

FSB Number: FSB-015

Title: Switch Mode Power Supply
horizontal amplitude stability

System Description: All 1200 series projectors
manufactured from September 1997
up until April 2000.

Module/Component Description: UN G1200 SMP CPL
(R7621065)

Priority: 3

Reference: BARCO info t 332

1 - Essential

SEOS Will Supply the Parts free of charge to implement modification

3 - General

Improves the general working conditions

2 - Reliability

Recommended to improve reliability of the system

4 - For Information Only

General product and company information

Description

We have received reports from the field that some 1200 Series projectors have shown a random instability of the horizontal amplitude (picture width). The effected projectors have a MOSFET type IXTH12N100 fitted in the deflection SMPS as power switcher.

For many years, Barco have fitted (Q100) BUP 101 as the horizontal deflection power transistor on the SMPS board. Approximately two years ago, they were obliged to replace the BUP 101 with a MOSFET type device (IXTH12N100) as the manufacturers had discontinued its production.

The change from a NPN transistor to a MOSFET required important changes in the drive circuitry.

Unfortunately, the drawing of the transistor (Q100) in the Barco schematics has never been updated to indicate the change of device to MOSFET. As a consequence, the IXTH12N100 MOSFET is shown incorrectly as a NPN transistor in all Barco schematics!

The modification described hereafter is only necessary if your systems projectors are displaying horizontal amplitude stability problems and has an IXTH12N100 MOSFET in the Q100 position on the SMPS. If Q100 is a BUP101 transistor, there is absolutely no need to do these modifications.

Only in the event of a failure of the BUP101 is there a need to do these modifications, as the device is no longer available. (See b).

There are two possible conditions that apply to these modifications:

- a) If the projector is equipped with an IXTH12N100 MOSFET and you want to upgrade it to avoid the above mentioned horizontal instability problem. This will require that a new transistor type 2SC3998 to be used as a replacement:

Instructions for replacing IXTH12N100 → 2SC3998

- Remove the Mosfet IXTH12N100. Take care to carefully clean the holes, this will facilitate the insertion of the leads of the new transistor. Do not mount the new transistor until you have replaced the other components listed below (To enable better access).
 - D107 (BA158) is replaced by a 1N4007 (C131646)
 - Add diode D113 BA158 (V131637) between base and emitter of Q100. Clear the holes on the printed circuit and position the diode as printed on the board (The printed circuit is ready for mounting this diode).
 - R104 (2E74F) has to be replaced by a E33J, 0W6 (V102499).
 - R105 (1k) has to be replaced by a 27E4 F 0W6 (V1026424).
 - Check C110, it must be 150pF (V1122842).
 - C105 (1μF) has to be replaced by a 100μF (V1114874).
 - R118 (270E) has to be replaced by a 200E 0W6 (V1026295).
 - Mount the new transistor **2SC3998** (B133124) in the same holes as the MOSFET.
- ◆ NB The body of the 2SC3998 is much larger; and as a consequence, the same hole in the heatsink can no longer be used for securing the bracket supporting the MOSFET. It will need to be mounted higher. The cutout on the heatsink above the original hole can be used for mounting the stainless steel bracket to support the new device (see picture 1)
 - ◆ Shift the mica insulator upwards to guarantee good insulation from the heatsink
 - ◆ Apply some heatsink compound to improve the thermal contact with the heatsink.

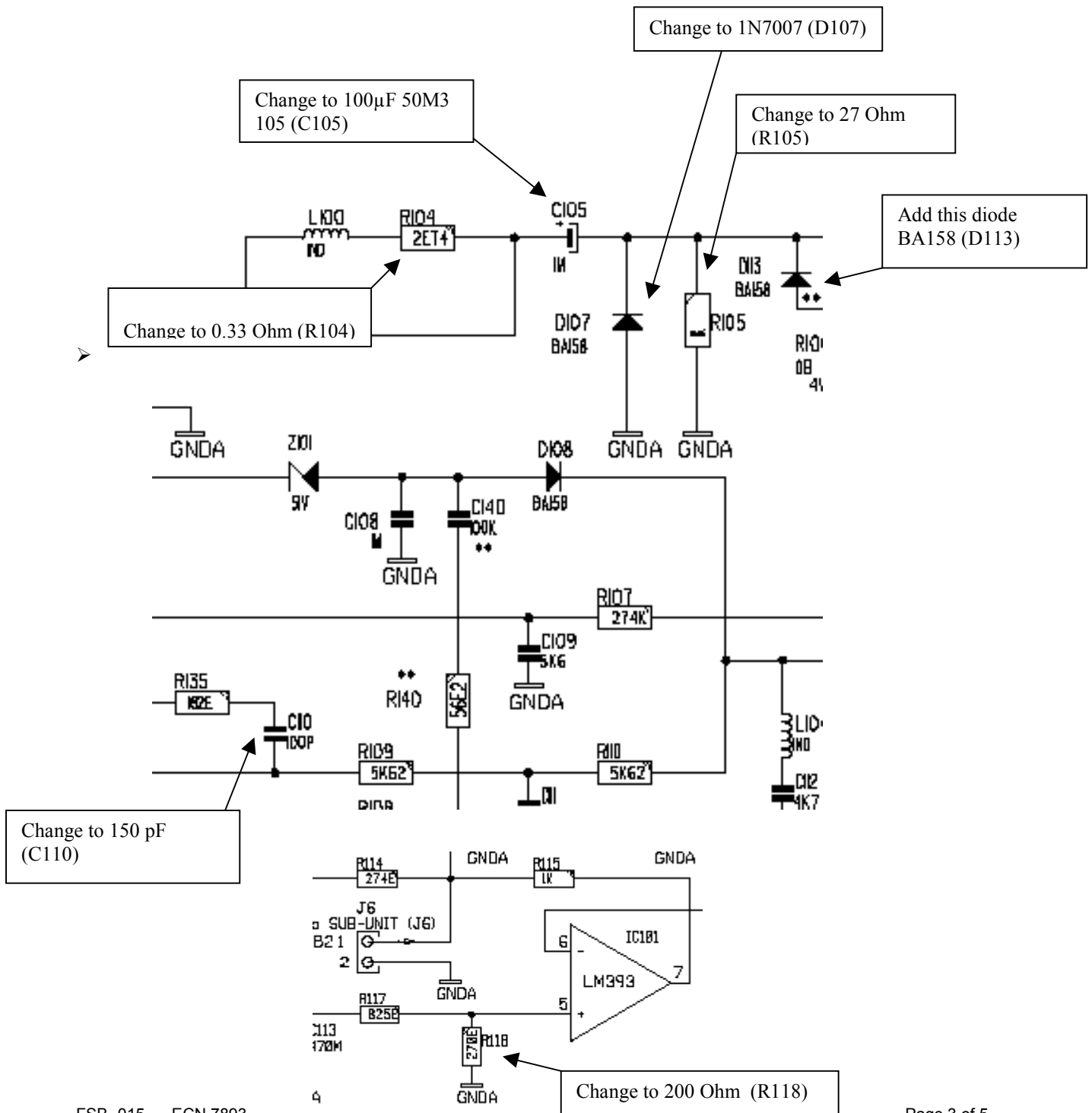
Necessary spares:

✓ Transistor Q100	2SC3998,	B133124
✓ D107	1N4007	C131646
✓ D113	BA158	V131637
✓ R104	0.33 Ohm	V102499
✓ R105	27 Ohm	V1026424
✓ C110	150pF	V1122842
✓ C105	100μF 50M3 105	V1114874
✓ R118	200 Ohm	V1026295

- b) If the projector is equipped with a BUP101 transistor which has failed you will need to replace it with a 2SC3998.

Instructions for replacing BUP101 → 2SC3998

- All that is required for this modification is to replace C110 (1n2) with a **150pF (V1122842)**



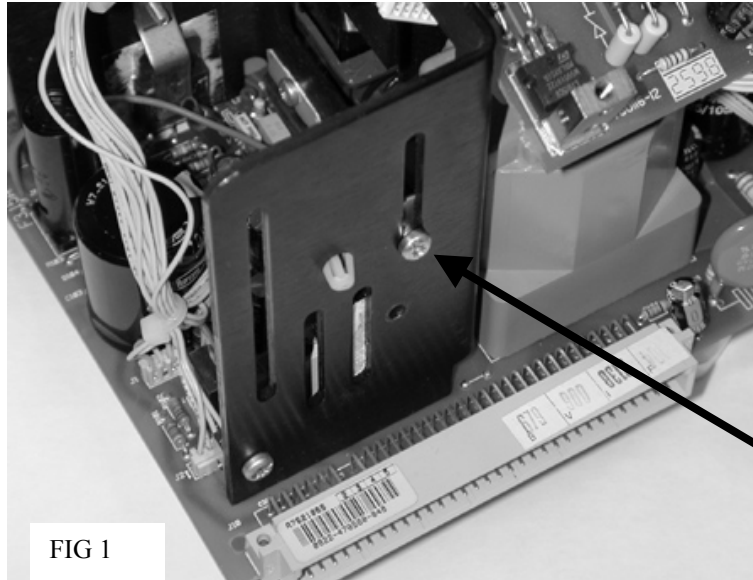


FIG 1

New fixation for transistor
securing bracket