

AMP 300 FM MOSFET REPLACEMENT

- 1) Disconnect the supply voltage from the output board of the AMP300 300 W amplifier (fast-on connection).
- 2) Unscrew the damaged MOSFET and the output matching board.
- 3) Unsolder the MOSFET.
- 4) Clean the input and output boards to prevent short-circuit before replacing the MOSFET.
- 5) Locate properly the white Teflon sheets between the output circuit and the heat sink: fix the circuit using the two screws.
- 6) Put on the thermally conductive compound between the MOSFET case and the heat sink.
- 7) Fix the MOSFET to the heat sink (screws must be strongly fixed) and solder all the four pins of the MOSFET: **pay attention to the output board soldering because an excessive quantity of tin can cause a short circuit between different board layers.** Reconnect also the 2 GND interconnections, indicated on the next picture, and check the right soldering of the input transformer and gate resistor.
- 8) Check the supply voltage is 43V (if it is not, there is a problem in the switching power supply boards). Reconnect the supply voltage to the 300W modules (fast-on connection), placing an ammeter in series (minimum full-scale deflection 10A).
- 9) Control the output power level (it should be 1000W) and the absence of spurious emissions (to check, use a spectrum analyzer and an output RF monitor sufficiently attenuated). **Pay attention to the ammeter: each MOSFET must not drain more than 9A.**
- 10) Verify that the current drag from the 4 modules is the same ($\pm 0.5A$) at the maximum output power. If the difference is greater expand or compress the input coils of the modules until this condition is satisfied.
- 11) In case the replaced MOSFET doesn't reach the nominal output power or in case of spurious emissions you need to improve the input matching of the MOSFET: to do this compress or expand manually the input circuit coil (see next picture) to maximize the output power.

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