

# Technical Manual

## STEREO/MONO POWER AMPLIFIER **RB-951 MKII**

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### Specification

|                                                                       |                                                                                                        |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Continuous Power Output Stereo Mode<br>(20 - 20 kHz, <0.03% THD)      | 50 watts/ch into 8 ohms                                                                                |
| Continuous Power Output Bridged Mono Mode<br>(20 - 20 kHz, <0.1% THD) | 150 watts/ch into 8 ohms                                                                               |
| Total Harmonic Distortion<br>(20 Hz : 20 kHz 8 ohms)                  | <0.03 %                                                                                                |
| Intermodulation Distortion<br>(60 Hz : 7 kHz 4 : 1)                   | <0.03 %                                                                                                |
| Frequency Response ( $\pm 1$ db)                                      | 15 Hz - 100 kHz                                                                                        |
| Damping Factor (20-20,000 Hz, 8 ohms)                                 | 280                                                                                                    |
| Speaker Impedance (combined load)                                     | Stereo mode: 4 ohms minimum<br>Bridged Mono mode: 8 ohms minimum<br>Parallel Mono mode: 2 ohms minimum |
| Signal to Noise Ratio (IHF A network)                                 | 116 dB                                                                                                 |
| Input Impedance                                                       | 32 k ohms                                                                                              |
| Input Sensitivity                                                     | 1.5 volt (low setting)<br>0.775 volt (high setting)                                                    |
| Auto Turn On Threshold Level (if activated)                           | 10 mV input signal                                                                                     |
| Auto Turn Off Delay Time (if activated)                               | 5 minutes with no signal                                                                               |
| Power Requirements                                                    | USA: 115 volts, 60 Hz<br>Europe: 230 volts, 50 Hz                                                      |
| Power Consumption                                                     | 200 Watts                                                                                              |
| Dimensions (W x H x D)                                                | 440 x 92 x 334 mm<br>17 3/8 x 3 5/8 x 13 1/4 in                                                        |
| Weight                                                                | 6.8 kg/15 lb.                                                                                          |

**THE ROTEL CO., LTD**

SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,  
TOKYO 150-0045, JAPAN

Serial. NO.  
Beginning

# Parts List - 1

| SYMBOL                        | PARTS NO. | DESCRIPTION                    |
|-------------------------------|-----------|--------------------------------|
| <b>X-1239-01 PCB ASSEMBLY</b> |           |                                |
| C601,602                      | 043       | TC50V331 CAP,CERA.50V330PF     |
| C603,604                      | 043       | TC50V221 CAP,CERA.50V220PF     |
| C605,606                      | 041       | UTSS1C101-FB CAP,ELEC.16V100UF |
| C607,608                      | 043       | TC50V331 CAP,CERA.50V330PF     |
| C609,610                      | 043       | TC50V151 CAP,CERA.50V150PF     |
| C611,612                      | 043       | TC50V103 CAP,CERA.50V0.01UF    |
| C613,614                      | 044       | 50MSAN104J CAP,FILM50V0.1UF    |
| C615,616                      | 043       | TC50V101 CAP,CERA.50V100PF     |
| C617,618                      | 041       | UTSS1E100-FB CAP,ELEC.25V10UF  |
| C619,620                      | 041       | UTSS1E101-FB CAP,ELEC.25V100UF |
| C621,622                      | 041       | UTSS1E470-FB CAP,ELEC.25V47UF  |
| C623,624                      | 041       | UTSS1H100-FB CAP,ELEC.50V10UF  |
| C625                          | 043       | TC50V473 CAP,CERA.50V0.047UF   |
| C701,702                      | 044       | 50MSAN104J CAP,FILM50V0.1UF    |
| C703                          | 041       | UTSS1E100-FB CAP,ELEC.25V10UF  |
| C704                          | 044       | 50MSAN104J CAP,FILM 50V0.1UF   |
| C705                          | 041       | UTSS1E471 CAP,ELEC.25V470UF    |
| C706                          | 042       | TP50V103J CAP,MYLAR50V0.01UF   |
| C708                          | 041       | UTSS1E101-FB CAP,ELEC.25V100UF |
| C710                          | 042       | TP50V183J CAP,MYLAR 50V0.018UF |
| C901-908                      | 043       | TC500V103 CAP,CERA.500V0.01UF  |
| C909-912                      | 041       | 63USP682 CAP,ELEC.63V6800UF    |
| C913,914                      | 041       | UTSS1H4R7-FB CAP,ELEC.50V4.7UF |
| D601-608                      | 034       | T1N4148-86 DIODE               |
| D609,610                      | 034       | T1N4003-TB DIODE               |
| D621,622                      | 034       | TRD5.6JST1 ZENER DIODE         |
| D701,702                      | 034       | T1N4148-86 DIODE               |
| D911,912                      | 034       | RS403L BRIDGED DIODE           |
| F901,902                      | 036       | 5ST6.3 MINI FUSE 250VT6.3A     |
| IC601,602                     | 031       | MPC1237HA IC                   |
| IC701                         | 031       | NJM555D IC                     |
| L601,602                      | 021       | TRL-331 COIL                   |
| PJ1,2                         | 066       | 4TR-2709#2 2P PINJACK          |
| Q601-608                      | 032       | TA1016-FG TRANSISTOR           |
| Q609,610                      | 032       | B631-EF TRANSISTOR             |
| Q611,612                      | 032       | TC1941-KL TRANSISTOR           |
| Q627-632                      | 032       | TC536-FG TRANSISTOR            |
| Q633-636                      | 032       | TA608-FG TRANSISTOR            |
| Q701-704                      | 032       | TC536-FG TRANSISTOR            |
| R601,602                      | 054       | TMF1001 R,METAL 1K             |
| R603,604                      | 054       | TMF4702 R,METAL 47K            |
| R605,606                      | 054       | TMF1500 R,METAL 150R           |
| R607,608                      | 054       | TMF4700 R,METAL 470R           |
| R609,610                      | 054       | TMF1501 R,METAL 1.5K           |
| R611,612                      | 054       | TMF6801 R,METAL 6.8K           |
| R613-616                      | 054       | TMF7500 R,METAL 750R           |
| R617-620                      | 054       | TMF1002 R,METAL 10K            |
| R621,622                      | 054       | TMF47R0 R,METAL 47R            |
| R623,624                      | 054       | TMF1000 R,METAL 100R           |
| R625,626                      | 054       | TMF4700 R,METAL 470R           |

| SYMBOL    | PARTS NO. | DESCRIPTION                         |
|-----------|-----------|-------------------------------------|
| R627,628  | 054       | TMF1000 R,METAL 100R                |
| R629,630  | 054       | TMF6801 R,METAL 6.8K                |
| R631,632  | 054       | TMF2201 R,METAL 2.2K                |
| R633,634  | 054       | TMF3302 R,METAL 33K                 |
| R635,636  | 054       | TMF1801 R,METAL 1.8K                |
| R637,638  | 054       | TMF1003 R,METAL 100K                |
| R639,640  | 054       | TMF6801 R,META L6.8K                |
| R641-644  | 054       | TMF2200 R,METAL 220R                |
| R645-652  | 054       | 2WS0.22JF R,METAL 2W 0.22R          |
| R653,654  | 054       | 1WS10JF R,METAL 1W 10R              |
| R655      | 054       | TMF1002 R,METAL 10K                 |
| R656      | 054       | TMF6801 R,METAL 6.8K                |
| R657,658  | 054       | TMF5602 R,METAL 56K                 |
| R661,662  | 054       | TMF1001 R,METAL 1K                  |
| R663-666  | 054       | TMF1502 R,METAL 15K                 |
| R667,668  | 054       | TMF3300 R,METAL 330R                |
| R669,670  | 054       | TMF8200 R,METAL 820R                |
| R671,672  | 054       | TMF2202 R,METAL 22K                 |
| R673,674  | 054       | TMF1502 R,METAL 15K                 |
| R675,676  | 054       | TMF1201 R,METAL 1.2K                |
| R677,678  | 054       | TMF4701 R,METAL 4.7K                |
| R679,680  | 054       | TMF8200 R,METAL 820R                |
| R681,682  | 054       | TMF2702 R,METAL 27K                 |
| R683,684  | 054       | TMF4702 R,METAL 47K                 |
| R685,686  | 054       | TMF1003 R,METAL 100K                |
| R687,688  | 054       | TMF1203 R,METAL 120K                |
| R689,690  | 05        | 4TMF1003 R,METAL 100K               |
| R692      | 054       | TMF47R0 R,METAL 47R                 |
| R695,696  | 054       | TMF4703 R,METAL 470K                |
| R701,702  | 054       | TMF1003 R,METAL 100K                |
| R703      | 054       | TMF2203 R,METAL 220K                |
| R704      | 054       | TMF1203 R,METAL 120K                |
| R705      | 054       | TMF1002 R,METAL 10K                 |
| R706      | 054       | TMF1000 R,METAL 100R                |
| R707      | 054       | TMF4702 R,METAL 47K                 |
| R708,709  | 054       | TMF1003 R,METAL 100K                |
| R710      | 054       | TMF1004 R,METAL 1M                  |
| R711      | 054       | TMF4702 R,METAL 47K                 |
| R712      | 054       | TMF5603 R,METAL 560K                |
| R717      | 054       | TMF4702 R,METAL 47K                 |
| RL,RM     | 054       | TMF1002 R,METAL 10K                 |
| RY601,602 | 063       | DG2SU-24 RELAY                      |
| S601      | 064       | 4TR-2294 SLIDE SWITCH               |
| TH601,602 | 034       | TTC-503 THERMISTOR                  |
| VR603,604 | 051       | SFR002-222 SEMI-FIXED RESISTOR 2.2K |
|           | 067       | 4TR-3090 SPEAKER TERMINAL           |
|           | 068       | DM-2GM-O SHORT SOCKET               |
|           | 069       | C-3417A FUSE CLIP                   |

Parts List - 2

| SYMBOL                 | PARTS NO. | DESCRIPTION                      |
|------------------------|-----------|----------------------------------|
| X-1239-02 PCB ASSEMBLY |           |                                  |
| C001                   | 044       | DE7150F472M SPARK KILLER         |
| S001                   | 061       | C-4176A08 POWER SWITCH           |
| X-1239-03 PCB ASSEMBLY |           |                                  |
| C707                   | 041       | UTES1J221 CAP,ELEC.63V220UF      |
| D704                   | 034       | T1N4148-86 DIODE                 |
| D705,706               | 034       | T1N4003-TB DIODE                 |
| Q705                   | 032       | TC536-FG TRANSISTOR              |
| R713                   | 054       | 1WS3.3KJF R,METAL 1W 3.3K        |
| R714                   | 054       | 1WS1.2KJF R,METAL 1W1.2K         |
| R715                   | 054       | TMF8201 R,METAL 8.2K             |
| R716                   | 054       | TMF2202 R,METAL 22K              |
| RY701                  | 063       | DH2U-24 RELAY                    |
| X-1277-01 PCB ASSEMBLY |           |                                  |
| D1-4                   | 034       | LTL4262N LED                     |
| VR001,002              | 051       | C-4170A31 VARIABLE RESISTOR 50KB |
| X-1277-03 PCB ASSEMBLY |           |                                  |
| CON1                   | 067       | C-4635A02 2P TERMINAL BLOCK      |
| X-1277-04 PCB ASSEMBLY |           |                                  |
| D711                   | 034       | T1N4148-86 DIODE                 |
| IC702                  | 031       | PC817B PHOTO COUPLER             |
| Q706                   | 032       | TA608-FG TRANSISTOR              |
| R718                   | 054       | TMF1001 R,METAL 1K               |
| R719                   | 054       | TMF1003 R,METAL 100K             |
| S609                   | 064       | C-4660A00 SLIDE SWITCH           |

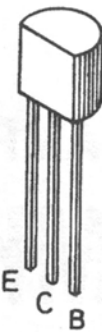
| SYMBOL               | PARTS NO.   | DESCRIPTION                 |
|----------------------|-------------|-----------------------------|
| HEAT SINKER ASSEMBLY |             |                             |
| Q613-616             | 033         | D600-EF TRANSISTOR          |
| Q617,618             | 033         | B631-EF TRANSISTOR          |
| Q619-622             | 033         | D1047-DE POWER TRANSISTOR   |
| Q623-626             | 033         | B817-DE POWER TRANSISTOR    |
|                      | 017         | RL4-08A00 HEAT SINKER BOARD |
|                      | 019         | TO-126 INSULATION SHEET(S)  |
|                      | 019         | TO-3P INSULATION SHEET(L)   |
| OTHERS               |             |                             |
| 011                  | FP-511      | FRONT PANEL ASSY            |
| 012                  | SD4-16A00   | PUSH BUTTON                 |
| 014                  | C-4550A08   | UPPER COVER                 |
| 014                  | RM4-07B00   | BOTTOM BOARD                |
| 015                  | RP-364      | PRINTED REAR CHASSIS        |
| 019                  | 4TR-2823#2  | PLASTIC FOOT 24F            |
| 019                  | 4TSH-19#2   | PLASTIC FOOT 50F            |
| 022                  | T-1051U02   | POWER TRANSFORMER           |
| 063                  | A-0710W-10A | BREAKER                     |
| 069                  | C-4629A01   | AC INLET                    |
| 072                  | C-4621A01   | AC CORDSET for STD          |
| 072                  | C-4622A01   | AC CORDSET for AUSTRALIA    |
| 072                  | C-4623A01   | AC CORDSET for UK           |
| 072                  | C-4624A01   | AC CORDSET for CEE          |
| 081                  | SQ4-33A00   | INSIDE CARTON               |
| 081                  | TZ-165      | STYROL SIDE MOULDING        |

Adjustment

- Instruments : DC milli-voltmeter
- Notes : Prior to Bias Adjustment, run about 5minutes with rated output(8ohms) and warm up Power Transistor and Heat Sink. Set input off.

| Step | Coupling | Location      | Adjust | Adjust for                   |
|------|----------|---------------|--------|------------------------------|
| 1    | TP1      | X-1239-01 PCB | VR603  | DC milli-voltmeter reads 4mV |
| 2    | TP2      | X-1239-01 PCB | VR604  |                              |

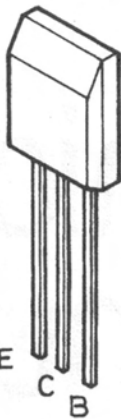
Case Outline



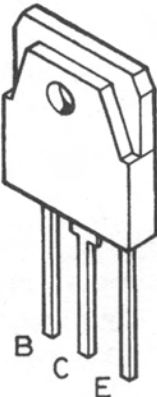
2SC536K  
2SA608K  
2SA1016K



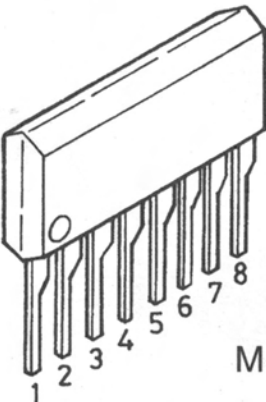
2SB631K  
2SD600K



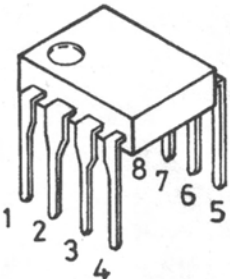
2SC1914



2SB817  
2SD1047

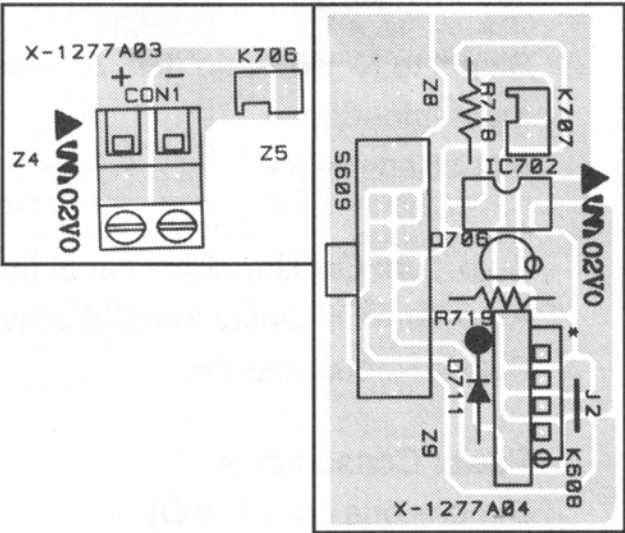
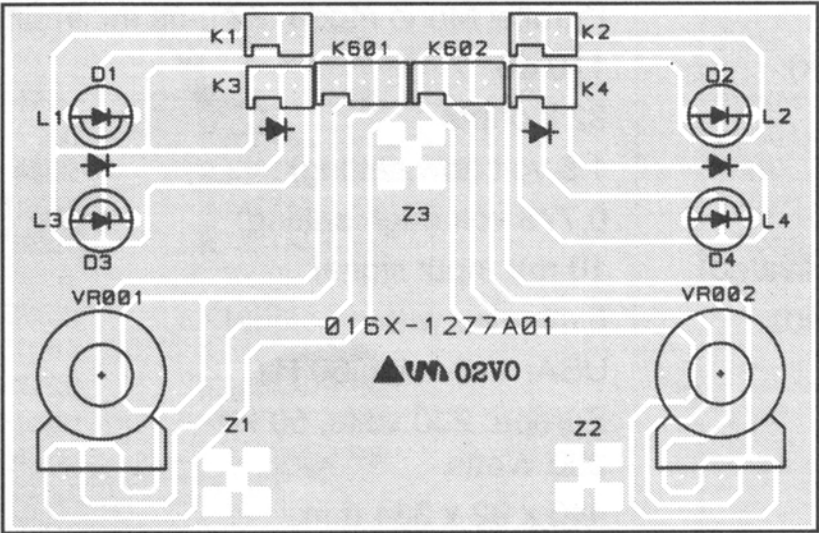


MPC1237HA

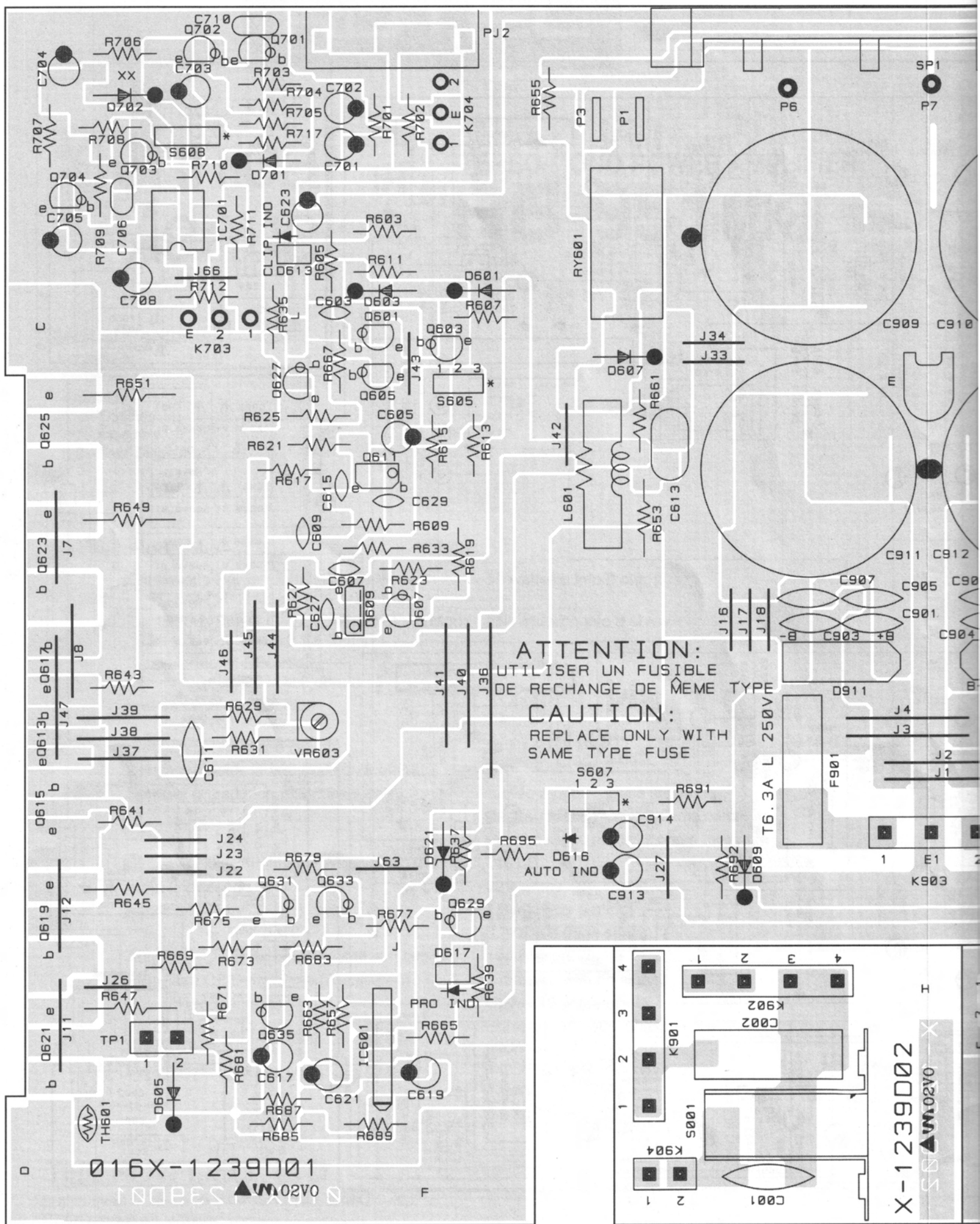


NJM555D

PCB Assembly



## PCB Assembly

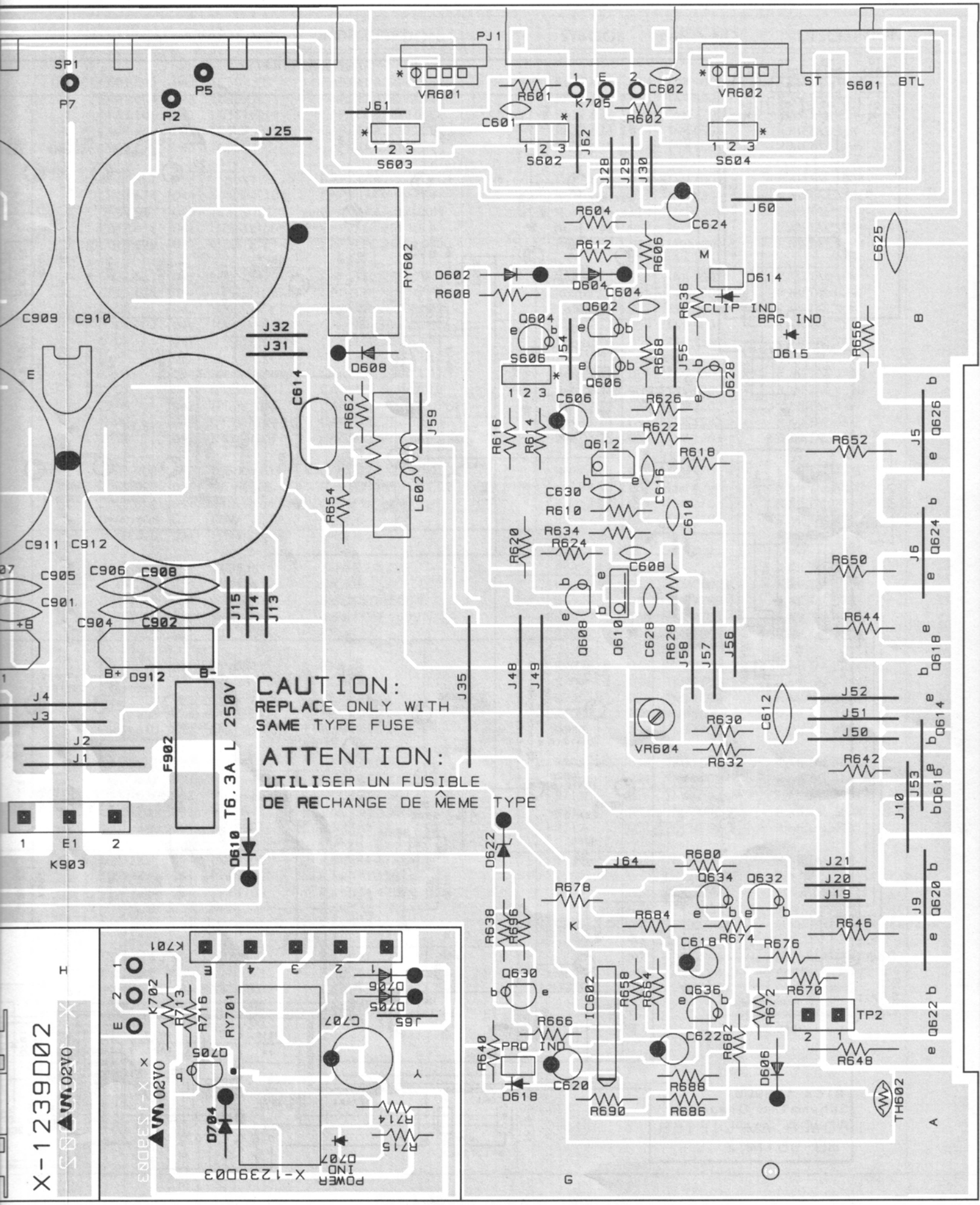


02V01W-01

▲IN 02V0

POWER  
IND

**ATTENTION:**  
UTILISER UN FUSIBLE  
DE RECHANGE DE MEME TYPE



# Schematic Diagram

