

Testing 6JS6 tubes for open filament and element shorts with an ohmmeter.

First, let me comment about tube testers.

A tube tester will check for a good filament and find most shorts.

If a tube checks bad on a tube checker, it IS bad.

If a tube checks good on a tube checker, it MAY or MAY NOT be good.

Ohmmeter checks.

We have been having problems with shorts in 6JS6 series tubes. Elements in the tube short and blow fuses.

Hint: If this happens in a FT-101 series radio, check C-13 for a short. Unsolder one end of C-13 and check it with an ohmmeter. If it shows any leakage it should be replaced before proceeding because that is likely what caused your problem.

When replacing 6JS6 tubes in an FT-101 series radio or when the fuse blows it is desirable to check the tube that will be installed in the radio for shorts. Also there are times it is helpful to check these tubes for an open filament. If a tube tester is available, use it and note the comments above about tube testers.

If a tube tester is not available tubes can be tested for shorts and open filament with an ohmmeter.

This has limitations. Sometimes tubes will have a short only with the filaments hot. While this will not find those, it will find open filaments and dead shorts if there are any. It will not test emission.

The Pins:

Looking at the bottom of the tube, Pins count clockwise.

For 6JS6

Pin 1 and 12 filaments

Pin 2 cathode

Pin 5 control grid

Pin 3 and 11 Screen grid

Pin 4 and 10 Suppressor grid

Top is plate.

Checking for open filament:

Ohmmeter SHOULD show close to 0 ohms (short) from pin 1 to pin 12.

Checking for shorted elements:

Perform the following ohm checks. The below combinations should not show any continuity. (Should show infinite ohms) or you have a short.

Place one lead from the ohmmeter to one of the "From" pins. Place the other on one of the "To" pins. Check each combination. You should show an open reading like you get when the ohmmeter leads are not connected to anything. Be careful not to be touching more than 1 pin with each lead or you will get a false reading. If you get a reading as though the meter leads were connected together, these elements are shorted.

From Plate to Pin 4 and 10 Suppressor grid

From Plate to Pin 3 and 11 Screen grid

From Plate to Pin 5 control grid

From Plate to Pin 2 cathode

From Plate to Pin 1 and 12 filaments

From Pin 4 and 10 Suppressor grid to Pin 3 and 11 Screen grid

From Pin 4 and 10 Suppressor grid to Pin 5 control grid
From Pin 4 and 10 Suppressor grid to Pin 2 cathode
From Pin 4 and 10 Suppressor grid to Pin 1 and 12 filaments

From Pin 3 and 11 Screen grid to Pin 5 control grid
From Pin 3 and 11 Screen grid to Pin 2 cathode
From Pin 3 and 11 Screen grid to Pin 1 and 12 filaments

From Pin 5 control grid to Pin 2 cathode
From Pin 5 control grid to Pin 1 and 12 filaments

Walt N9WB