Notes of Repair of the Stk730-090

*** Applicable also to others integrated of the STK730-xxx series and similars**
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When the electronic technician, must replace integrated circuits of the STK730-xxx series,
used in exchanged sources of diverse models of television sets RCA, General Electric and
others, can undergo the disagreeable experience to acquire some of those components
"Falsified" or of low quality, that lamentably, is commercialized at the present time in
international market of electronic spare parts and therefore, in many specialized stores of
in all the countries.
One is components that in their external aspect, can exactly seem equal to original, but made by other "companies" (without authorization of the original manufacturer), to a cost
lower and with an inferior quality, without fulfilling the electronic specifications of
original component.
These integrated of "doubtful origin", in most of the cases, to the being installed in the equipment, no
they work as it would be to hope: they are warmed up excessively, or they generate oscillations and noises, or
they do not regulate correctly, or decidedly: they do not work for anything.
If it has the luck of which they work apparently well, probably they have a life utility very
it cuts, and the equipment returns to the factory in just a short time.
All this can take to enormous confusion and a lost one of time (and money), for the technician
that it is not come up, with respect to these components of doubtful origin. Then it will look for
cause of badly the operation in other parts of circuit, when in fact the cause of badly
operation, is the new integrated one that finishes installing.
For that reason, he is recommendable to try to always acquire, original components, in suppliers of
confidence, although their price is higher. But, when it is not possible to obtain the spare part (or
spare part) original of good quality, the technicians we must worsen our talent, stops
to solve the problem.

To use a transformer

In television sets multivoltage, designed to also work, with tensions of mains of

100 to 240VAC, in countries or regions with network tension, discharge (220 or 240VAC), the incidence of
faults of the STK730-xxx are greater. And the probabilities of bad operation and cut life of
integrated Falsified, it increases enormously.
An option in those cases, is to install internally or externally, a transformer (or autotransformer)
reducer, so that the equipment really receives, a tension of 110 to 120VAC, alleviating therefore the work of the STK730-xxx.

To repair the original STK730-xxx

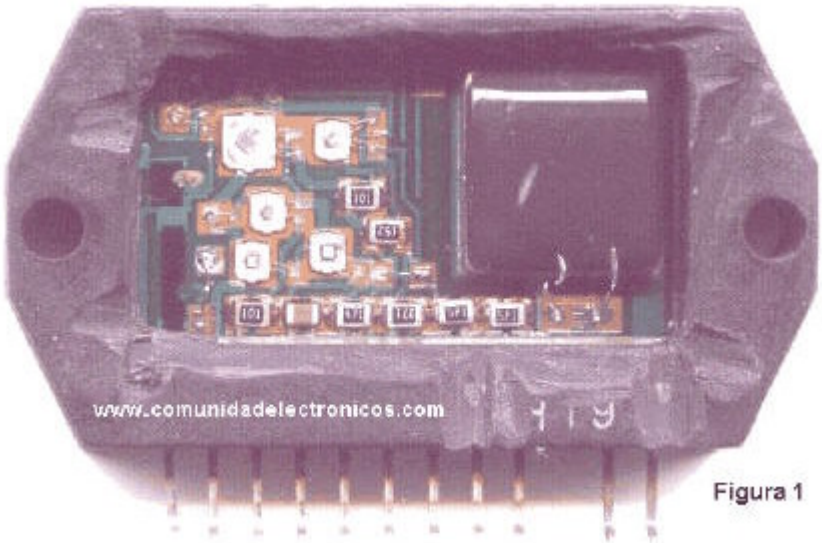


Figura 1

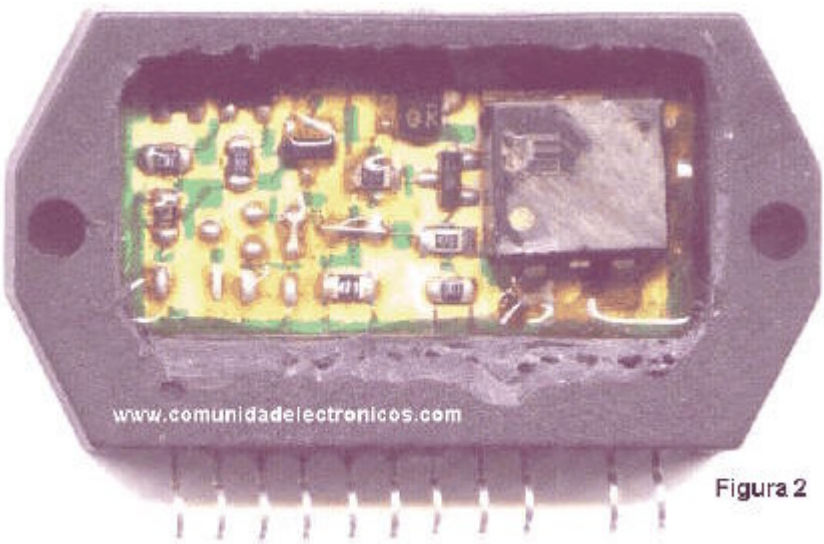
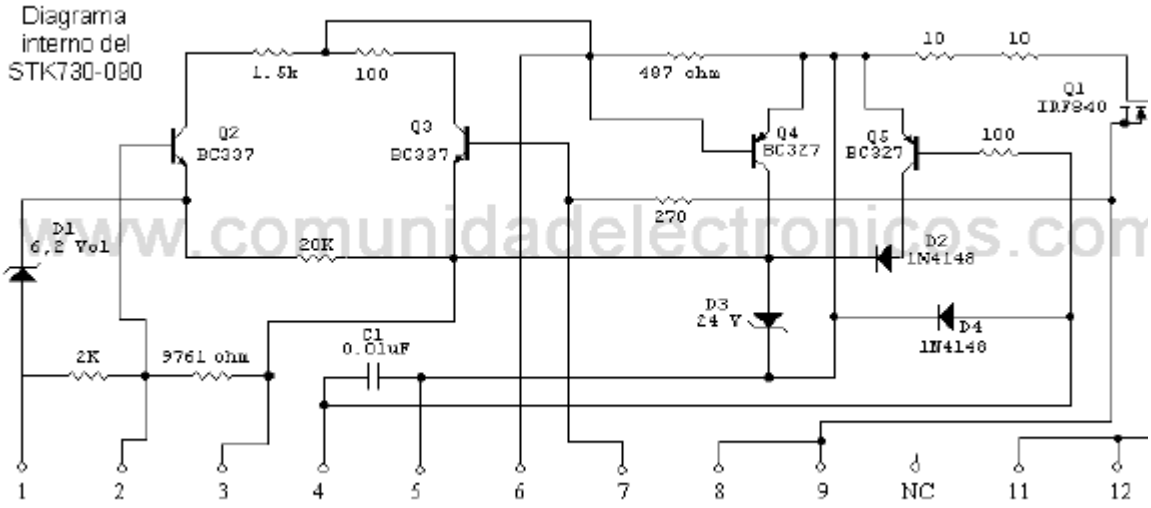


Figura 2



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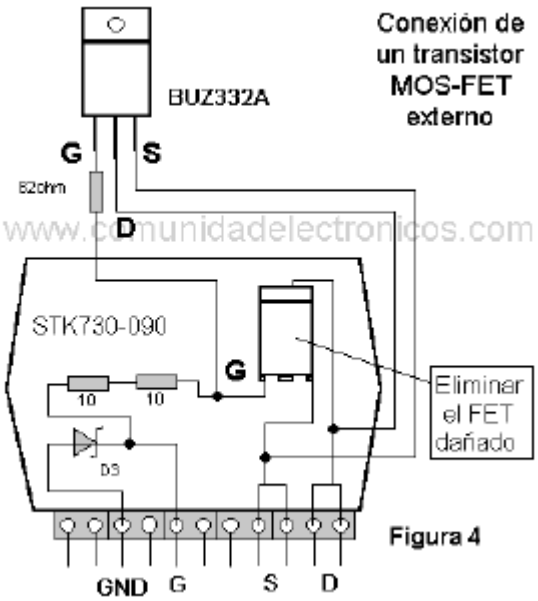

Figura 4

Because "the hybrid" integrated ones, of type STK, by their construction, usually are
relatively easy to open and to analyze, in some, its repair can be tried, with good success probabilities. In order to accede to the interior of these integrated, single are necessary to cut with care the plastic cover, like it appreciates in the figures. In Figure 1 it is possible to be seen internal structure of Original Stk730-090. In Figure 2, the one of one of many "falsifications" different, that lamentably they exist in
market of spare parts.
It will be able to notice in this last one, a simple Vista, the difference of quality and even the absence of some of components SMD, suppressed (or forgotten perhaps) in the process of
manufacture of the integrated one. When it is not possible to obtain a Stk730-090 of good quality to replace the damaged one, can be tried the repair of the

original one.
In order to facilitate the task,it includes here, the diagram internal of the integrated one.
The fault that appears most frequently, is the Q1 transistor (MOS-FET) damaged.
In those cases, the state of the other components is due to retire the transistor, and to verify that they conform the integrated one. If everything is well, an external transistor can be installed, connected like it shows Figure 4.
Logically, it must be installed on the dissipator and in case of being of "the metallic" type (nonisolated) it must place the appropriate aislaci?n. They are possible to be used anyone of the following ones transistors: 2SK1120, 2SK1934, BUZ33A, IRF840, or others of characteristic similars.
The wiring for the external MOS-FET must be shorter possible Zener D3, protects to the MOS-FET of pulses that can exceed the Maxima tension that can to support its "Gate". For that reason, one is due to verify as it is the Maxima tension of Gate (Gate to source reakdown voltage), that supports the transistor that it is going to install, and in case of being necessary, it must to replace D3 by zener of inferior voltage, stops to avoid that the damage of the new MOS-FET.
For example: if the data sheet (datasheet) of the external transistor that is going away to install, indicates one Maxima tension in Gate, of 20V, is due to replace D3 by zener of 18V.
The solutions, described here, have been proven with good results. But one is "alternating solutions", single for cases in which it is not had the original spare part of good quality, and single must be made by enabled technicians, with sufficient experience and knowledge, on basic procedures and precautions in this type of work.
The author, and the colleagues who collaborated in this I articulate, do not take responsibility of damages or others consequences of the application of the described thing here.
