

## Marantz 2385/2500 Capacitor Replacement PCB (MZ-CAP-1)

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Thank you for your order! This kit is designed to aid replacement of the power amplifier supply capacitors in the Marantz 2385 and 2500. A custom mounting board designed specifically for the Kemet ALS80-A-DF family of screw-in capacitors is included. Kemet part number ALS80A822DF100 (8200 uF/100V) is a good fit and offers a bit more filtration than the original parts, but other screw-in capacitors can be used so long as the dimensions are a good match.

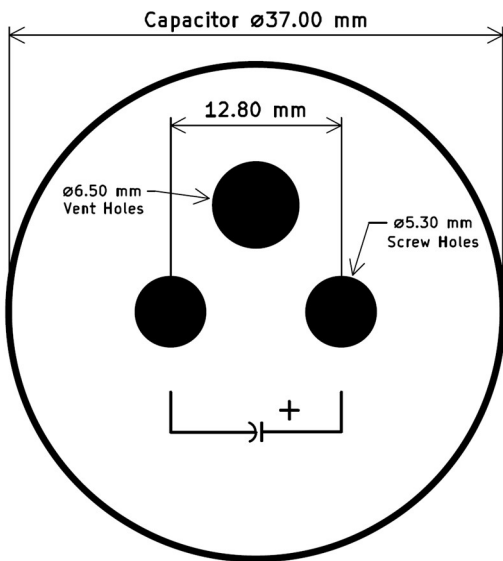
The board is made with a 2.4 mm thick FR-4 laminate to reduce flex, and the combination of double-sided 2-ounce copper and large pours ensures very low impedance connections to the wiring turrets. Mounting is facilitated by re-using four of the original capacitor's mounting bracket holes.

To assemble this kit, you will need four screw-in electrolytic capacitors of suitable dimensions and eight capacitor mounting screws (preferably with internal tooth lock washers). More information about capacitor selection is given on the next page.

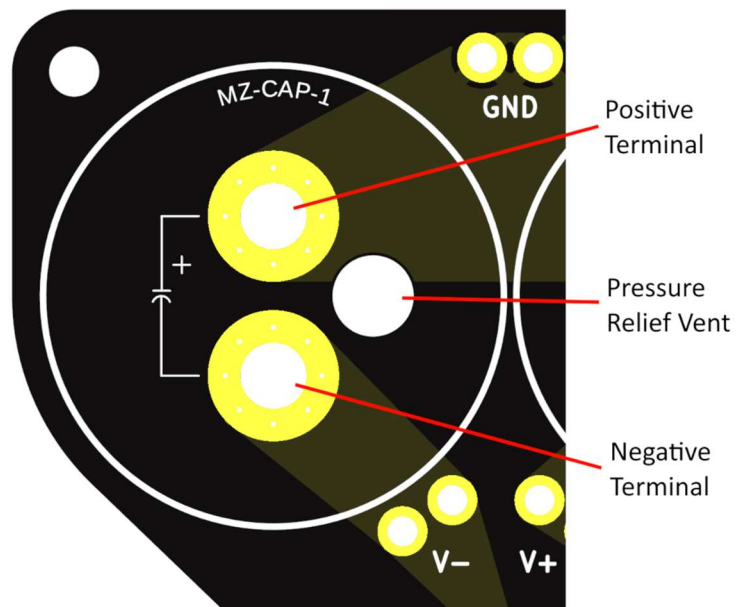
## Capacitor Selection

This kit was designed to fit four Kemet ALS80A822DF100 (8200 uF/100V) screw-in capacitors. These capacitors are 36 mm in diameter, 107 mm in height, have 12.80 mm center-to-center mounting stud spacing, and use M5-0.8 threads. If you are using these parts, 12 mm long M5-0.8 machine screws would be ideal (e.g. Prime-Line 9131367). We recommend using M5 internal tooth lock washers under each screw to ensure solid electrical connections. **If you plan on using different capacitors, please read the notes below:**

- The new capacitors should not exceed 36 mm in diameter or 107 mm in height, otherwise they may not fit on the board or inside the Marantz
- The center-to-center spacing of the threaded mounting studs should be 12.80 mm, and the threads should be no larger than M5, otherwise the screws may not fit through the mounting holes on the board
- The rubber plug in the capacitor's pressure relief vent should align with the non-plated holes on the mounting board so that there is room for the plug to move in the event that the capacitors start to fail and build up internal pressure. If they do not align, you will need to drill additional holes in the mounting board. Ensure that the diameter of the hole is slightly larger than the diameter of the rubber plug
- This kit includes a set of spacer boards designed for the Kemet ALS80-A-DF family in order to reduce mechanical stress on the board due to the length of the threaded mounting studs. These spacers may not fit other types of capacitors



Bottom view of capacitor,  
looking at mounting studs



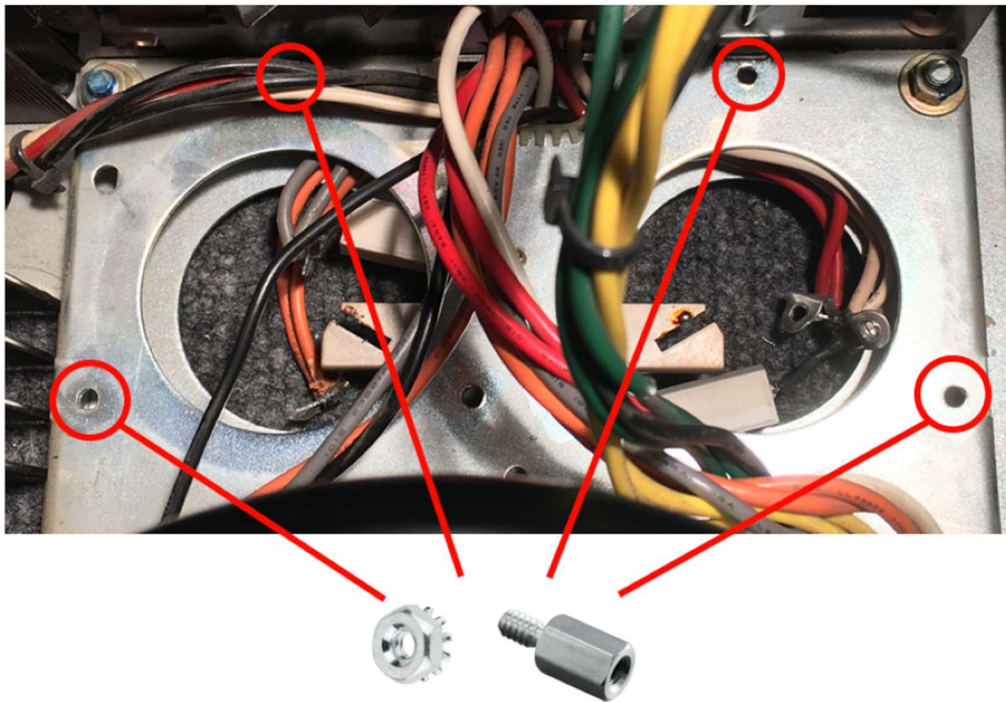
Capacitor side of board

## Increase in Capacitance

The Marantz 2385 uses a set of two dual 6800 uF/85 V capacitors, while the 2500 uses a set of two dual 7200 uF/100 V capacitors. Due to the slight increase in capacitance when using the specified Kemet parts, you may wish to replace both original bridge rectifiers with parts capable of handling higher continuous and peak surge currents. For reference, the 2385 schematic indicates that it uses two S5VB20 bridge rectifiers, which are rated for 6 A continuous current (when bolted to a heatsink, i.e. the chassis), 200 A peak surge forward current, and 200 V peak reverse voltage. The Marantz 2500 schematic calls for two S5VB40 bridge rectifiers, which have the same current ratings but are rated for 600 V peak reverse voltage. A bridge rectifier similar to Vishay GBPC2508-E4/51 (25 A continuous current, 300 A max surge current, 800 V peak reverse voltage) would be a good choice. Be sure to apply a bit of thermal compound to the bottom of each bridge before bolting it to the chassis.

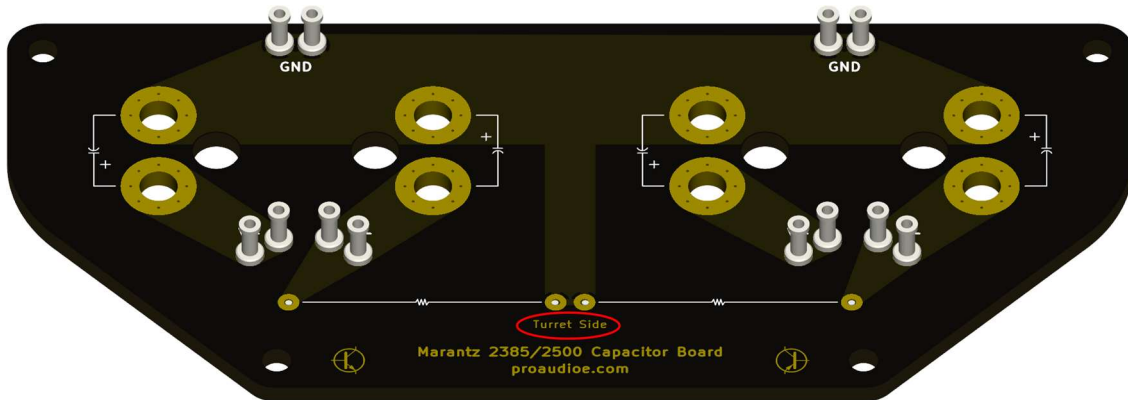
## Installation

1. Take pictures or make a clear diagram of the original capacitor wiring scheme, including all color codes
2. Desolder and remove the original capacitors. Try to save as much wire length as possible
3. Mount the four included #6-32 x 3/8" threaded hex standoffs to the Marantz chassis using #6-32 hex nuts on the bottom of the sub-chassis. The board will sit on these standoffs and mount with screws

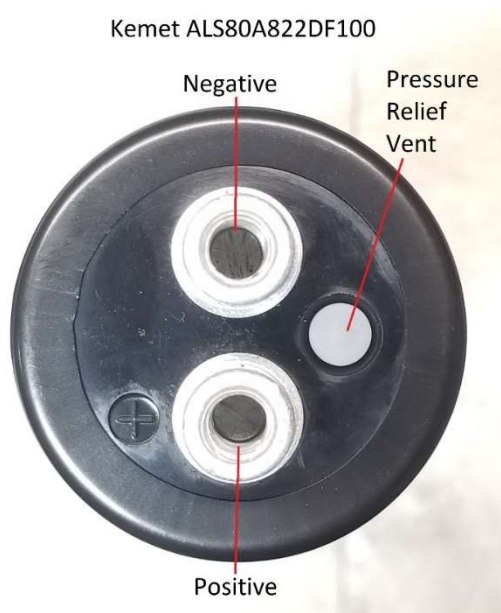


4. Assemble the capacitor mounting board:

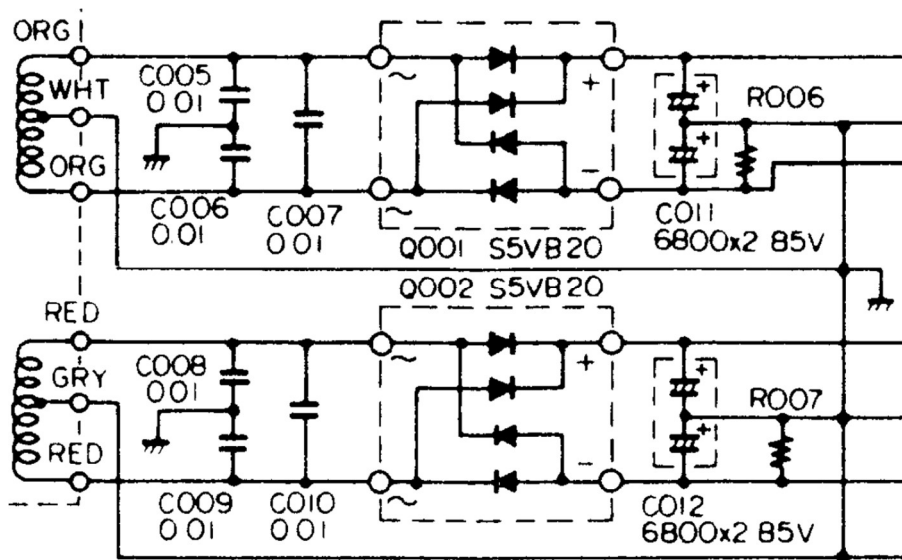
- Place the long end of each wiring turret on the side of the board labeled **Turret Side**. A total of 12 turrets will be used
- Flip the board over and crimp the short end of the turrets with snub nose pliers until they are mechanically secure, then solder them in place



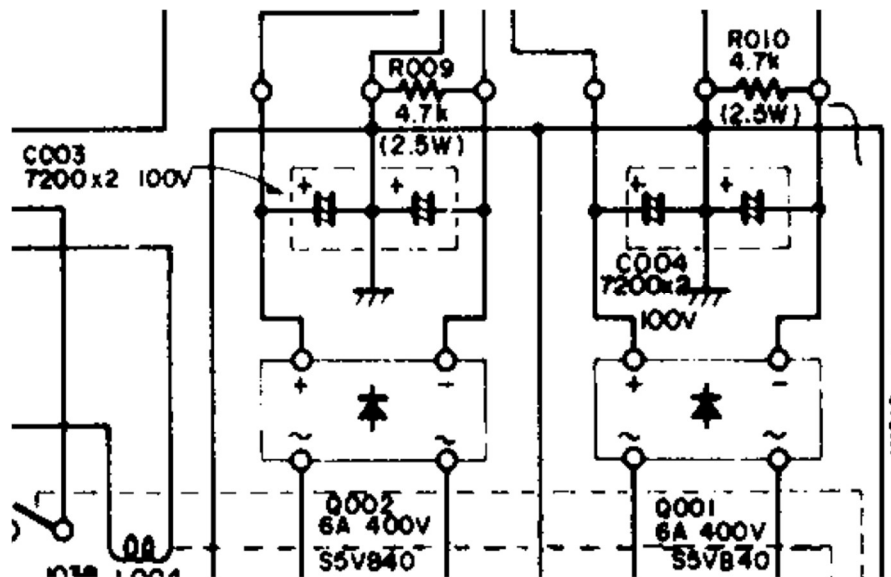
- The capacitor board has footprints for installing both ceramic bleeder resistors. Moving them onto the board is optional, but if you want to move them, place them on the *Capacitor Side* of the board
- If you are using the specified Kemet capacitors, place 5 of the included spacers over the mounting studs of each one. *Make sure to align the vent holes of each spacer with the rubber plugs on the capacitors*
- Mount each capacitor on the side of the board labeled **Capacitor Side**. *Triple check that they are installed with the correct polarity.* If you are using the specified Kemet capacitors, aligning the rubber plugs with the vent holes on the board will ensure proper polarity



5. Place the board on the threaded hex standoffs and mount it in place with the four included #6-32 machine screws
6. Flip the unit upside down and connect each wire to its designated wiring turret. The positive rail corresponds to the **V+** turrets, the negative rail corresponds to the **V-** turrets, and ground corresponds to the **GND** turrets. If you chose to leave the bleeder resistors in place, they connect between the **V-** turrets and ground
7. Triple check your wiring against the pictures or diagram you made at the beginning. If you are replacing the bridge rectifiers with parts capable of handling higher continuous and peak currents, do so now
8. We recommend powering the unit up slowly with a dim bulb tester (*i.e. a common incandescent lightbulb wired in series with the AC line input*) and variac while monitoring the supply voltages to confirm that everything is working as expected.



Marantz 2385  
Schematic



Marantz 2500  
Schematic

If you have any questions, concerns, or feedback, please feel free to send us a message:

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