

ROTEL *hifi*

STEREO POWER AMPLIFIER

RB-930AX

TECHNICAL MANUAL

TABLE OF CONTENTS

Chassis Layout.....	1
Specifications.....	2
Adjustment.....	2
PC Board Ass'y Parts List.....	3
Wiring Diagram.....	4
Schematic Diagram.....	5
Printed Circuit Board.....	6

THE ROTEL CO., LTD.

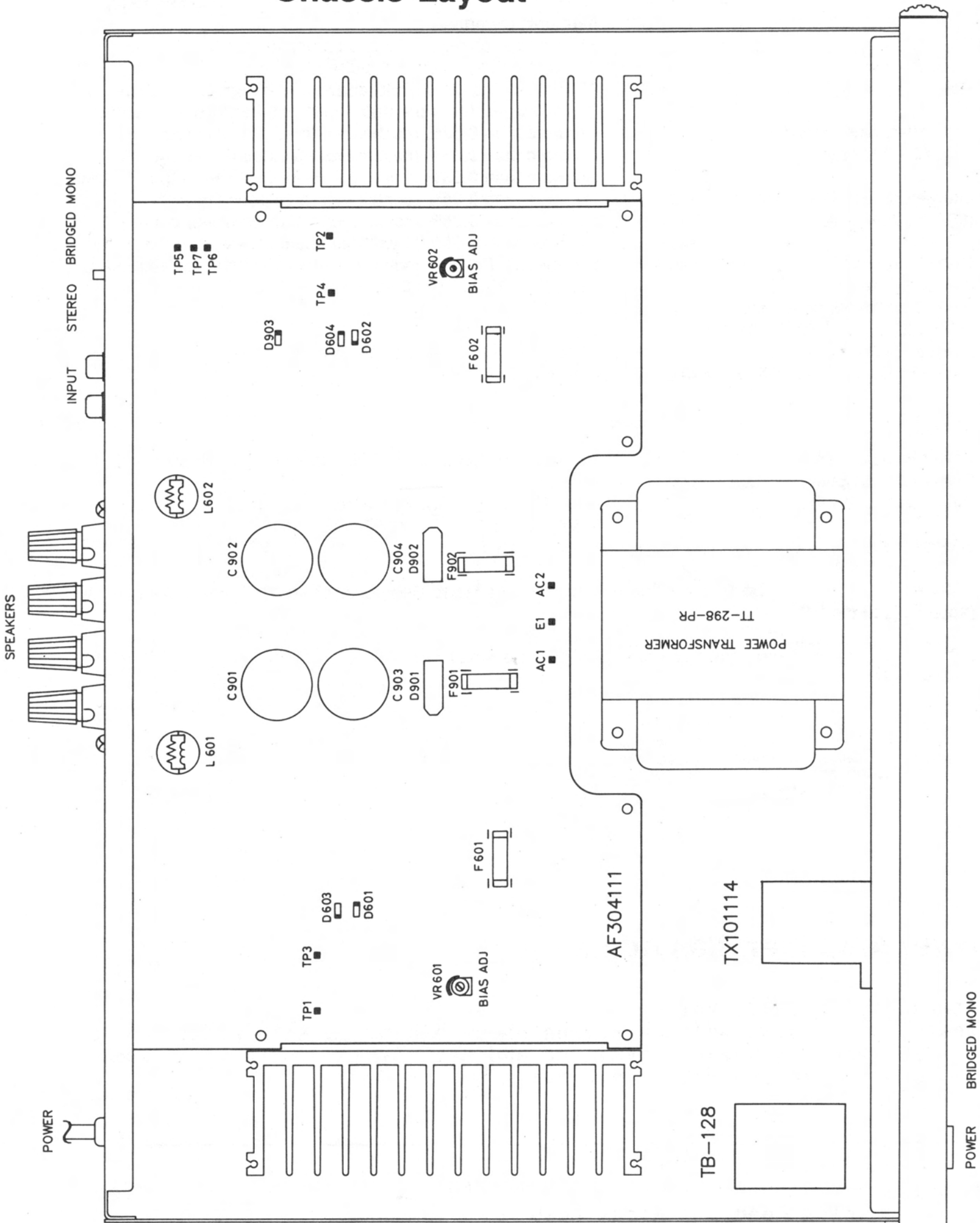
1-36-8, OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN

ROTEL ELECTRONICS CO., LTD.

3F-2, NO.35, FU HSING NORTH ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

MN20002103

Chassis Layout



POWER

INPUT STEREO BRIDGED MONO

SPEAKERS

POWER BRIDGED MONO

TP5
TP7
TP6

TP2

VR602
BIAS ADJ

D903

TP4

D604
D602

F602

L602

C902

C904
D902

F902

AC1 E1 AC2

POWER TRANSFORMER
TT-298-PR

L601

C901

C903
D901

F901

AF304111

TP3

D603
D601

VR601
BIAS ADJ

F601

TX101114

TB-128

Specifications

Continuous Power Output	30 watts* per channel, min. RMS both channels driven into 8 ohms from 20 to 20,000 Hz with no more than 0.03% total harmonic distortion..
DIN Output	55 watts per channel (1kHz, 4 ohms, 1% THD)
Peak Current	20A (0.1 ohms, 10 μsec, 1 pulse)
Power Output (BTL).....	90 watts (mono) min. RMS driven into 8 ohms from 20 to 20,000 Hz with no more than 0.03% total harmonic distortion.
Total Harmonic Distortion	No more than 0.03% (continuous rated power output)
(20 to 20,000 Hz)	No more than 0.03% (continuous 1/2 rated power output).
	No more than 0.03% (1 watt per channel power output, 8 ohms).
Intermodulation Distortion.....	No more than 0.05% (continuous rated power output)
(60 Hz : 7 kHz= 4:1)	No more than 0.05% (continuous 1/2 rated power output).
	No more than 0.05% (1 watt per channel power output, 8 ohms).
Output (Speakers)	8 ohms min (bridged mono mode); 4-16 ohms (stereo mode)
Damping Factor.....	180 (20 to 20,000 Hz, 8 ohms)
Input Sensitivity/Impedance.....	1.0 V / 27 kohms
Overload Level (THD 0.5 %, 1 kHz).....	5 V
Frequency Response	15 to 100,000 Hz, +0 dB, -1.0 dB
Signal to Noise Ratio (IHF, A network).....	116 dB

GENERAL

Power Requirement	120 V/60 Hz, 220-240 V/50 Hz (depending on destination)
Power Consumption.....	180 watts
Dimension (overall)	440 (W) x 92 (H) x 334 (D) mm
	7-3/8" x 3-5/8" x 13-3/16"
Weight (net).....	6.5 kg / 14.3 lbs

* Measured pursuant to the Federal Trade Commission's Trade Regulation Rule or, Power Claims for Amplifiers (applicable to the USA only).

NOTE: Specifications and design are subject to possible modification without notice.

Power Amplifier Bias Adjustment

Instruments: DC milli-voltmeter
 Notes: Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up power Transistor and Heat Sink.
 Set Volume Control to minimum.

Step	Coupling		Adjust	Adjust for
	Plus Lead	Minus Lead		
1	TP1	TP3	VR601	DC milli-voltmeter reads 4 mV
2	TP2	TP4	VR602	

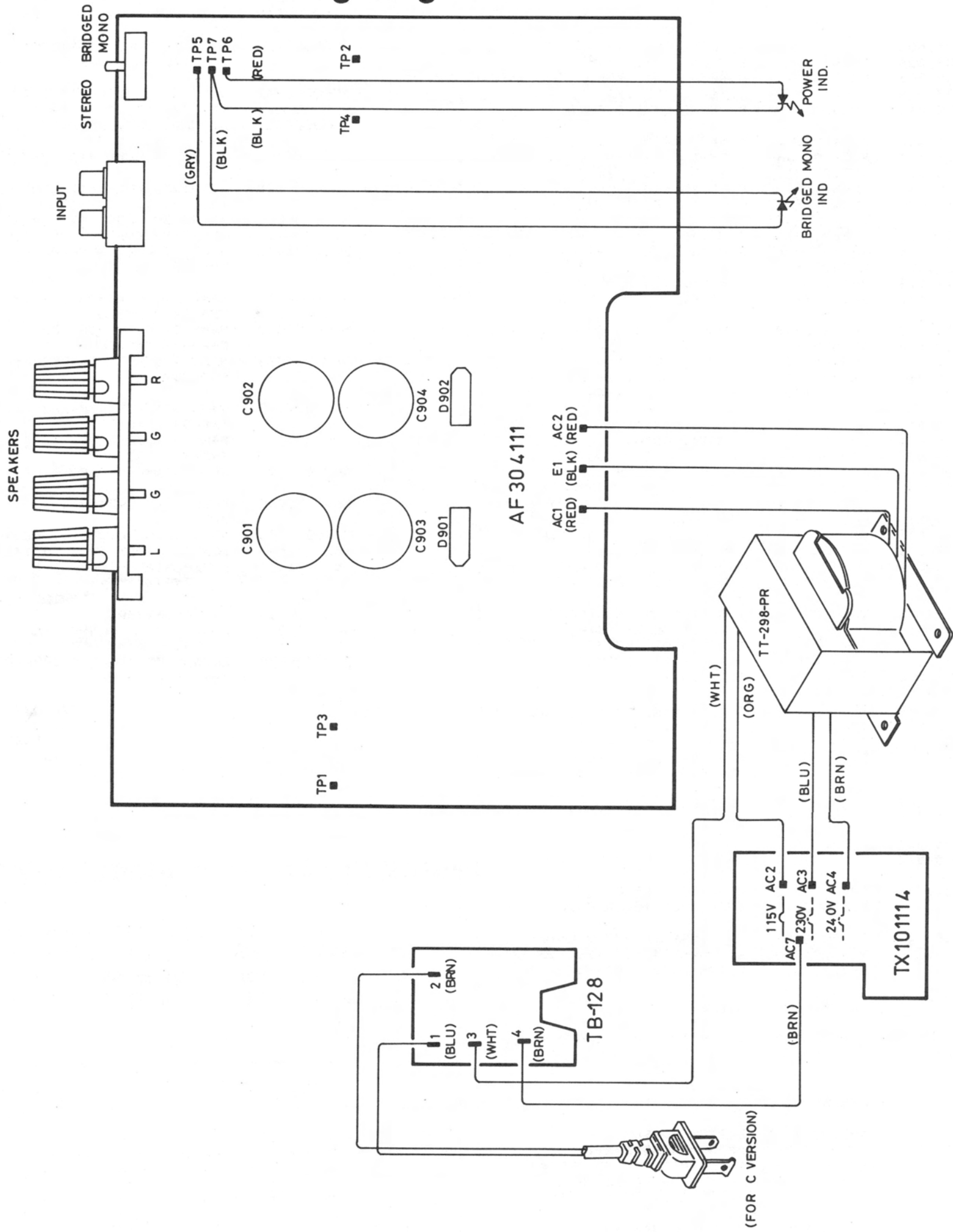
Parts List

NOTE: THE COMPONENTS INDENTIFIED BY Δ MARK ARE FOR SAFFTY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.

SYMBOL	PARTS NO.	DESCRIPTION
	AF304111 PCB ASSEMBLY	
R601, 602	RM51001816	R, METAL 1K 1/4W F
R603, 604	RM54752810	R, METAL 47k5 1/4W F
R605, 606	RM51501813	R, METAL 1K5 1/4W F
R607, 608	RM54750812	R, METAL 475 1/4W F
R609, 610	RM56811816	R, METAL 6K81 1/4W F
R611, 612	RM54750812	R, METAL 475 1/4W F
R613, 614	RM51002810	R, METAL 10K 1/4W F
R615, 616	RM51000812	R, METAL 100 1/4W F
R617, 618	RM56811816	R, METAL 6K81 1/4W F
R619, 620	RM52211818	R, METAL 2K21 1/4W F
R621, 622	RM54759815	R, METAL 47.5 1/4W F
R623, 624	RM53322818	R, METAL 33K2 1/4W F
R625, 626	RM52210814	R, METAL 221 1/4W F
R627, 628	RM52210814	R, METAL 221 1/4W F
R629-632	RM90228220	R, METAL OXIDE FILM 2W 0.22J
R633, 634	RM53322818	R, METAL 33K2 1/4W F
R635, 636	RM58251814	R, METAL 8K25 1/4W F
R637	RM58251814	R, METAL 8K25 1/4W F
R638, 639	RM53320810	R, METAL 332 1/4W F
R640	RM51821819	R, METAL 1K82 1/4W F
R641-644	RM90228220	R, METAL OXIDE FILM 2W 0.22J
R645, 646	RM91009127	R, METAL OXIDE FILM 1W 10J
C601, 602	CE01006500	CAP, ELEC. 50V 10uF
C605, 606	CE01005064	CAP, ELEC. 6.3V 100uF
C607, 608	CC33311434	CAP, CERAMIC 50V 330P
C609, 610	CC31511432	CAP, CERAMIC 50V 150P
C611, 612	CC31009465	CAP, CERAMIC 50V 0.01uF
C613, 614	CM01008423	CAP, MYLAR 50V 104
C615, 616	CC32211432	CAP, CERAMIC 50V 220P
C617, 618	CC01512434	CAP, CERAMIC 50V 15P
Q601-608	TR10000023	TRANSISTOR 2SA1016F/G
Q609, 610	TR10000047	TRANSISTOR 2SB631KE
Q611, 612	TR30000169	TRANSISTOR 2SC1941K
Q613-616	TR40000069	TRANSISTOR 2SD600KE
Q617, 618	TR10000047	TRANSISTOR 2SB631KE
Q619-624	TR40000045	TRANSISTOR 2SD1047D/E
Q625, 626	TR20000040	TRANSISTOR 2SB817D/E
D601-604	DD80000021	DIODE IN4148
VR601, 602	RV40000022	SEMI-FIXED RES. VM6CKPV-1S-B 2.2K
L601, 602	LC23310002	ANTI-PARASITIC COIL TRL-331
F601, 602	FU25000028	FUSE 125V 4A UL Δ
	FU23000190	FUSE 250V T4A S Δ
R901	RM51821819	R, METAL 1K82 1/4W F
D901, 902	DD10000020	DIODE PBL-403
C901-904	CE56804451	CAP, ELEC. 50LPSS68000M
C905-912	CC01009256	CAP, CERAMIC 250V 0.01uF
D903	DD20000181	DIODE RD-6.2E
F901, 902	FU25000041	FUSE 125V 6A UL Δ
	FU23000219	FUSE 250V T6.3A S Δ
C002	CC05009465	CAP, CERAMIC 50V 0.047uF
VR1, VR2	RV10001760	R, VARIABLE 4TR-2981 50KBx1
S1	SH20000319	SLIDE SWITCH 4TR-2294
	TB128-A PCB ASSEMBLY	
S001	SH40000120	POWER SWITCH C-3600B-T Δ
C001	CK00000035	SPARK KILLER DE7150F472M Δ
	OTHERS	
	AB00000717	BOTTOM BOARD 3TQZ-5#1
	AF20000179	FRONT CHASSIS 2TTF-2C
	AM00002098	CHASSIS BODY 2TR-2966#2
	AR20000711	PRINTED REAR CHASSIS TRP-630
	PT29811200	POWER TRANSFORMER TT-298-PR Δ

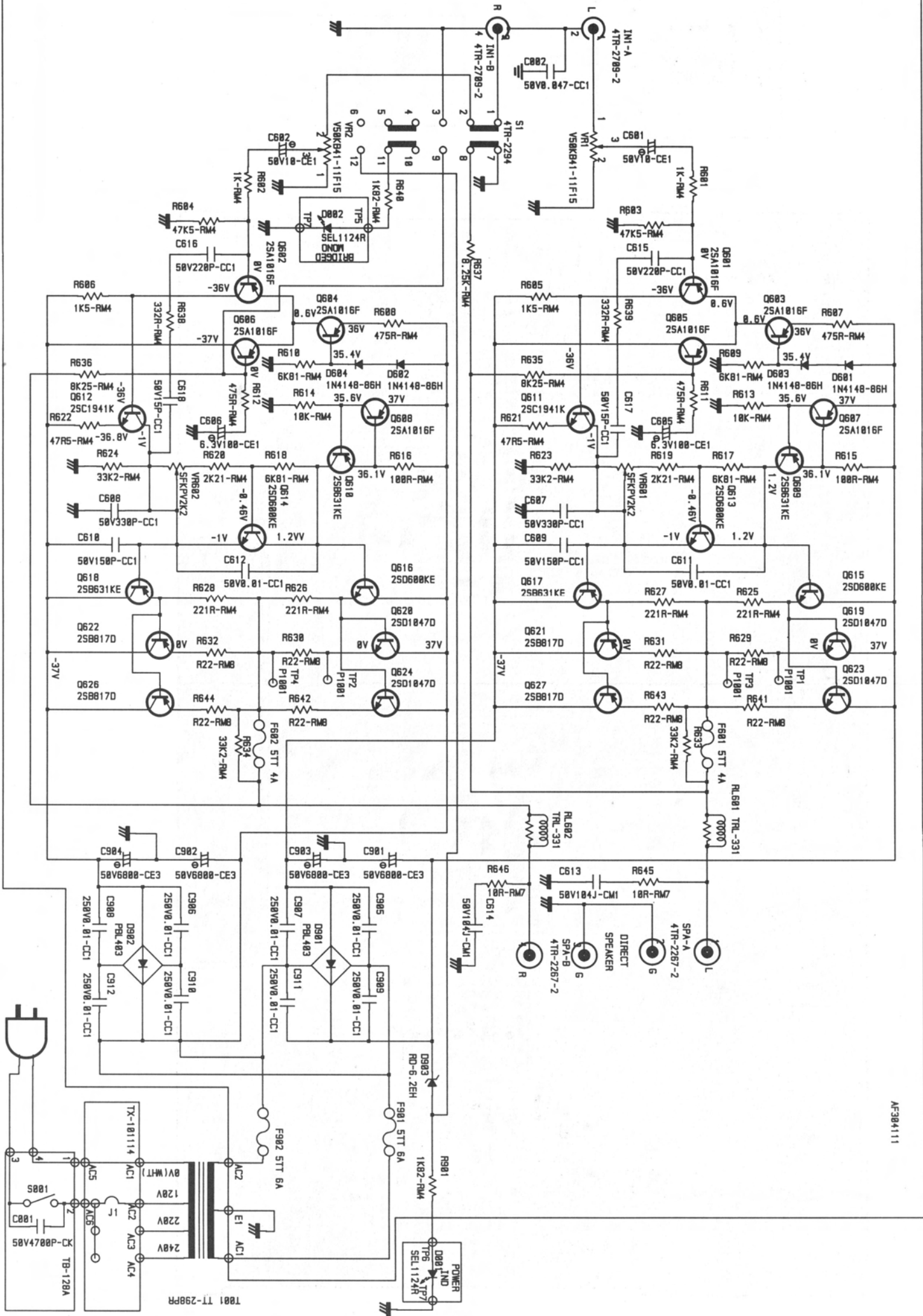
SYMBOL	PARTS NO.	DESCRIPTION
	BC00000817	CYLINDER BUSH 4TVL-7#8 6Fx13H
	FT00000229	PLASTIC FOOT 4TSH-19#2 50Fx14H
	FT00000242	FOOT 4TR-2823#2 24Fx14H
	SC00000027	AC CORD STOPPER SR-4N-4 Δ
	CD00000218	AC CORD SPT-2 AWG#18 4TR-670#4 (U,C,A,J) Δ
	CD00000322	AC POWER CORD 4TR-2757(D) Δ
	CD00000048	AC POWER CORD 4TR-1037 (H,E,Y1,Y2,S1) Δ
	CD00000085	AC POWER CORD C-2504A(K1) Δ
	CD00000115	AC POWER CORD C-3763-T(G) Δ
	NP00001949	NAME STICKER 4TR-2828#1 TNP-382 AC120V
	NP00001974	NAME STICKER 4TR-2828#4 TNP-385 AC120V-C
	NP00001962	NAME STICKER 4TR-2828#3 TNP-384 AC240V
	NP00001998	NAME STICKER 4TR-2828#5 TNP-389 AC230V
	NP00002012	NAME STICKER 4TR-2828#6 TNP-391 AC100V
	NP00001950	NAME STICKER 4TR-2828#2 TNP-383 AC220V
	AH20001027	HEAT SINKER BOARD 4TR-2989
	AA20000750	FRONT PANEL 2TQH-1#3 TFP-697
	BU00001145	POWER RING 4TQF-13 14X14
	KB20002681	POWER BUTTON 4TQF-15 14x14
	OM10001272	ORNAMENTAL SIDE BOARD 4TR-2797#2
	DD40000095	LED SEL1124R
	OM70000065	PUSH BUTTON CONNECTOR 4TTL-15
	SN00000179	BUTTON SPRING 4TR-1988A#2 10F
	AU00001201	TOP COVER POLY 3TTF-5#7
	SR00000882	UPPER COVER 4TR-2418
	MN10003062	OWNER'S MANUAL RB-930AX
	PL00001142	STYROL SIDE MOULDING 2TTF-9A#3 TZ-165-1

Wiring Diagram



Schematic Diagram

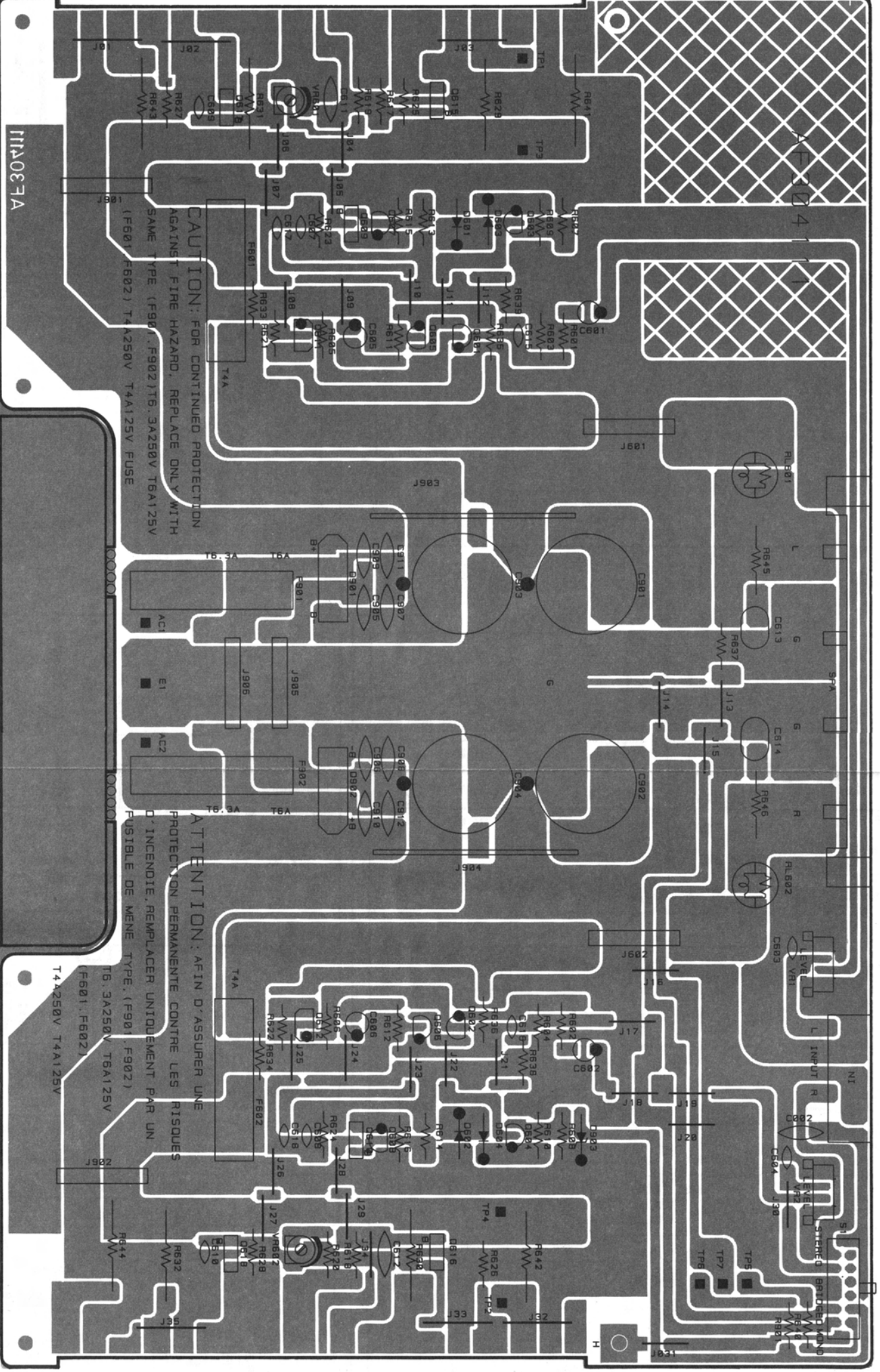
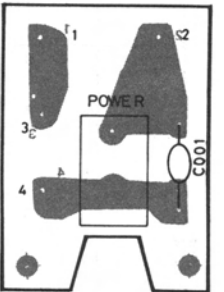
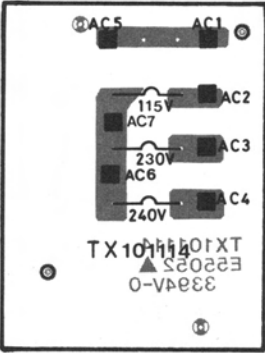
SCHEMATIC DIAGRAM RB-930AX



AF384111

ACIN 4TR-678-4

Printed Circuit Boards



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE (F901, F902, T16, 3A250V T6A125V (F601, F602), T4A250V T4A125V FUSE

ATTENTION: AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MENE TYPE. (F901, F902) T6, 3A250V T6A125V (F601, F602), T4A250V T4A125V

1112037A

T4A250V T4A125V

(F601, F602)

T6, 3A250V T6A125V

(F601, F602)

T4A250V T4A125V

(F601, F602)

T6, 3A250V T6A125V

(F601, F602)

T4A250V T4A125V

(F601, F602)

T6, 3A250V T6A125V

(F601, F602)

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(F601, F602)

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(F601, F602)

T6, 3A250V T6A125V

(F601, F602)

T4A250V T4A125V

(F601, F602)