



**MODEL 652<sup>©</sup>**  
**(1987-MSRP \$199.00)**

**OWNER'S MANUAL AND  
INSTALLATION GUIDE**

**TECHNICAL DESCRIPTION**

The amplifier design incorporates an unregulated power supply for increased dynamic headroom efficiency. The output stages of the **652<sup>©</sup>** amplifier will deliver a significant increase in power into 2-ohm stereo loads. Amplifier reliability is accomplished by the amplifier operation level being set at approximately 50% of output transistors' rated power handling, even at this lower impedance load.

**WIRING**

Disconnect battery ground cable before making any power connections.

**RED WIRE:** +12 volts. Connect directly to battery positive terminal and should be fused within 18 inches of battery and another fuse where the connection to the amplifier is made. Remember to use the proper size fuses. **WARNING: USING OVERSIZED FUSES IS DANGEROUS AND WILL VOID THE WARRANTY!** See specifications for proper fuse size. **Do not** install power fuse until amplifier installation is complete.

**BLACK WIRE:** negative ground. Connect to clean, unpainted metal surface on car chassis.

**RED/WHITE WIRE:** Remote turn on lead requires 12 volts; connect to power antenna lead from radio. When this not available, you may connect to a +12 volts wire that is on with the ignition on or in the accessory position.

**RCA CONNECTIONS:** Connect with quality-shielded patch cords from source, crossover, or any other sound processor.

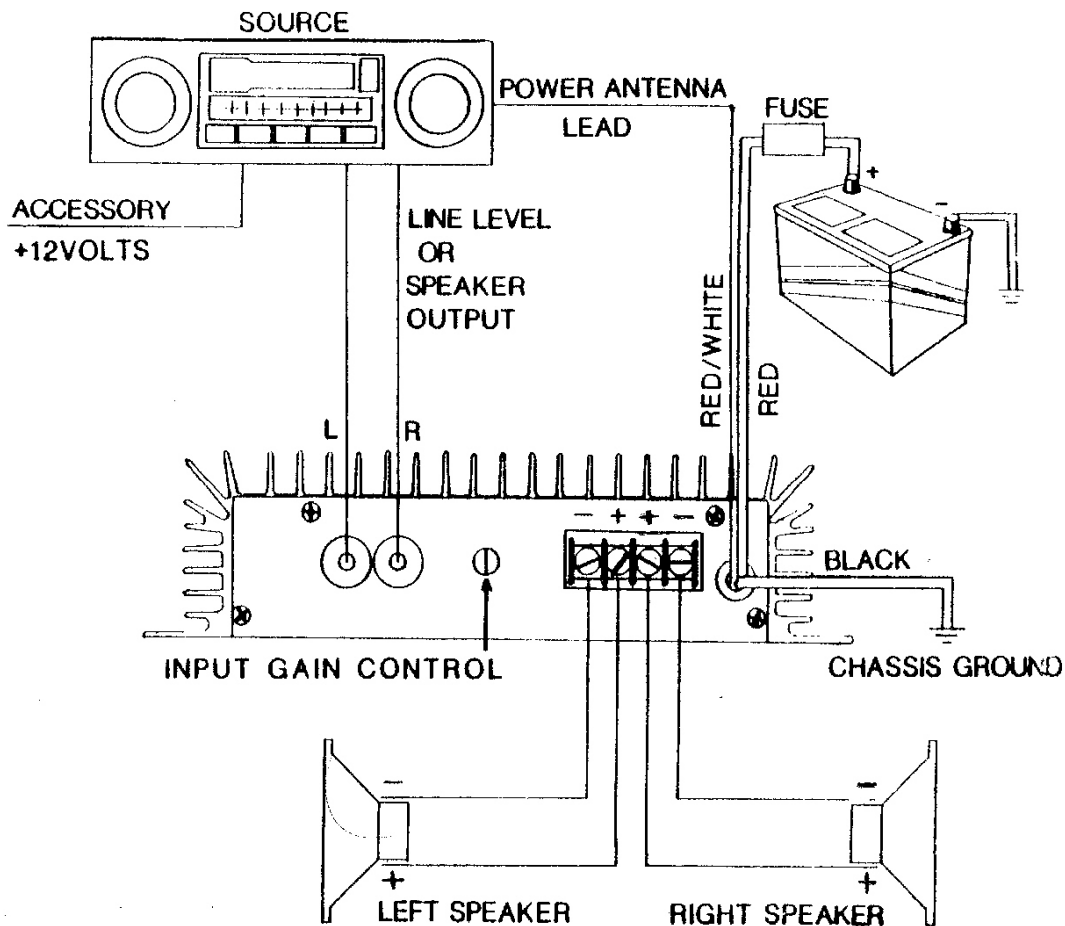
**SPEAKER CONNECTIONS:** Screw wires onto connector block, with wires attached as follows: (From Left to Right): first slot Left (-), second slot Left (+), Third slot Right (+) and fourth slot Right (-) For mono operation use Left (+) and Right (+). These amplifiers are capable of **2-ohm** operation in **stereo** or **4 ohms** in **mono**. These amplifiers are **NOT** internally bridgeable; see section below.

**OPERATING THE AMPLIFIER AT LESS THAN THESE RATINGS WILL CAUSE AMPLIFIER FAILURE AND VOID YOUR WARRANTY.**

**NOTE:** The 652© have internal speaker protection fuses. If there is no output from the amplifier, check these fuses, as your warranty does not cover their replacement. **Replace fuses only with fuses having the same rating.** The proper fuse is a **GMA-5**, 5-amp fuse per channel.

**IMPROPER FUSING WILL DAMAGE YOUR AMPLIFIER!**

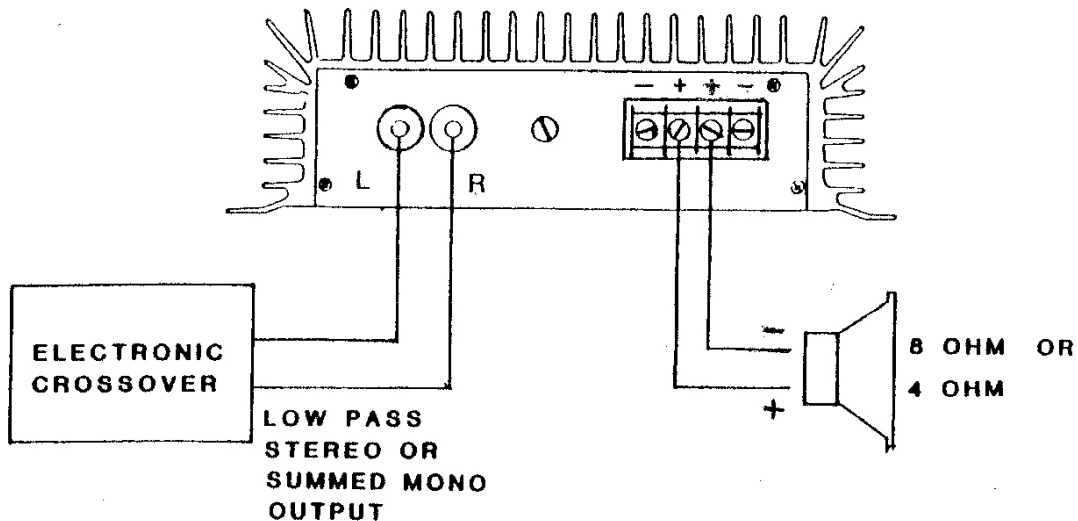
### 2-Channel Stereo Operational Diagram



## OPERATION IN BRIDGE MODE

The **Model 652** amplifier must use an external pre-amp or crossover to be used as a bridgeable amplifier. They must be bridged using a **Linear Power™** crossover such as the **Linear Power™ XO-1**, **XO-2**, or similar brand crossover or pre-amp with inverting capabilities. One channel of the inputs of these amplifiers must receive an inverted signal in order to have the needed inverted signal on one channel at the output. Speaker connection can then be made from LEFT (+) and RIGHT (+). This amplifier is a **minimum** of 4-ohm bridgeable, this amp **IS NOT** 2-ohm bridgeable!

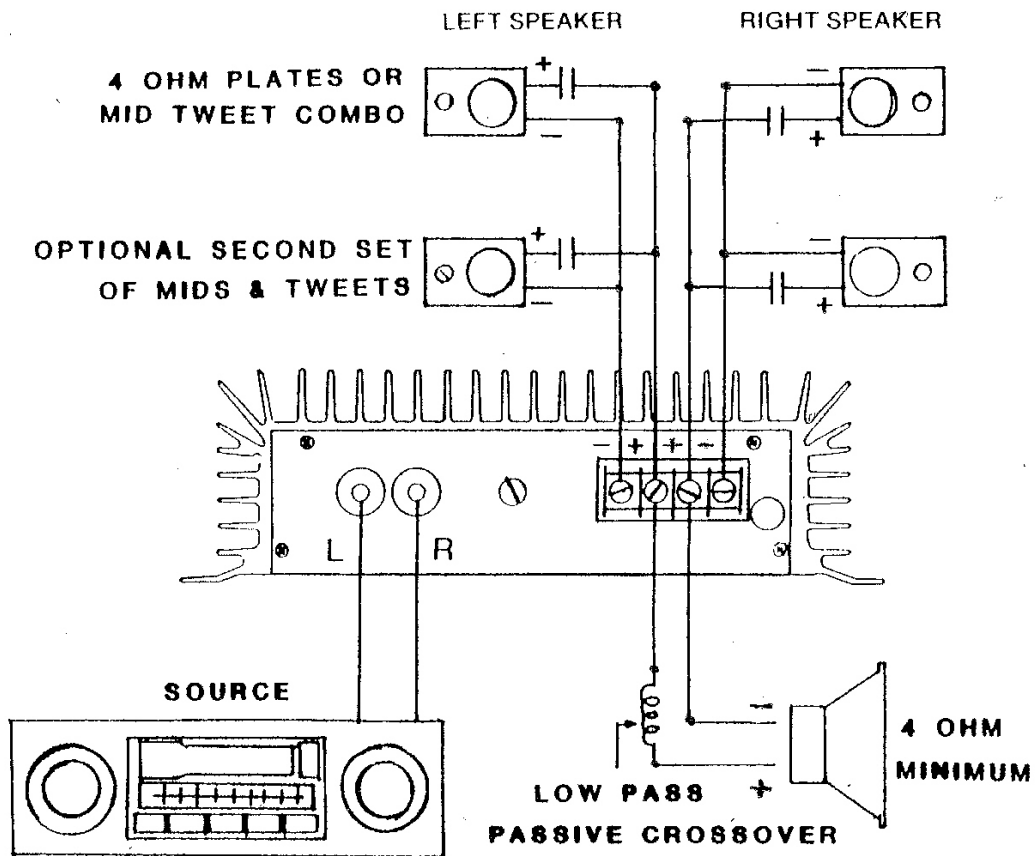
## MONO/BRIDGED OPERATIONAL DIAGRAM



## 3 CHANNEL OPERATION: STEREO PLUS SINGLE SUBWOOFER

To build a single amp system with two satellites and a subwoofer, configure the amplifier outputs as follows: Using 4-ohm satellite speakers, hook them up for normal stereo operation as described above. Then, using a 4-ohm subwoofer speaker, hook it up using the two CENTER connections on the terminal strip. Follow the polarity of the strip as described in the section above. A second set of satellites may be added for 2-ohm operation. **(See diagram on next page)**

### 3-CHANNEL OPERATIONAL DIAGRAM



### GAIN ADJUSTMENT

Set the amp gain to minimum, turn the source up until it just starts to distort, then back down slightly. This is the point where the output of the source is cleanest. Now adjust the amplifier gain up until it just starts to distort and back down slightly. This will allow the source and amp to reach maximum usable output at the same time.

## MOUNTING

1. The amplifier will work best if it is kept as cool as possible. Mount in a position that allows air to flow freely through the fins. Be sure there is ample space above the amplifier to avoid trapping heated air rising from the amplifier. The amplifier should not be mounted upside down. Avoid mounting any amplifier in the dash or on the firewall to avoid noises being radiated directly into the case.
2. The case of your amplifier is designed to act as a noise shield. To maintain this protection, be sure the metal case of the amp does not touch the metal of the car. Do not remove or damage the rubber grommets, which provide electrical insulation and vibration isolation.

## GENERAL TROUBLESHOOTING

**NO SOUND:** Check all connections. Check main power fuse. Check accessory fuse of your vehicle. Check to see that +12Vdc is present at the amplifier on the power wire, and on the red/white remote turn-on wire. Check for a solid ground connection. Check that the main music source is putting out signal.

**BLOWS FUSES:** Check all connections to be sure no wires are touching each other or the chassis of the vehicle or any other equipment in your install. Check that your speakers are in proper working order.

**SHUTS OFF:** These amplifiers are equipped with a Thermal Shutdown System. If the amplifier becomes too hot during operation, it will shutdown until it cools to proper operating temperature. This can be caused by lack of proper air circulation to the amp, or too low of speaker impedance.

## INTERNAL SPEAKER FUSES

The 652© is equipped with internal speaker fuses to protect these amps and your speakers. If you lose operation of one or both channels in these amps, first check all the connections. If the internal fuses need replacement, remove the faceplate of the amp and replace the fuse(s) with one of the correct size and type. The 652© uses a **GMA-5, 5 AMP** style fuse. Check all speaker wiring, or the speaker to insure against shorts, also check for proper speaker impedance.

**Remember, the fuse did not fail without reason!**

**USE OF OVERSIZED FUSE WILL DAMAGE YOUR UNIT!**

**SERVICE OR REPAIR**

To obtain modification, service or repair, please contact our **ONLY Authorized LINEAR POWER™ Product Service Center:**

**T.I.P.S. INC.**

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## Specifications

652<sup>©</sup>

<b>Power output @ 4 ohms RMS @ 12.5 volts</b>	<b>32.5X2</b>
<b>THD @ full output 20-20KHz</b>	<b>.06%</b>
<b>Slew Rate volts/microsecond</b>	<b>9Vms</b>
<b>Damping factor @ 4 ohms</b>	<b>&gt;100</b>
<b>Channel separation</b>	<b>60dB</b>
<b>Maximum current</b>	
4 ohms	<b>8A</b>
2 ohms	<b>12A</b>
Idle	<b>.7A</b>
<b>Fuse rating (12 Volt Power Feed)</b>	<b>10A</b>
<b>Dimensions</b>	<b>2x7.7x5.5</b>
<b>Internal Speaker Fuse ratings</b>	<b>5 A</b>

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