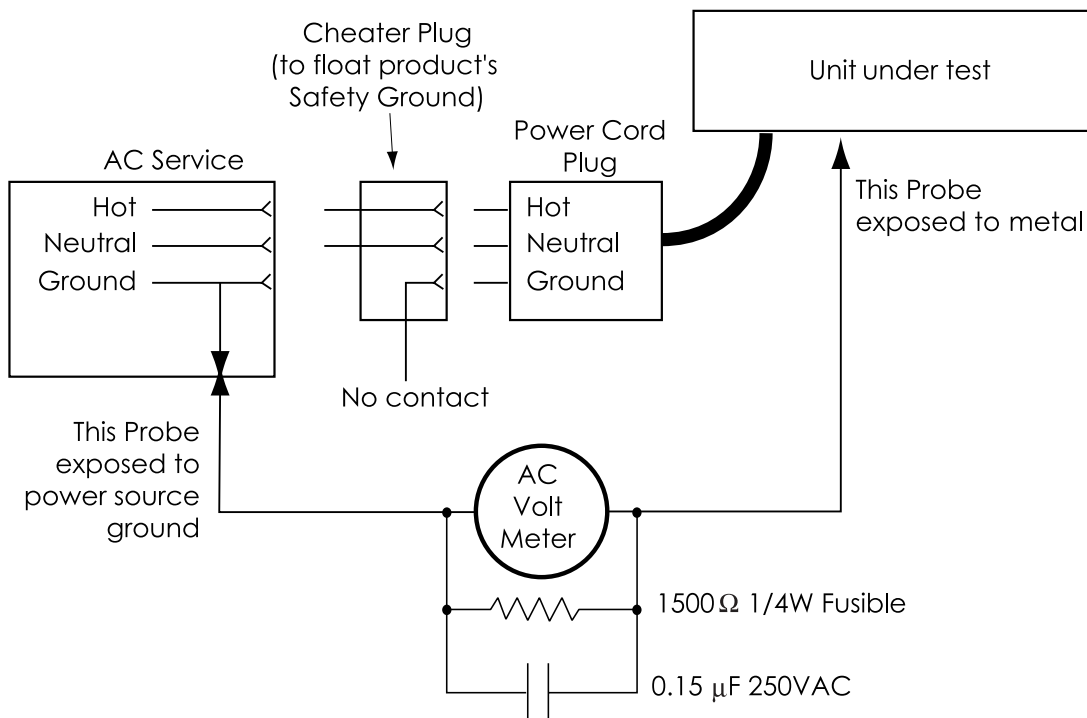
Active speaker safety test



You must perform the following leakage test before returning any active speakers to your customer. Take every safety precaution to protect yourself while doing this test.



1. Make a small loading RC circuit as shown in the diagram below, and connect the AC volt meter between the AC power source ground and any exposed metal on the unit under test.
2. Connect the unit under test to an AC power source using a ground-lift adaptor, leaving the unit's safety ground floating. Turn the unit on.
3. The meter reading should be less than 750mVAC (note: this is equivalent to 0.5mA of leakage current).
4. Flip the plug over in the receptical so the hot and neutral are swapped. Verify that the reading is still less then 750mVAC.
5. If either reading is greater than 750mVAC, then you must investigate and repair the speaker before returning it to your customer.



Safety First!

Before connecting and using the equipment, please read the Quick-Start Guide carefully and keep it for future reference.

Warning

This equipment has been designed to be installed by qualified professionals only! There are many factors to be considered when installing professional sound reinforcement systems, including mechanical and electrical considerations, as well as acoustic coverage and performance. Mackie Industrial strongly recommends that this equipment be installed only by a professional sound installer or contractor.

1. Never install, connect, or disconnect the unit with the power supply on.
2. Before powering up the speaker, make sure the voltage select switch corresponds to the AC Voltage supply.
3. Make sure the safety ground on the power cord is properly grounded.
4. To prevent the risk of electric shock, never open the unit. There are no user serviceable parts inside.
5. To ensure normal cooling of the amplifier, make sure the unit is well ventilated. Avoid exposure to direct sunlight or proximity to any heat source, dust, or dampness.

Installation

A 1-3/8" (35mm) socket is provided in the bottom of the cabinet for mounting the loudspeaker on a speaker stand.

The speaker can be suspended with approved rigging hardware. Always use at least two M10 threaded inserts located on opposite sides of the enclosure. The speaker must be positioned so that the weight of the enclosure is equally distributed over the two inserts.

Warning

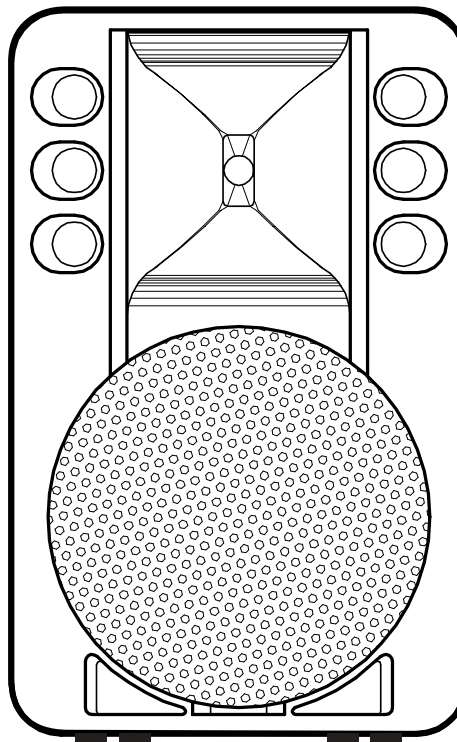
Never attempt to suspend the ART Series loudspeakers by their handles. Consult a professional rigger or structural engineer prior to suspending loudspeakers from a structure not intended for that use. Always know the working load limit of the structure supporting the loudspeaker array. Always make sure that the rigging hardware minimum rating is at least five times the actual load.

Overview

The ART300A is a full-range two-way professional active speaker system that combines high power and wide bandwidth in a light-weight enclosure for fixed-installation systems. The 12" low-frequency transducer, in combination with a 1" compression driver coupled to an integral 90° x 70° constant directivity polynomial horn, form an extremely powerful package for any small to medium-sized sound reinforcement application.

It features a balanced XLR input with a Mic/Line switch and a paralleled balanced XLR output for cascading multiple speakers. Rear panel controls also include Music and Voice equalization switches, a rotary volume control, and an input limiter.

The two built-in power amplifiers provide 300W for the LF driver and 60W for the HF driver. The enclosure is constructed of high-strength polypropylene, with M10 threaded inserts on all four sides for rigging, and an integral locking 1-3/8" socket in the bottom for mounting on a standard speaker stand.



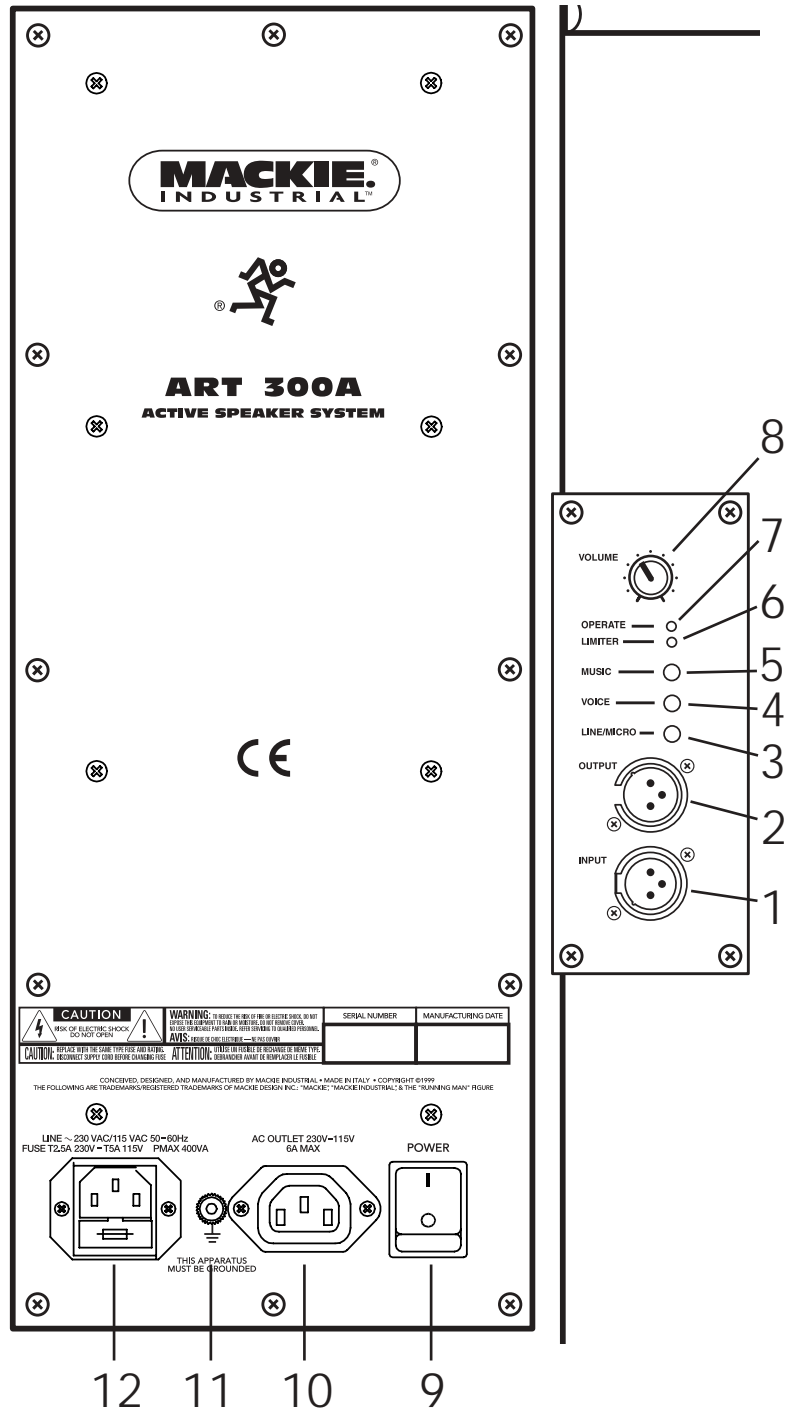
Rear Panel

1. INPUT is a balanced XLR input jack that accepts mic-level or line-level signals.
 2. OUTPUT is a balanced XLR output jack in parallel with the INPUT jack, allowing the signal to “loop through” for daisy-chaining speakers together.
 3. LINE/MIC switch for mic-level or line-level signals at the INPUT.
 4. VOICE equalization switch ON provides a gentle boost at 3kHz and 6kHz.
 5. MUSIC equalization switch ON provides a low-frequency and high-frequency boost.
 6. LIMITER indicator illuminates when the limiting protection circuits are activated.
 7. OPERATE indicator illuminates when the POWER switch is turned on.
 8. VOLUME control adjusts the input-stage gain.
 9. POWER switch turns the AC power on and off.
 10. AC OUTLET for connecting AC power to an additional Mackie Industrial active speaker system.
 11. Grounding Terminal provides an additional safety grounding point.
 12. IEC AC Socket. Connect the detachable power cord to the socket. The protection fuse is also contained in the AC socket.
- CAUTION: Replace fuse only with the same type as indicated on the rear panel.

Connections

The XLR connectors use the following AES standard:

- Pin 1 = Ground (Shield)
- Pin 2 = Hot (+)
- Pin 3 = Cold (-)



Specifications

System:

Freq. Range (-10 dB):
55Hz-19kHz
Freq. Response (± 3 dB):
75Hz-16kHz
Horz. Coverage Angle (-6 dB):
90°, averaged 1kHz-10kHz
Vert. Coverage Angle (-6 dB):
70°, averaged 1kHz-10kHz
Directivity Factor Q (DI):
10.0 (10.0), averaged 1kHz-10kHz
System Sensitivity¹:
101 dB, 1W@1m
Rated Maximum SPL²:
126 dB @ 1 m (3.3ft) peak
HF Protection:
Dynamic

Transducers:

Low Frequency:
12" (300 mm) diameter woofer
High Frequency:
1" (25 mm) compression driver, horn loaded

Preamp and Processor:

Input Sensitivity:
Mic In: 8mV
Line In: 125mV
Input Impedance:
Mic In: 650 Ω unbalanced
1.3k Ω balanced
Line In: 10k Ω unbalanced
19k Ω balanced
Crossover Frequency and Slope:
1.8kHz; 24 dB/octave
Time Alignment:
Analog, 0.3 ms HF delay
Speaker Protection:
Thermal, over-excursion
Music Equalization:
+4.3 dB @ 65Hz
+4.0 dB @ 12kHz
Voice Equalization:
+4.0 dB @ 3kHz
+4.0 dB @ 6kHz
Indicators:
Power ON, Limiter

Amplifiers:

LF Amplifier Power:
300 watts RMS
HF Amplifier Power:
60 watts RMS
Distortion:
< 0.1% THD at rated power
Amp Protection:
Thermal, limiter, short circuit
Power Supply:
115/230 VAC, 2A, 50/60 Hz

Physical:

Enclosure:
Asymmetrical trapezoidal, reinforced polypropylene
Mounting:
Lockable 1-3/8" (35mm) stand mount
Rigging Inserts:
4 points, accepts M10 threaded hardware
Input/Output Connectors:
2 XLR balanced
Dimensions HxWxD:
24.4" x 15.4" x 12.3"
(620 mm x 390 mm x 312 mm)
Net Weight:
44.0 lb (20.0 kg)

Testing:

DC voltages:
+ 83 VDC
- 83 VDC
+ 41 VDC
- 41 VDC
+ 15 VDC
- 15 VDC
DC offset:
less than +/- 0.1 VDC
Bias:
At idle, into 8 ohm loads
after warm-up
adjust R36
5.5 mV R39-R40 (low freq amplifier)
adjust R73
13 mV R81-R82 (high freq amplifier)
AC current draw:
Less than 0.3 A at idle

ART300A Parts

13112024 ART300A Final Assembly

PART #	DESCRIPTION	QUANTITY	NOTES
21111060	WOOFER L12.....	1	
23103350	INPUT ASSEMBLY	1	See page 14
23103360	AMPLIFIER ASSEMBLY	1	See next page
23103450	ACCESSORY (FLOOR WEDGE ANTI-TIP-OVER THINGY)	1	
23103620	WIRE ASSEMBLY	1	
25110480	TWEETER N 350.....	1	
33090090	CABINET FRONT 33526	1	
33090400	CABINET REAR 34288	1	
33160530	WOOFER GASKET 21202	1	
33221060	WOOFER GRILL 31809.....	1	
33221130	CONTROL BOARD SHIELD 32656	1	
33890100	FEET 34287.....	4	
33901250	HANDLE 31154.....	1	
33901270	WIRE CABLE GROMMET 32498.....	1	
33912130	ANTIVIBRATION 22867.....	4	
33912160	TRANSFORMER SPACERS 23128	6	
33921210	NUTS FOR MOUNTING INSERTS 22839	4	
33921480	MOUNTING INSERTS 31832	4	
33921510	GRILL SPACERS 32515.....	4	
33921540	TWEETER MOUNTING PLATES 32655.....	2	
33921580	SPACERS 33359	8	
33950280	MOUNTING INSERT COVER STICKERS (HEX) 23495	4	
33951920	TRADEMARK BADGE 34672.....	1	
33960580	WARRANTY MOD.1712	1	
33961560	INSTRUCTION GUIDE MOD.1743	1	
33993020	SHIPPING BOX 34673.....	1	
33994990	BOX PACKING 31914	2	
33995000	BOX PACKING 31915.....	2	
33995350	SHIPPING PALLET 33301	0.0833	
33995360	BOX COVER 33303.....	0.1666	
33995370	ANGLE 1800 33302.....	0.3333	
33995380	BOX PACKING 33368.....	2	
43040390	SOUND ABSORBER FOAM SP.15 DENS.50	24	
43900110	STOPPER PLUG.....	1	
43900580	U-SHAPED RUBBER GASKET ESPACE200	0.001	
43900810	KNURLED KNOB 32243	1	
43900820	GASKET 32181.....	1.2	
43900830	GASKET 32266.....	2.05	
51180425	Screw, Hex, white galv, M6 x 18 mm, U5739 3055	2	
51190205	Screw, cylindrical, Allen, black galv, M5 x 10 mm, U5931	4	
51190336	Screw, cylindrical, Allen, black galv, M6 x 35, U5931 50762	4	
51240411	Screw, cylindrical, Phillips, pointed, black galv, 3.9 x 13 mm, U6954	4	
51992008	Screw, cylindrical, Phillips, black galv, for plastic, 4.2 x 20 mm.....	20	
51992010	Screw, roundhead, flange, Phillips, black galv, for plastic, 4.8 x 50 mm	16	
52100101	Washer, flat, 15 x 28 mm, white galv, U6592	4	
52100121	Washer, flat, 6.4 x 12.5 mm, black galv, U6592 0174	10	
52201009	Washer, crinkle, 6 mm DIN6798 50383	2	
52301004	Washer, split, 6.4 mm U1751 171 1/2.....	2	
59024072	PLASTIC BAG 600+100+100X1200.....	1	
83483019	LINECORD, USA, C3C83-012E003	1	

Service Replacement Parts (boxed and packaged, ready to ship out)

PART #	DESCRIPTION	NOTES
11401023	Woofer L12ART300A	Boxed woofer (21111060 plus shipping box, packing etc)
11440039	Woofer Recone kit L12ART300A	Boxed Recone kit
15420008	Tweeter ART 300/300A	Boxed Tweeter (25110480 plus shipping box, packing)
15410084	Tweeter diaphragm M84	Boxed Tweeter diaphragm

23103360 ART300A Amplifier Assembly 115 VAC

PART #	DESCRIPTION	QUANTITY	NOTES
23020400	AMPLIFIER PCB ASSEMBLY	1	See next page
23102640	WIRE ASSEMBLY UL	1	
23102650	WIRE ASSEMBLY UL	2	
23102660	WIRE ASSEMBLY UL	1	
23102670	WIRE ASSEMBLY UL	1	
23102680	WIRE ASSEMBLY UL	1	
23102750	WIRE ASSEMBLY UL	1	
23102760	WIRE ASSEMBLY UL	1	
33120230	HEATSINK 32924	1	
33182100	TRANSFORMER SUPPORT 31180	1	
33190190	REAR PANEL 34676	1	
33950120	UL STICKER 33539	1	
43900130	GROUND CONNECTOER 33610	1	
43900840	BRASS SPACERS 10 MM	4	
51150316	Screw, cylindrical, Phillips, black galv, M4 x 10 mm, U7687 6233	4	
51150325	Screw, cylindrical, Phillips, white galv, M4 x 14 mm, U7687 6643	10	
51150346	Screw, cylindrical, Phillips, black galv, M4 x 25 mm, U7687	4	
51180545	Screw, Hex, white galv, M8 x 65 mm, U5737	1	
51250211	Screw, flat, CSK, Phillips, blk galv, point, 2.9 x 9.5 mm, U6955 12596 ...	4	
52100113	Washer, flat, 4,3 x 9, white galv, U6592 169	9	
52100126	Washer, large flat, white galv, 9 x 24 mm, U6593	1	
52100127	Washer, white galv, 8.5 x 32 mm, 166	1	
52201003	Washer, crinkle, 4 mm DIN 6798-A	2	
52201005	Washer, crinkle, 8 mm DIN6798 176	1	
53102010	Nut, M 4 U5588-A-6S 01880 1/2	3	
53301026	Nut, NYLOCK, M8 INOX	1	
53301035	Nut, flanged, white galv, M 4 DIN 6923	18	
81751094	TRANSFORMER C1T51-079A	1	
83111142	FUSE C3P11-003T502 5 AT	2	
83242016	ILLUMINATED POWER SWITCH C3S42-016	1	
83444023	FASTON CONNECTOR, MALE C3C44-013M001 .969/4	1	
83482004	RECESSED SOCKET, MALE C3C82-004M003	1	
83482006	RECESSES SOCKET, FEMALE C3C82-006F003	1	
97119549	GREEN/YELLOW WIRE 1 MMQ	10	

23020400 ART300A Amplifier PCB Assembly

PART #	DESCRIPTION	QUANTITY	NOTES
32030380	BARE CIRCUIT BOARD MR 31851-6.....	1	See pages 16-20
32180670	SUPPORT 13391.....	4	
33120240	HEATSINK 32922.....	1	
33120250	HEATSINK 32923.....	1	
33910140	INSULATORS 33912.....	13	
42901040	ANTISTATIC LABEL 31101.....	1	
51160225	Screw, flat, CSK, Phillips, black galv, M3 x 12 mm, U7688.....	18	
52100105	Washer, flat, 3,2 x 7, white galv, U6592 5320.....	8	
52201002	Washer, crinkle, 3 mm DIN 6798 11628 1/2.....	18	
53101005	Nut, M 3 U5588-A-6S 11625.....	18	
81121000	RESISTOR, C1R21-251J0R0 1/4W5% 0.....	66	
81121001	RESISTOR, C1R21-251J010 1/4W5% 1.....	2	
81121017	RESISTOR, C1R21-251J220 1/4W5% 22.....	4	
81121021	RESISTOR, C1R21-251J470 1/4W5% 47.....	4	
81121025	RESISTOR, C1R21-251J101 1/4W5% 100.....	12	
81121032	RESISTOR, C1R21-251J391 1/4W5% 390.....	4	
81121033	RESISTOR, C1R21-251J471 1/4W5% 470.....	2	
81121034	RESISTOR, C1R21-251J561 1/4W5% 560.....	6	
81121037	RESISTOR, C1R21-251J102 1/4W5% 1K.....	9	
81121040	RESISTOR, C1R21-251J182 1/4W5% 1.8K.....	6	
81121041	RESISTOR, C1R21-251J222 1/4W5% 2.2K.....	24	
81121042	RESISTOR, C1R21-251J272 1/4W5% 2700.....	1	
81121043	RESISTOR, C1R21-251J332 1/4W5% 3.3K.....	3	
81121045	RESISTOR, C1R21-251J472 1/4W5% 4.7K.....	5	
81121047	RESISTOR, C1R21-251J682 1/4W5% 6.8K.....	2	
81121049	RESISTOR, C1R21-251J103 1/4W5% 10K.....	17	
81121051	RESISTOR, C1R21-251J153 1/4W5% 15K.....	1	
81121055	RESISTOR, C1R21-251J333 1/4W5% 33K.....	1	
81121057	RESISTOR, C1R21-251J473 1/4W5% 47K.....	5	
81121058	RESISTOR, C1R21-251J563 1/4W5% 56K.....	1	
81121063	RESISTOR, C1R21-251J154 1/4W5% 150K.....	3	
81121064	RESISTOR, C1R21-251J184 1/4W5% 180K.....	2	
81121065	RESISTOR, C1R21-251J224 1/4W5% 220K.....	1	
81121069	RESISTOR, C1R21-251J474 1/4W5% 470K.....	1	
81121070	RESISTOR, C1R21-251J564 1/4W5% 560K.....	1	
81121071	RESISTOR, C1R21-251J684 1/4W5% 680K.....	1	
81121073	RESISTOR, C1R21-251J105 1/4W5% 1M.....	5	
81121079	RESISTOR, C1R21-501J2R7 1/2W5% 2.7.....	1/2 watt 4	
81121114	RESISTOR, C1R21-501J222 1/2W5% 2.2K.....	1/2 watt 2	
81121166	RESISTOR, C1R21-251J106 1/4W5% 10M.....	1	
81121734	RESISTOR, C1R21-251F1002 1/4W1% 10K.....	8	
81121859	RESISTOR, C1R21-251F2003 1/4W1% 200K.....	1	
81127275	RESISTOR, FUSIBLE, C1R27-162K470 1.6W10% 47.....	2	
81138033	RESISTOR, HIGH VOLTAGE C1R38-501J475 1/2W5% 4.7M.....	1	
81182007	TRIM POT C1R82-001K102 1K.....	2	
81231011	RESISTOR, WIRE WOUND, C1F31-202J2R2 2W 5% 2.2.....	2	
81241118	RESISTOR, WIRE WOUND, C1F41-302K472 3W10% 4.7K.....	2	
81241125	RESISTOR, WIRE WOUND, C1F41-502JR15-RES.FILO 5W5% 0.15.....	2	
81241152	RESISTOR, WIRE WOUND, C1F41-502J4R7-RES.FILO 5W5% 4.7.....	2	
81241219	RESISTOR, WIRE WOUND, C1F41-502K100-RES.FILO 5W10% 10.....	2	
81243129	RESISTOR, WIRE WOUND, C1F43-502JR33-RES.FILO 5W5% 0.33.....	2	
81412018	CAPACITOR, FILM, C1C12-101K684 100V10%680N.....	2	
81413001	CAPACITOR, FILM, C1C13-101K102 100V10% 1N.....	4	
81413007	CAPACITOR, FILM, C1C13-101K103 100V10% 10N.....	4	
81413009	CAPACITOR, FILM, C1C13-101K223 100V10% 22N.....	6	
81413010	CAPACITOR, FILM, C1C13-101K333 100V10% 33N.....	2	
81413011	CAPACITOR, FILM, C1C13-101K473 100V10% 47N.....	1	

PART #	DESCRIPTION	QUANTITY	NOTES
81413013	CAPACITOR, FILM, C1C13-101K104-COND.FILM100V10% 100N.....	17	
81413017	CAPACITOR, FILM, C1C13-630K683-COND.FILM63V10% 68N.....	2	
81413022	CAPACITOR, FILM, C1C13-630K474-COND.FILM63V10% 470N.....	2	
81421007	CAPACITOR, CERAMIC, C1C21-500K100 50V10% 10 P.....	4	
81421013	CAPACITOR, CERAMIC, C1C21-500K330 50V10% 33P.....	1	
81421017	CAPACITOR, CERAMIC, C1C21-500K680 50V10% 68 P.....	2	
81421019	CAPACITOR, CERAMIC, C1C21-500K101 50V10% 100 P.....	1	
81421023	CAPACITOR, CERAMIC, C1C21-500K221 50V10% 220P.....	1	
81422010	CAPACITOR, CERAMIC, C1C22-500*681 50V10% 680P.....	2	
81521034	CAPACITOR, ELECTROLYTIC, C1E21-160*220 16V 22U.....	2	
81521045	CAPACITOR, ELECTROLYTIC, C1E21-250*2R2 25V 2.2U.....	1	
81521046	CAPACITOR, ELECTROLYTIC, C1E21-250*4R7 25V 4.7U.....	1	
81521051	CAPACITOR, ELECTROLYTIC, C1E21-250*221 25V 220U.....	2	
81521072	CAPACITOR, ELECTROLYTIC, C1E21-630*010 63V1U.....	3	
81521075	CAPACITOR, ELECTROLYTIC, C1E21-630*100 63V10U.....	2	
81521078	CAPACITOR, ELECTROLYTIC, C1E21-630*101 63V100U.....	2	
81533020	CAPACITOR, ELECTROLYTIC, C1E33-500*682 50V 6800U.....	4	
81632055	INDUCTOR C1L32-040A331.....	2	
82112001	DIODE C2D12-750*151 1N4148.....	29	
82112002	DIODE C2D12-201*251 BAV21.....	4	
82131013	ZENER DIODE C2D31-132J120 1.3W 12V.....	4	
82131015	ZENER DIODE C2D31-132J150 1.3W 15V.....	1	
82172010	DIODE C2D72-102*102 1N4007.....	12	
82172012	DIODE C2D72-401*312 MR854.....	2	
82175010	DIODE BRIDGE C2D75-211*402 4A.....	2	
82212002	TRANSISTOR C2T12-101B450 BC560/C.....	5	
82212017	TRANSISTOR C2T12-600B150 2N5401.....	5	
82212018	TRANSISTOR C2T12-600A160 2N5551.....	5	
82212019	TRANSISTOR C2T12-101C450 BC550.....	7	
82222007	TRANSISTOR C2T22-302A800 BD179.....	1	
82222008	TRANSISTOR C2T22-302B800 BD180.....	1	
82222011	TRANSISTOR C2T22-101A301 BF871.....	1	
82222012	TRANSISTOR C2T22-101B301 BF872.....	1	
82231022	TRANSISTOR C2T31-802A151 MJE15030.....	1	
82231023	TRANSISTOR C2T31-802B151 MJE15031.....	1	
82231028	TRANSISTOR C2T31-153B231 2SC5200.....	1	
82231029	TRANSISTOR C2T31-153A231 2SA1943.....	1	
82232003	TRANSISTOR C2T32-253A400 TIP35.....	1	
82232004	TRANSISTOR C2T32-253B400 TIP36.....	1	
82242007	TRANSISTOR C2T42-502A800 TIP126.....	1	
82242008	TRANSISTOR C2T42-502B800 TIP121.....	1	
82262005	TRANSISTOR C2T62-800A250 J108.....	2	
82262014	MOSFET TRANSISTOR C2T62-313A101 IRFP140.....	1	
82262015	MOSFET TRANSISTOR C2T62-193A101 IRFP9140.....	1	
82312004	INTEGRATED CIRCUIT C2A12-15534 NE5534.....	1	
82312005	INTEGRATED CIRCUIT C2A12-25532 NE5532.....	9	SEE NOTE BELOW
82512008	LED GREEN C2F12-008.....	4	
82561001	OPTOCOUPLER C2F61-001*5C8 VTL.....	1	
83111049	FUSE C3P11-001F252 2.5AF.....	2	
83111053	FUSE C3P11-001F632 6.3 AF.....	2	
83142005	CAPACITOR, FILM, C3P42-251K224 250V10% 0.22.....	1	
83144013	CAPACITOR, CERAMIC, C3P44-250M103M 250V20% 10N.....	1	
83182005	FUSEHOLDER C3P82-005.....	4	
83432031	CONNECTOR 10 PIN, C3C32-012M010 10P.....	1	
83432033	CONNECTOR 6 PIN, C3C32-012M006 6P.....	1	
83444020	FASTON MALE CONNECTOR C3C44-020M001.....	18	
83811002	INSULATOR STRIP C3A11-002.....	3	
83811009	INSULATOR STRIP C3A11-009.....	3	
83812001	INSULATING WASHER C3A12-001.....	3	

23103350 Input Assembly

PART #	DESCRIPTION	QUANTITY	NOTES
22040930	WIRE ASSEMBLY POWER	1	
23020360	INPUT PCB ASSEMBLY	1	SEE BELOW
23102780	WIRE ASSEMBLY UL	1	
33170050	COVER PLATE 34675	1	
51240211	Screw, cylindrical, blk galv, point, 2.9 x 9.5 mm, U6954 12600 1/2	4	
83881020	KNOB C3A81-020	1	
83882016	BLACK BUTTONS C3A82-016	3	

23020360 Input PCB Assembly

See the schematic on page 21, PCB layout on page 22

PART #	DESCRIPTION	QUANTITY	NOTES
33032120	BARE CIRCUIT BOARD MR 31850-3	1	SEE PAGES 21-22
52201005	WASHER 8 DIN6798 176	1	
81121025	RESISTOR C1R21-251J101 1/4W5% 100	2	
81121030	RESISTOR C1R21-251J271 1/4W5% 270	1	
81121033	RESISTOR C1R21-251J471 1/4W5% 470	1	
81121034	RESISTOR C1R21-251J561 1/4W5% 560	2	
81121037	RESISTOR C1R21-251J102 1/4W5% 1K	2	
81121041	RESISTOR C1R21-251J222 1/4W5% 2.2K	1	
81121049	RESISTOR C1R21-251J103 1/4W5% 10K	3	
81121051	RESISTOR C1R21-251J153 1/4W5% 15K	1	
81121061	RESISTOR C1R21-251J104 1/4W5% 100K	1	
81121073	RESISTOR C1R21-251J105 1/4W5% 1M	4	
81132089	RESISTOR, METAL, C1R32-501G473 1/2W2% 47K	4	
81311074	POT, C1P11-063A503-POTENZIOMETRO 50K	1	
81413001	CAPACITOR, FILM C1C13-101K102 100V10% 1N	2	
81413005	CAPACITOR, FILM C1C13-101K472 100V10% 4.7N	2	
81413007	CAPACITOR, FILM C1C13-101K103 100V10% 10N	1	
81413013	CAPACITOR, FILM C1C13-101K104 100V10% 100N	1	
81421013	CAPACITOR, CERAMIC C1C21-500K330 50V10% 33P	2	
81421015	CAPACITOR, CERAMIC C1C21-500K470 50V10% 47 P	2	
81521075	CAPACITOR, ELECTROLYTIC C1E21-630*100 63V10U	2	
81572003	CAPACITOR, BIPOLAR C1E72-350*222 BPM 35VDC20% 2.2U	1	
82112001	DIODE C2D12-750*151 1N4148	4	
82312005	INTEGRATED CIRCUIT C2A12-25532 NE5532	2	
82511006	LED, RED C2F11-006	1	
82512008	LED, GREEN C2F12-008	1	
83231021	DOUBLE SWITCHES C3S31-0210202	3	
83414019	MALE XLR CONNECTOR C3C14-017M003 3P	1	
83414020	FEMALE XLR CONNECTOR C3C14-017F003 3P	1	
83432033	6-PIN CONNECTOR C3C32-012M006	1	
83822029	TIE DOWN C3A22-029	1	
97123005	YELLOW WIRE 1.5 MMQ	8	

RCF ART300A parts

Summary of Differences

The main differences between the RCF brand and the Mackie brand ART300A are: the rear panel silkscreens, the front badges, the shipping boxes and literature.

The following parts are used in the RCF brand ART300A US model. The other parts, not shown, are the same as the Mackie model.

13110049 RCF ART300A Final Assembly

These parts differ from the Mackie ART300A final assembly:

PART #	DESCRIPTION	QUANTITY	NOTES
23102060	ACCESSORY (ANTI-TIP OVER WEDGE)	1	
23102460	INPUT ASSEMBLY	1	See below
23102900	AMPLIFIER ASSEMBLY115V	1	See below
32970150	BOX LABEL 31167	2	
333950530	SERIAL NUMBER LABEL50487	3	
33955180	RCF TRADEMARK BADGE 32180	1	
33960330	INSTRUCTION GUIDE MOD.1630-2	1	
33994980	SHIPPING BOX 31916.....	1	

23102900 RCF ART300A Amplifier Assembly

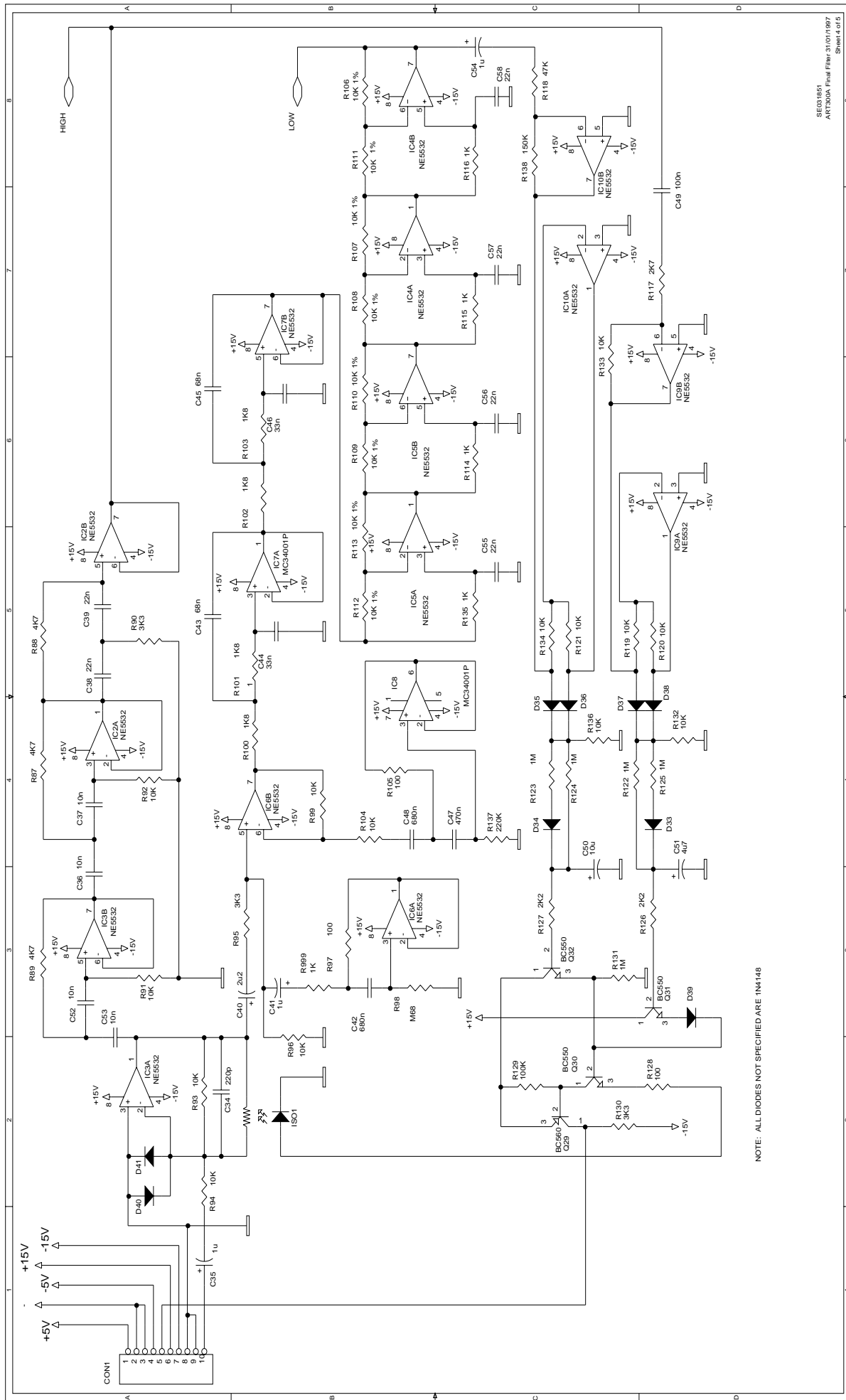
These parts differ from the Mackie ART300A amplifier assembly:

PART #	DESCRIPTION	QUANTITY	NOTES
33191290	REAR PANEL 33543	1	
33955480	CAUTION LABEL 32650.....	1	

23102460 RCF ART300A Input Assembly

These parts differ from the Mackie ART300A input assembly:

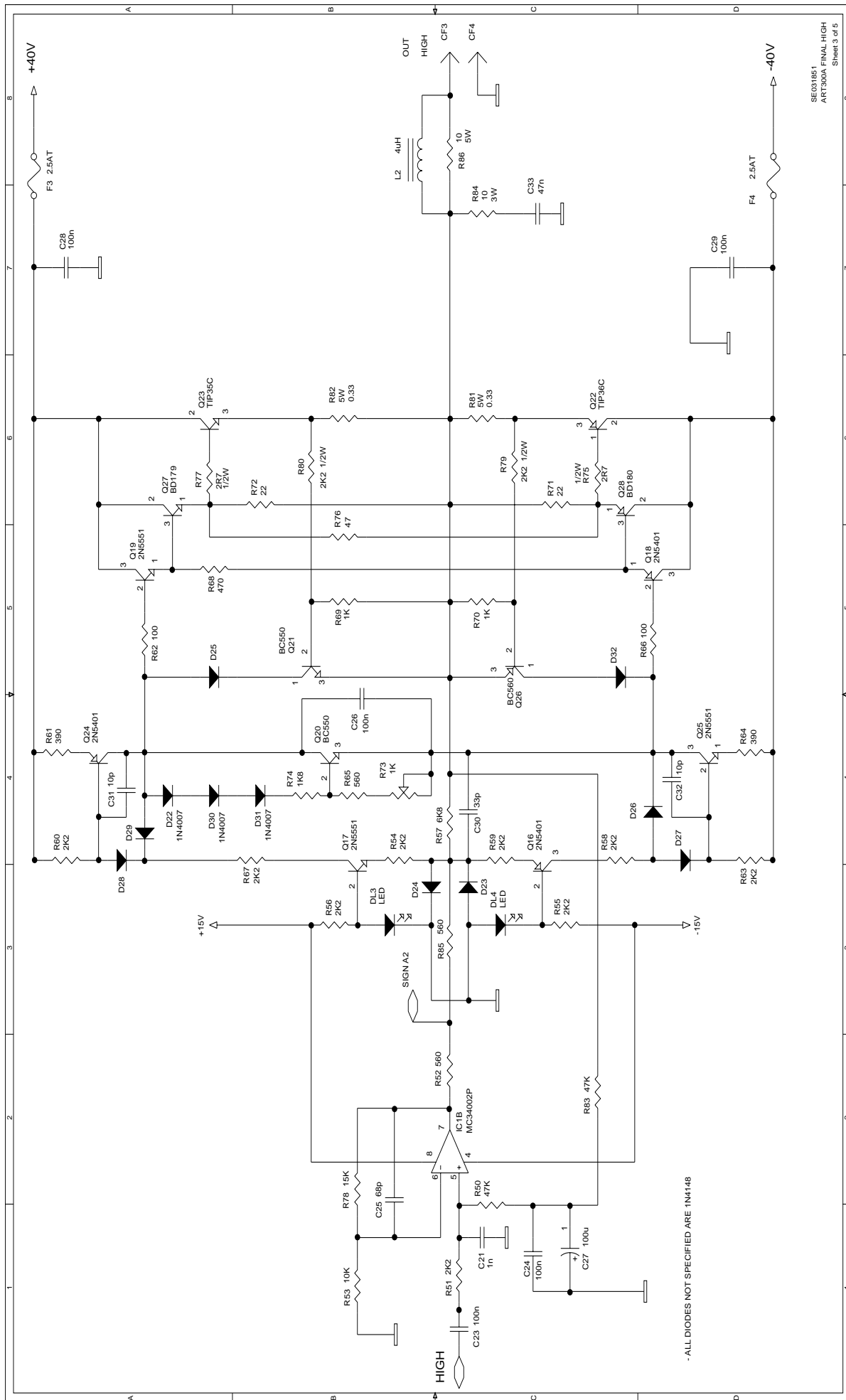
PART #	DESCRIPTION	QUANTITY	NOTES
33170820	INPUT BOARD COVER PLATE 33270.....	1	



ART 300A Low/High Crossover



ART300A Service Manual

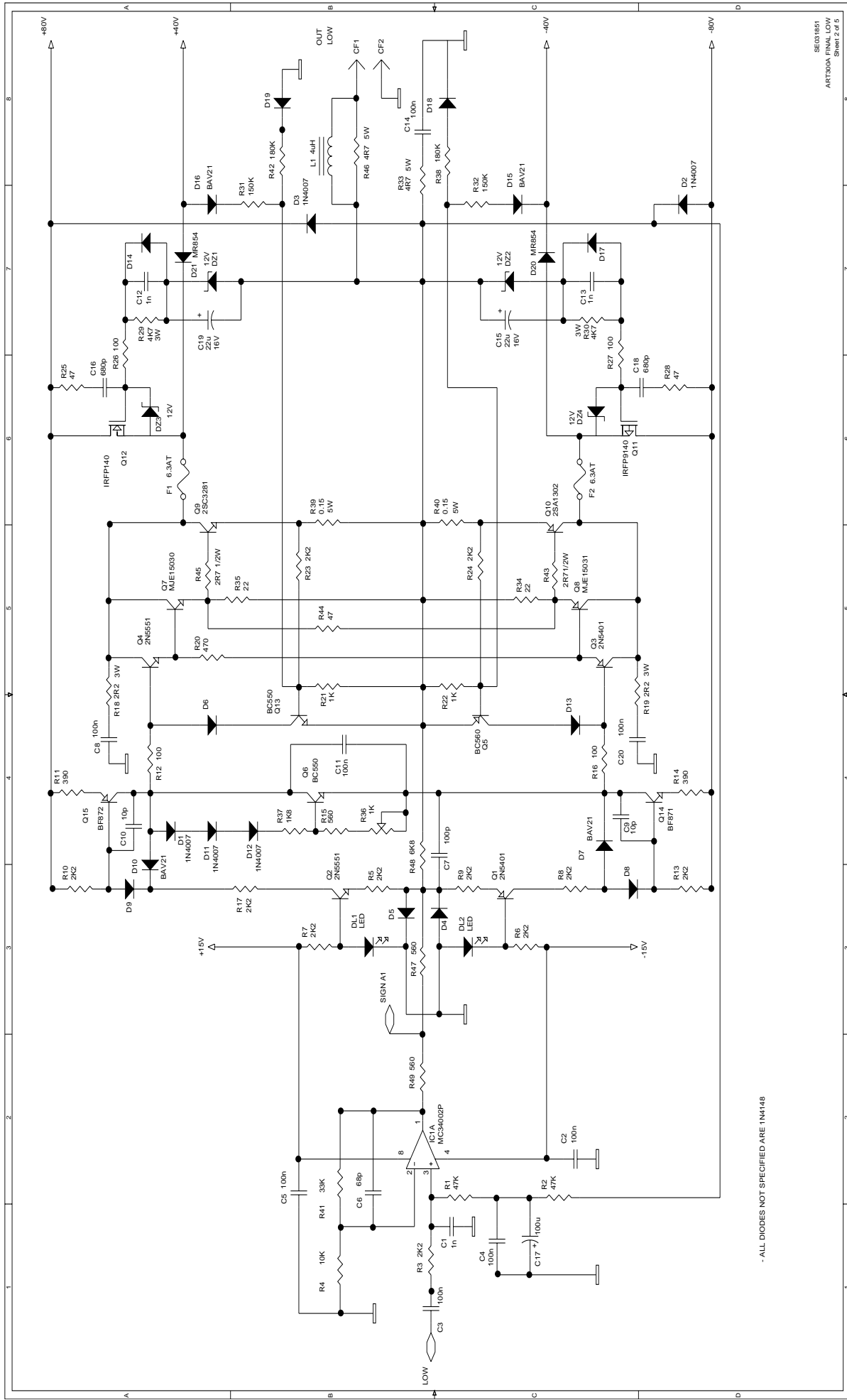


SE1031851
ART300A FINAL HIGH
Sheet 3 of 5

ART 300A High Frequency Amplifier

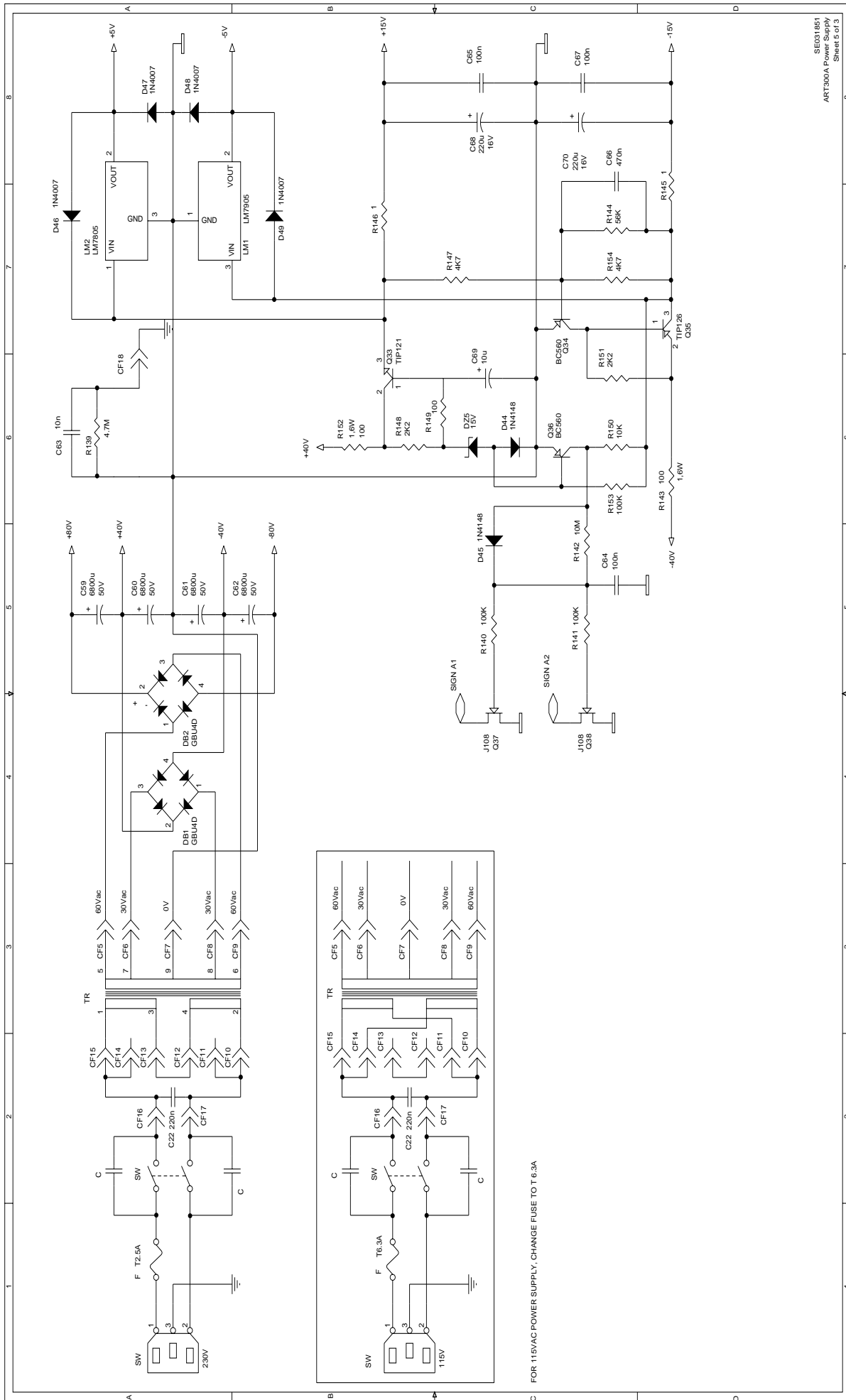


ART300A Service Manual



- ALL DIODES NOT SPECIFIED ARE 1N4148

SEC01851
ART300A FINAL LOW
Sheet 2 of 5



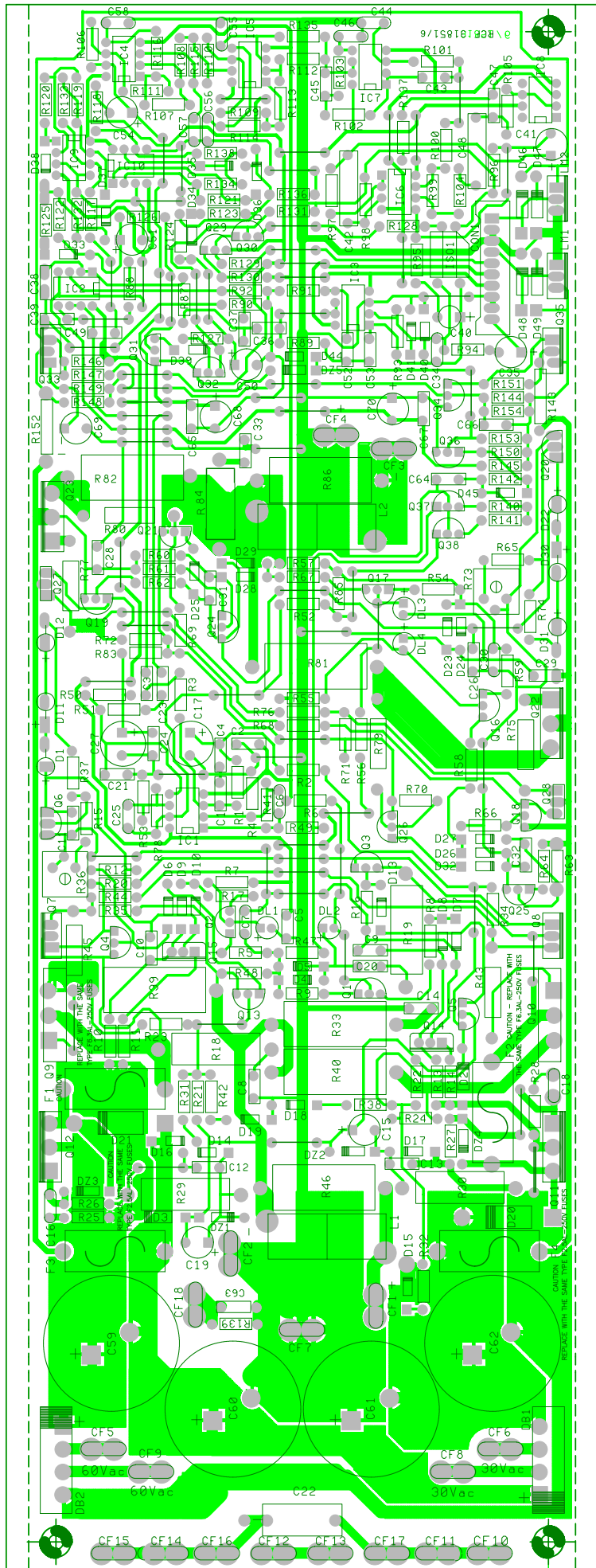
FOR 115VAC POWER SUPPLY, CHANGE FUSE TO T 6.3A

SE001851
ART300A Power Supply
Sheet 5 of 3

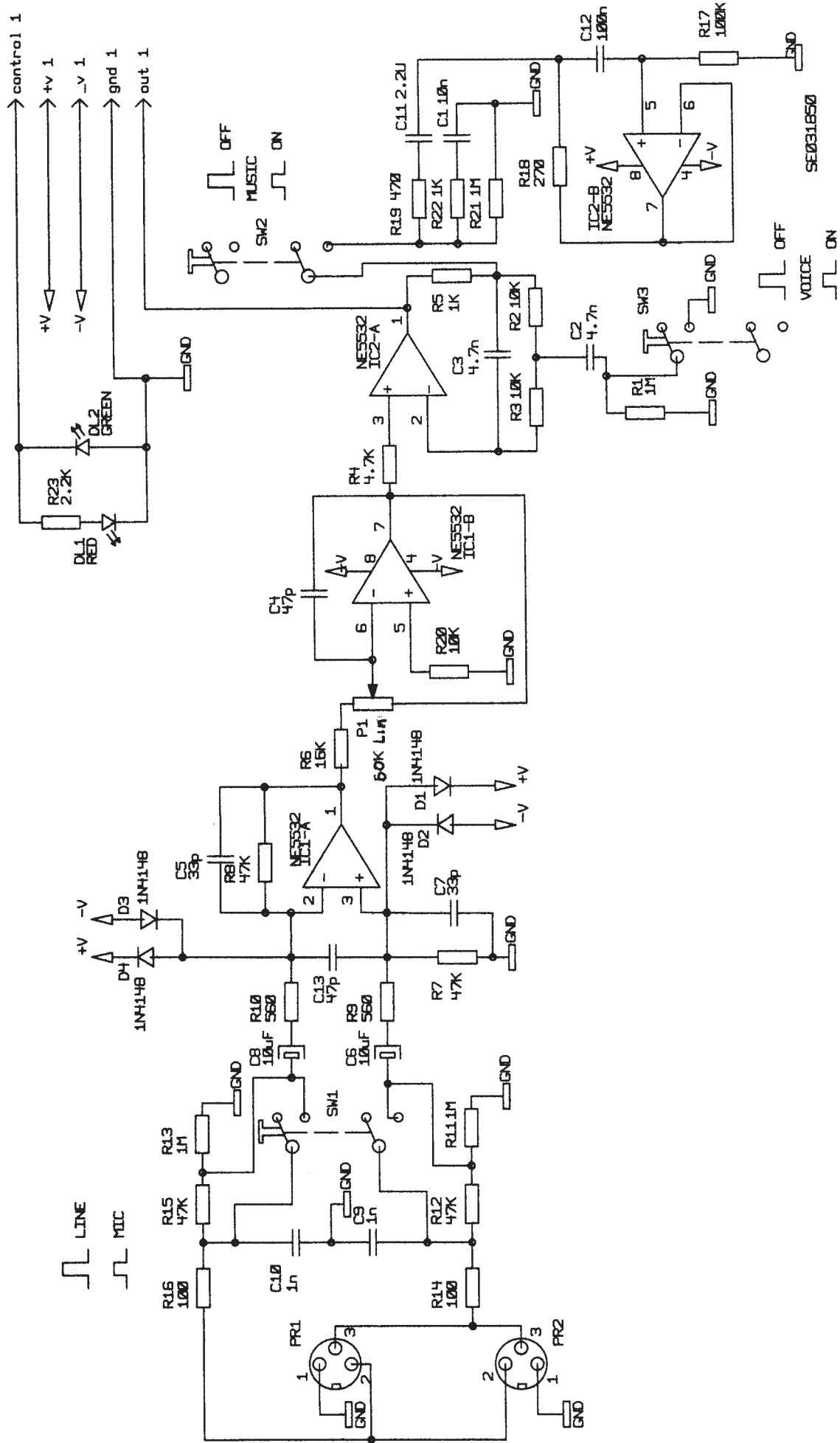
ART 300A Power Supply

ART300A Service Manual

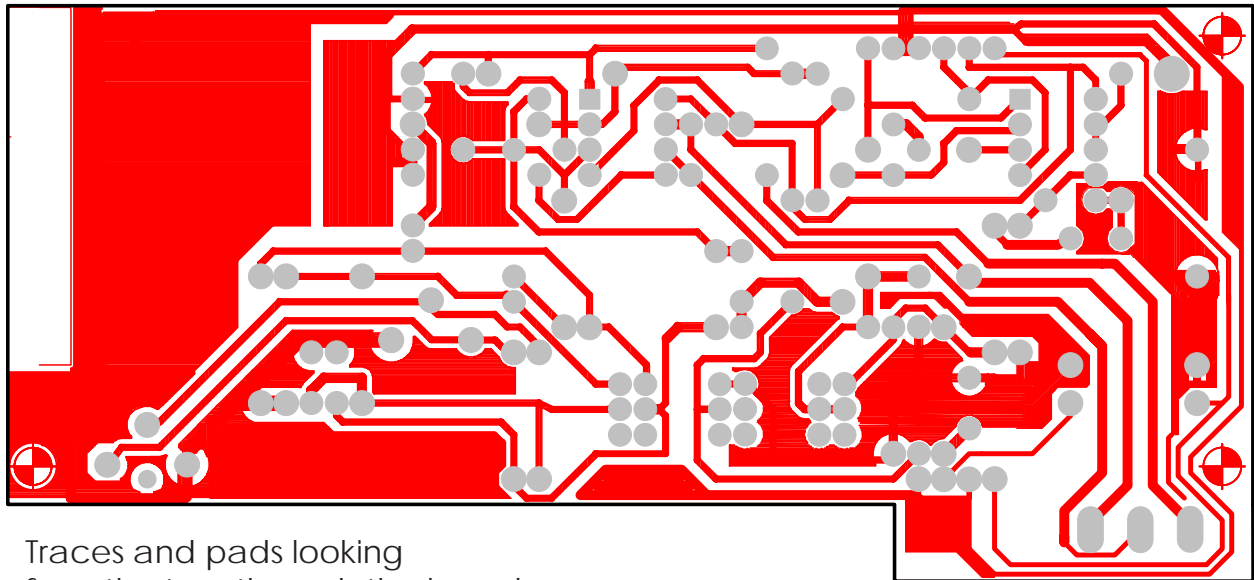
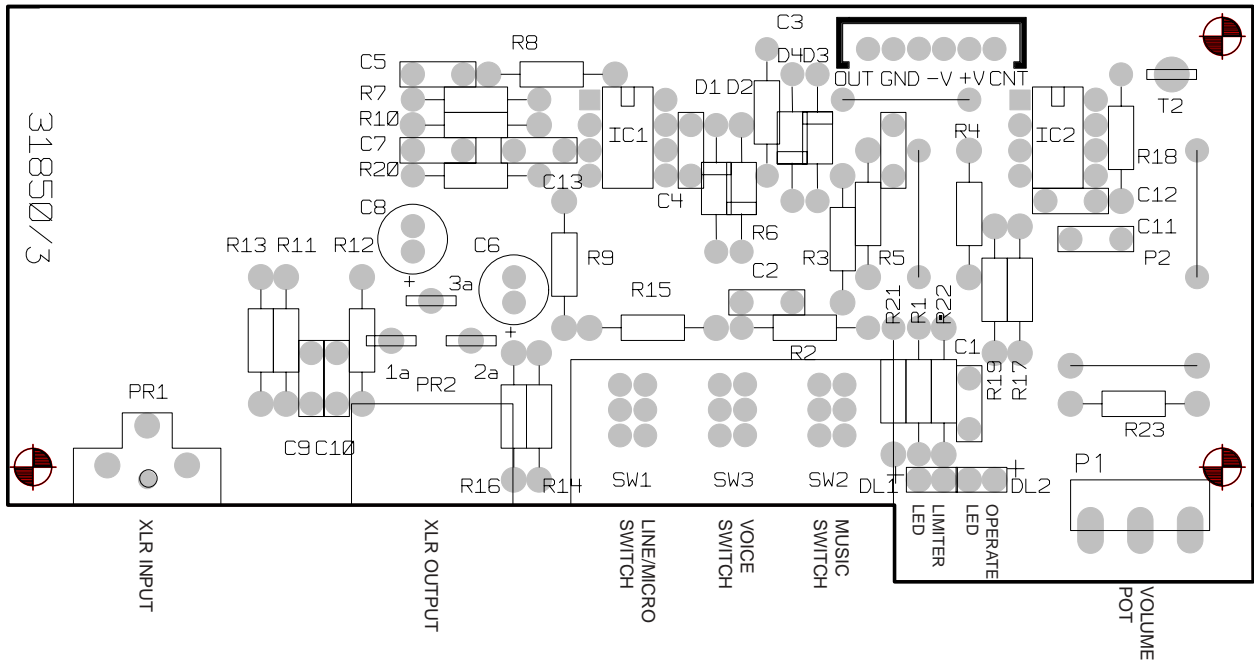




ART 300A Main Circuit Board 31851



ART 300A Input Board



Traces and pads looking from the top, through the board.

ART 300A Input Board 31850