

MA-800S

5.1CH SATELLITE SPEAKERS

Service manual

IBBK

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SAFETY CAUTIONS

Before repairing, please read this Service Manual carefully. Pay attention to body safety, Carry out repairs properly to avoid not necessary damage.



This mark warns user of dangerous tension inside the enclosure of the unit, which may cause fire or electric shock.

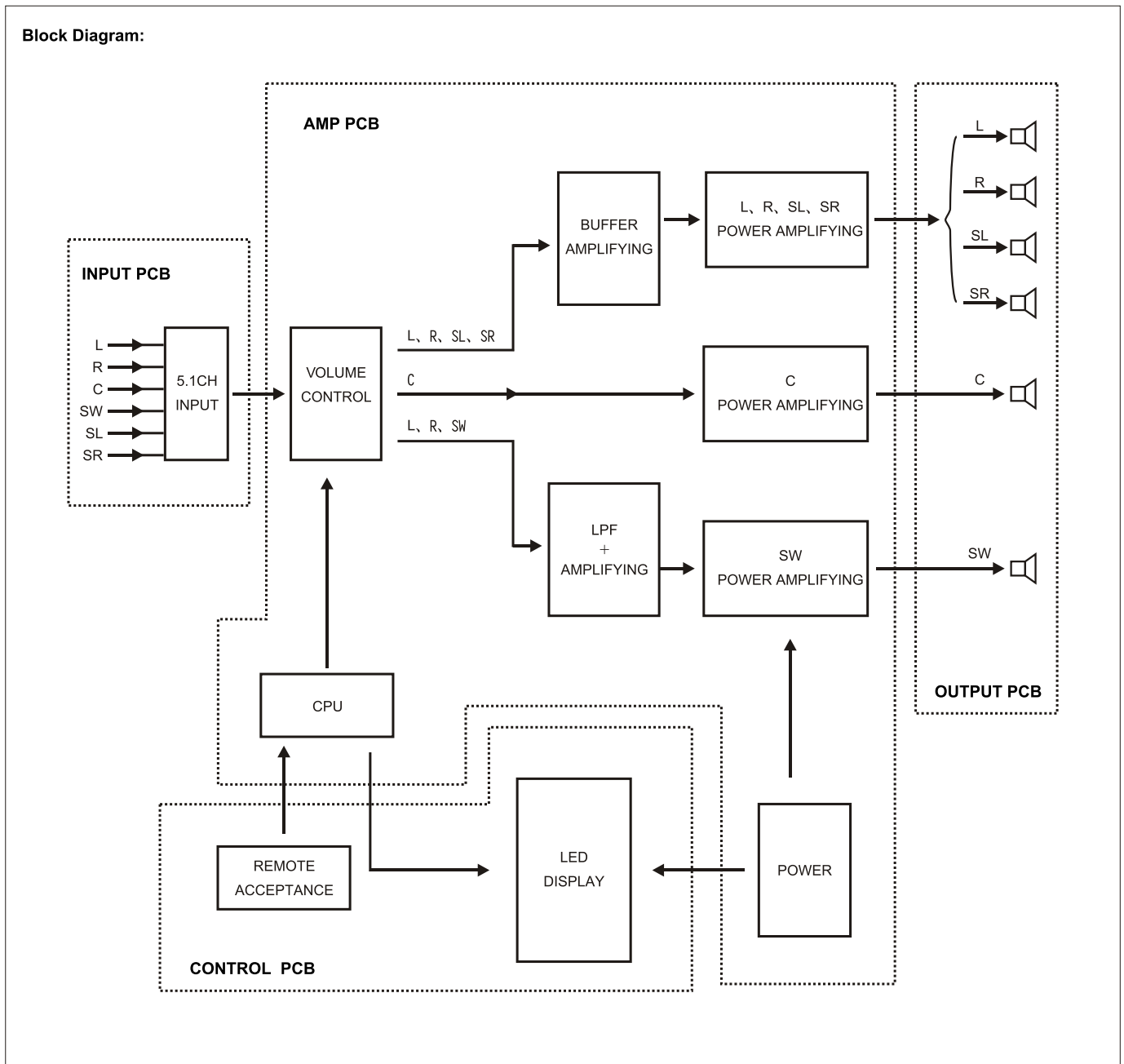


This mark means this unit belongs to Class Two equipment in terms of electricity protection. Not only basic but also double and enhanced insulation are implemented in this unit to avoid electric shock. There is no connection to the ground.

NOTES:

- Before repairing, turn off the power, and pull out the plug.
- Keep the AC cord from being trampled , pressed. If the AC cord is damaged ,please turn off the power immediately and change new one.
- During repairing, lease do not destroy the insulation of conducting cables and production cover of power switch.
- Change the blew fuse with the one of same specification
- After repairing, check all the cables to insure tight insertion and connection, bundle the cables as required to avoid noises.

BLOCK DIAGRAM:

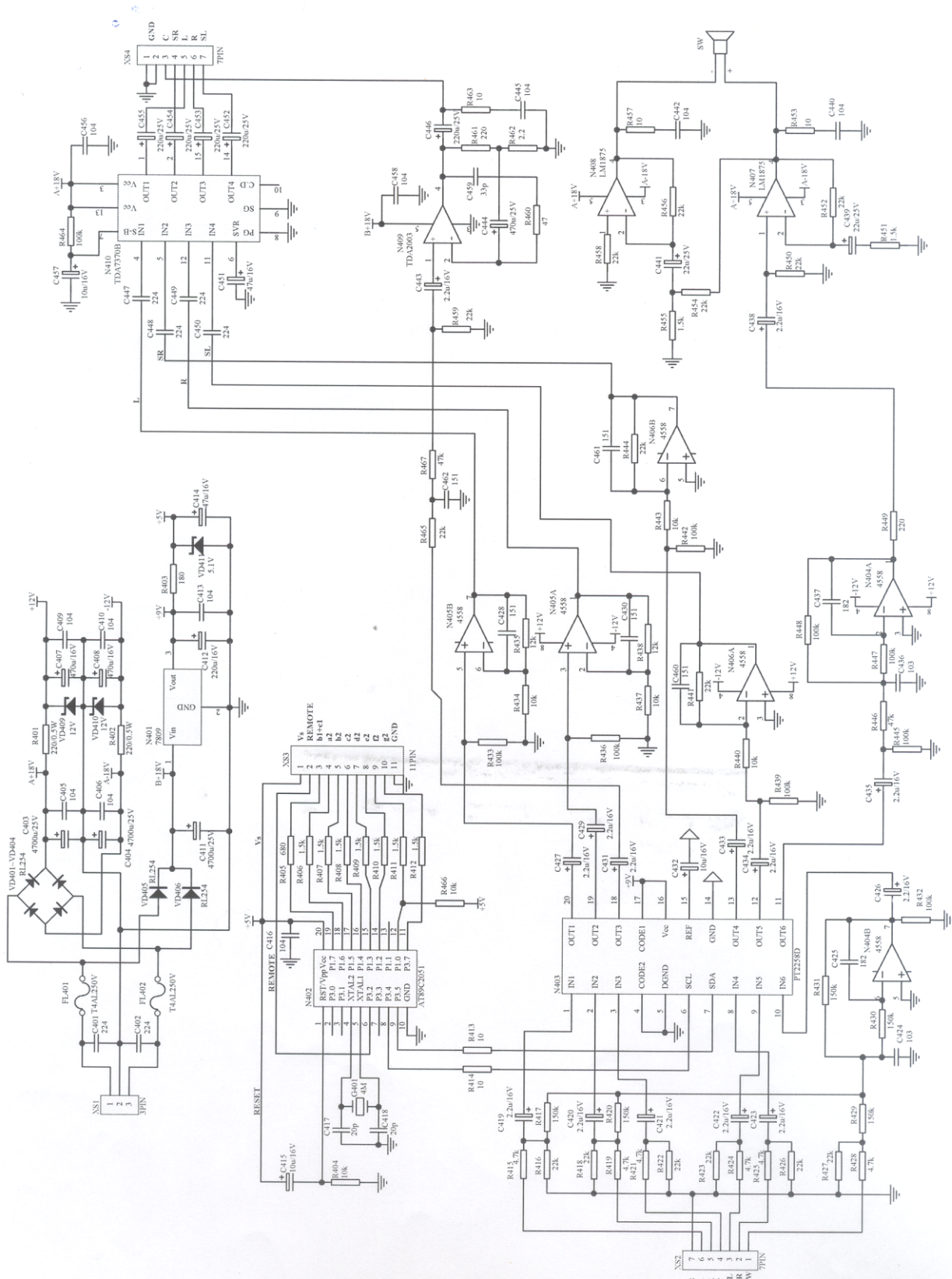


NOTE:

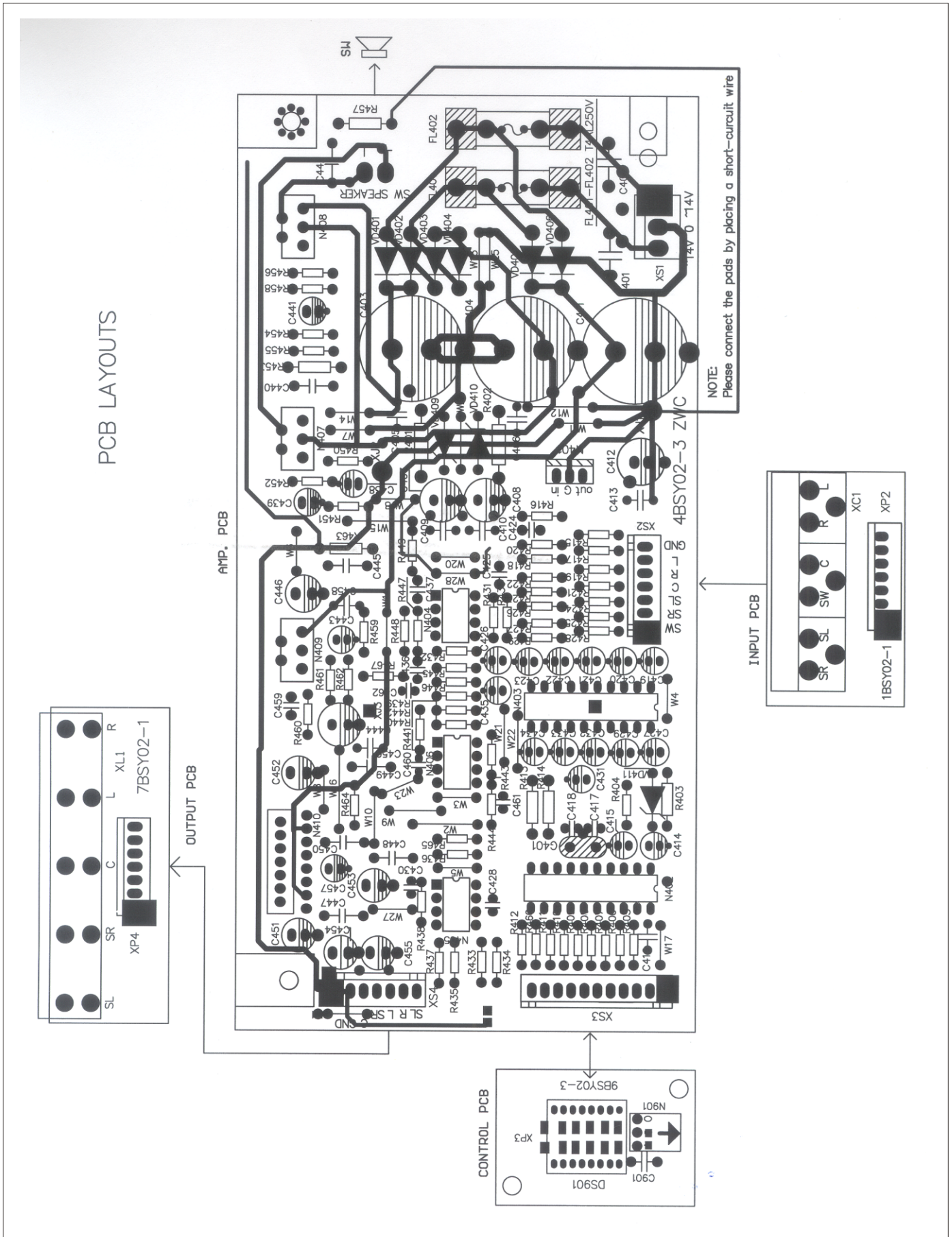
- PT2258 of PTC Company is used for 6 channel volume control
- NJM4558 is used for buffer amplifying and LPF circuit.
- AT89C2051 is used as CPU
- 4 audio Channel power IC TDA7370B of ST Company is used for power amplifying of L,R,SL,SR
- Power IC TDA2003 of ST Company is used for power amplifying for C channel.
- IC LM1875 of NC Company is used for power amplifying of SW channel.
- The LED is 7-segment LED digital tube is
- Bridge rectifying +Capacitance filter circuit are used for D.C. Power

AMPLIFIER PCB BLOCK DIAGRAM:

AMPLIFIER PCB BLOCK DIAGRAM:



BLOCK DIAGRAM:



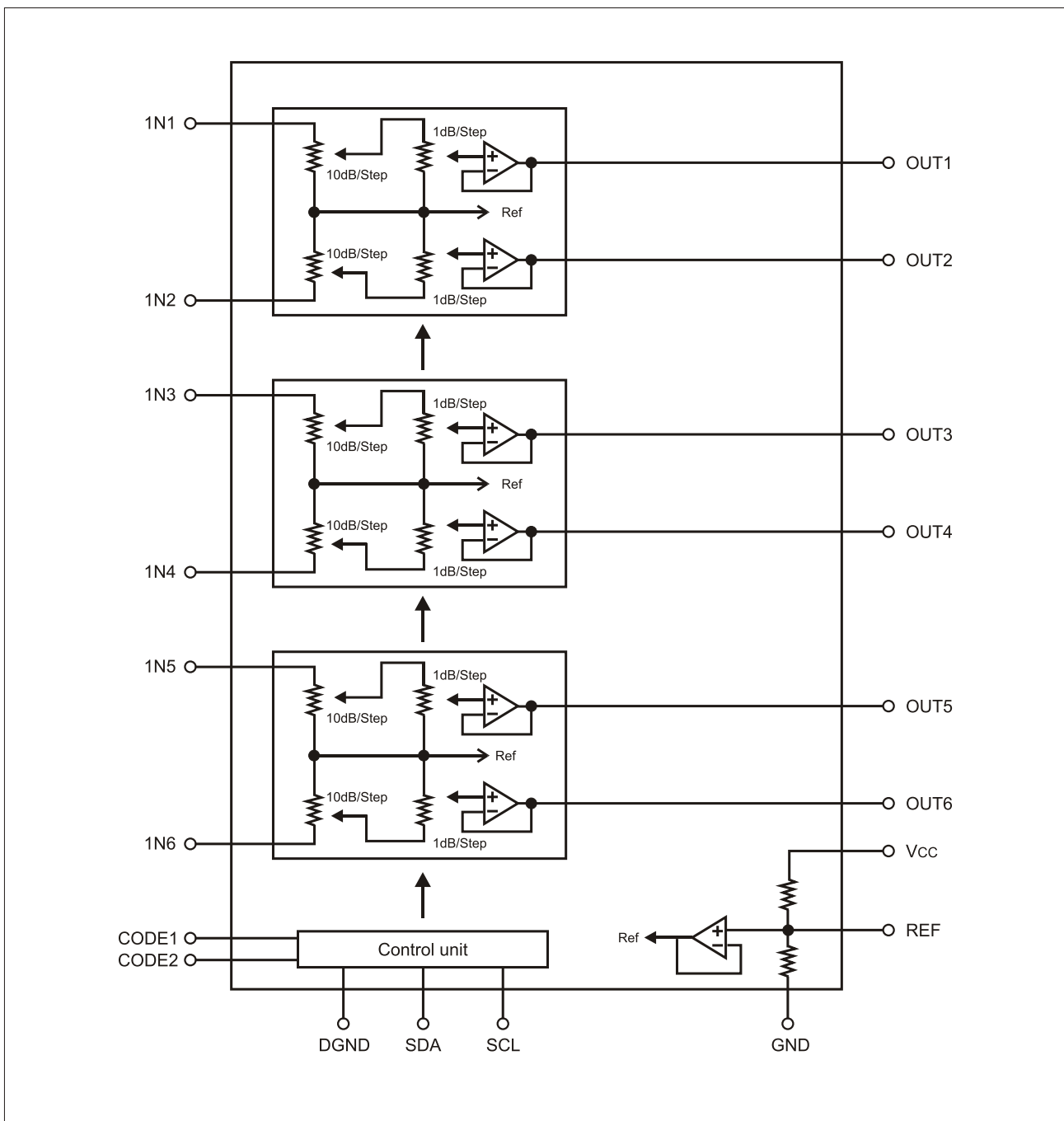
THE EXPLANATION FOR KEY COMPONENTS:

VOLUME CONTROL IC PT2258

Manufactured by CMOS technology, 6-channel volume control IC. I²C control interface

Features:

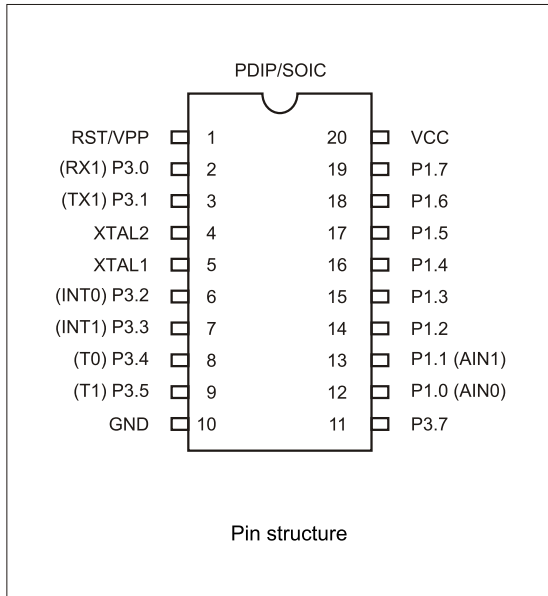
- 6-channel design, each channel 0-79 dB 1dB/STEP
- Working voltage: +5~8v
- Audio channel separability: 100dB
- I²C control interface
- DIP package



THE EXPLANATION FOR KEY COMPONENTS:

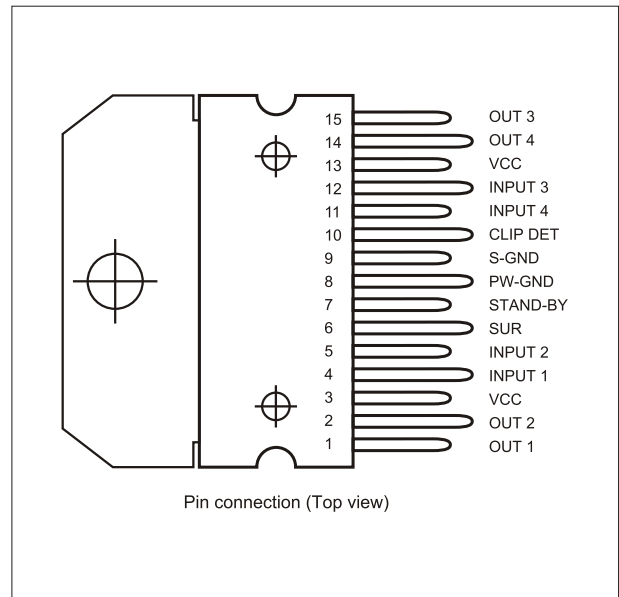
CPU IC AT89C2051

8-bit microprocessor



POWER IC TDA7370B

4-channel audio amplifier



Features:

- Voltage: +2~+6v Max. +6.6v
- Max. I/O current: 20mA
- I/O numbers: 15
- RAM: 128 bits
- FLASH EEPROM: 2K
- Max. work efficiency: 24 MHz

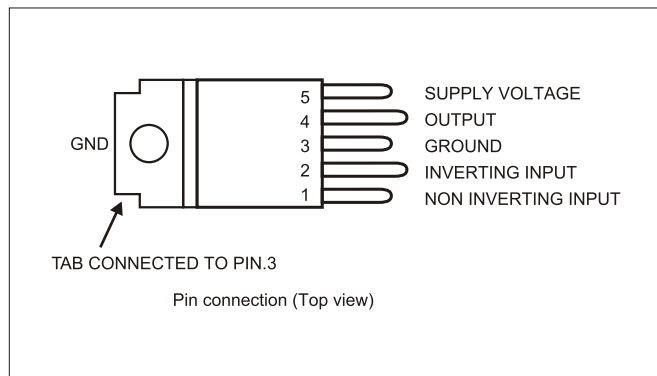
Features:

- Voltage: +18V Max. +28V
- Max. peak current: 3.5A
- Output Power (Vs=14.4V RI=4 ohm, THD=10%, f=1kHz): 6.5w*4
- Full protection function

THE EXPLANATION FOR KEY COMPONENTS:

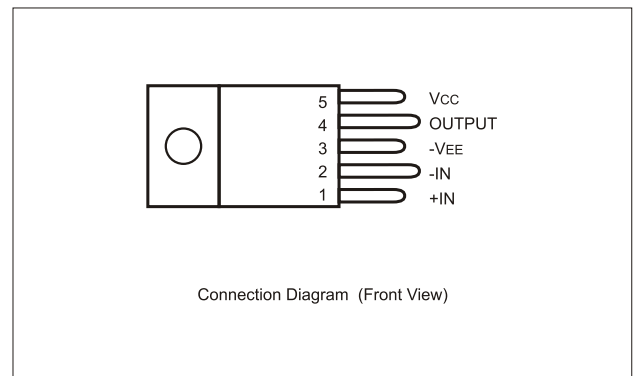
POWER IC TDA2003

Mono audio power amplifier



POWER IC LM1875

Mono power amplifier



Features:

- Voltage: +18v, Max. +28v
- Max. output peak current: 3.5A
- Output power ($V_s=14.4v, R_L=4\ \text{ohm}, THD=10\%, f=1\ \text{kHz}$): 6w
- Full protection function

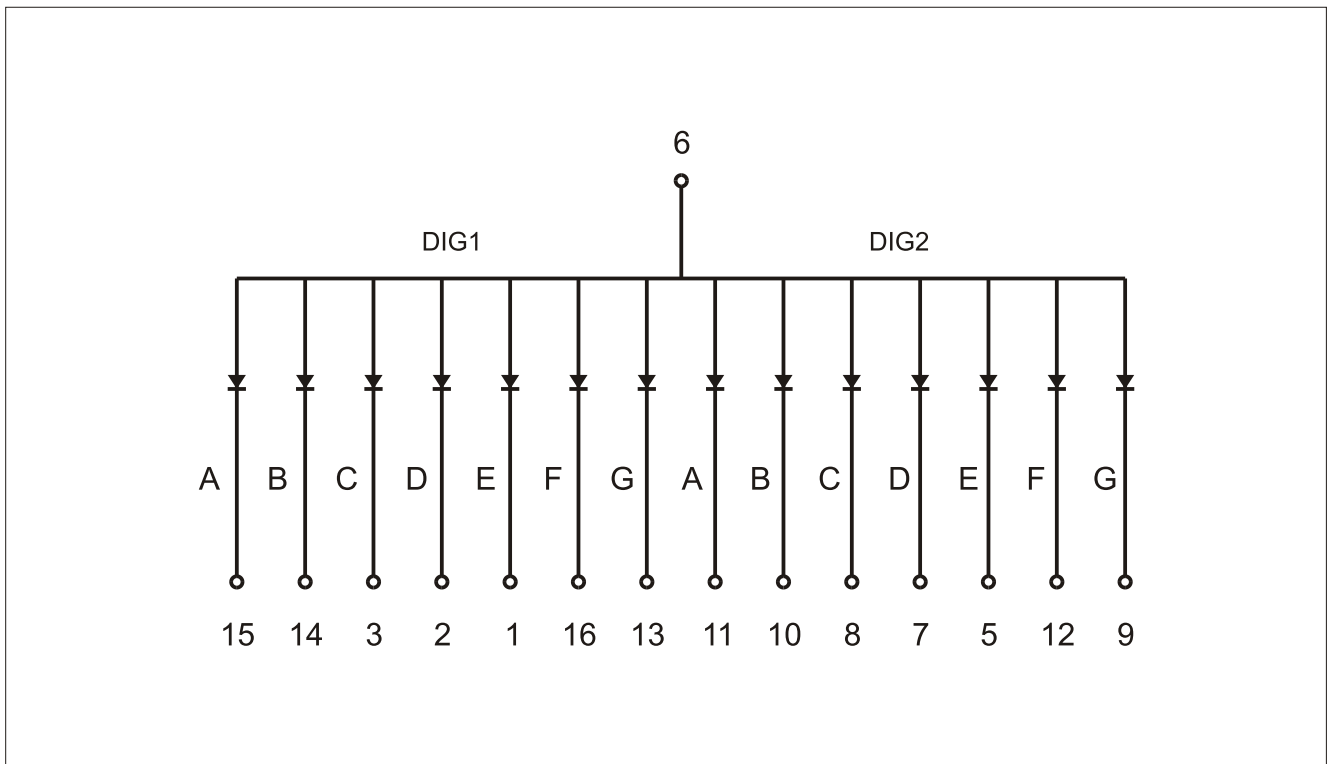
Features:

- Voltage: $\pm 8V \sim \pm 30V$
- Max. output current: 4A
- Output Power: ($V_{CC}=+25v, V_{EE}=-25v, R_L=8\ \text{ohm}, THD=1\%, f=1\ \text{kHz}$): 25w
- Full protection function

THE EXPLANATION FOR KEY COMPONENTS:

LED DIGITAL TUBE

Lighting color: high brightness red



Features:

- Each segment has max. obverse D. C.current:1F=25mA
- Max. reverse resisting voltage:5V
- Wavelength: $\lambda = 642.5\text{nm}$
- Inner circuit diagram(see the above picture)

TEST AND REPAIR

1.A.C. test: Under normal conditions, plug XS1 has measurable A.C. voltage of around 14.5v*2

2.D.C. test:

.Under normal conditions C403,C404 has geoelectric voltage of around $\pm 18v$

.C411 has geoelectric voltage of around +18v

.C412 has geoelectric voltage of around +9v

.C414 has geoelectric voltage of around +5v

.C407 has geoelectric voltage of around $\pm 12v$

3.Input sine wave of 1kHz from 5CH input terminal, turn on the unit with Remote Control. At the output terminal the output sine wave can be measured

If one of 5 CH outputs is abnormal, check the connection first ,then check other places to find causes from front end to back end.

4.Input sine wave of 40Hz to SW input terminal, urn on the unit with Remote Control. At the SW output terminal can be measured.

Attention: Because SW channel is BTL, the protection grounded wire should be cut off, otherwise, IC will start auto-protection.

5.After IC N407,N408 is changed, the complete insulation between the radiator of IC and big radiator should be checked.