

Cobra 148 GTL 25 Watt Modifications Using ERF-2030

Below are 2 modifications for the 148 GTL. Both modifications are approx. 25 watts. Modification #1 only replaces the final. Modification #2 replaces both driver and final. This modification is for the latest production 148 GTL with 4pin microphone plug. It is unknown if this modification will work on previous 148 GTL units.

148 GTL Modification #1 - Final Transistor Replacement Only

Required Parts:

1pc ERF-2030
1pc EN-369FN
1pc 470pF ceramic disc capacitor
1pc 33K ohm, 1/4 watt resistor
jumper wire

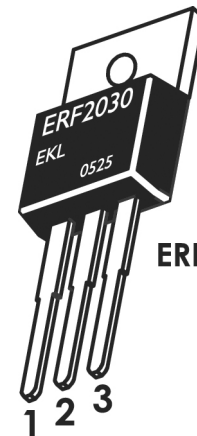
- 1) Remove L40
- 2) Remove C149
- 3) Remove R181
- 4) Remove TR36 and replace with ERF-2030. Note: ERF-2030 mounts identically to the removed 2SC1969. Make sure to use all the same hardware, insulator, thermal grease, etc.
- 5) Install jumper wire at R181
- 6) Add 470pF ceramic disc capacitor across C152
- 7) Install EN-369FN at TR36 (on solder side of PCB). Solder the positive lead (+) to the ERF-2030 gate. Solder the negative lead (unmarked) to the ERF-2030 source.
- 8) Add 33K ohm resistor (1/4 watt) from ERF-2030 gate leg to R180

148 GTL Modification #2 - Driver and Final Transistor Replacement

Required Parts:

2pcs ERF-2030
1pc EN-369DR
1pc EN-369FN
1pc 1000pF ceramic disc capacitor
1pc 33K ohm, 1/4 watt resistor
1pc 470K ohm, 1/4 watt resistor
jumper wire

- 1) Remove L40
- 2) Remove C149
- 3) Remove C156
- 4) Remove R209
- 5) Remove L43
- 6) Remove C200
- 7) Remove C151
- 8) Remove R181
- 9) Remove TR36 and TR38. Replace both with ERF-2030s. Note: ERF-2030 mounts identically to the removed 2SC2166 and 2SC1969. Make sure to use all the same hardware, insulator, thermal grease, etc.
- 10) Install jumper wire at R181
- 11) Add 1000pF ceramic disc capacitor across C152
- 12) Install EN-369DR at TR38 (solder side of PCB). Solder the positive lead (+) to the ERF-2030 gate. Solder the negative lead (unmarked) to the ERF-2030 source.
- 13) Install EN-369FN at TR36 (solder side of PCB). Solder the positive lead (+) to the ERF-2030 gate. Solder the negative lead (unmarked) to the ERF-2030 source.
- 14) Add 33K ohm resistor (1/4 watt) from ERF-2030 gate leg at TR36 to R180
- 15) Add 470K ohm resistor (1/4 watt) from ERF-2030 gate leg at TR38 to JW48
- 16) Remove the 270pF capacitor soldered from junction of C151, C152, R181 to ground. This 270pF capacitor is on the solder side of PCB.



ERF-2030 Pins:

1. Gate
2. Drain
3. Source