

OSCILLATORS OS2/505, OS2/505A, OS2/514

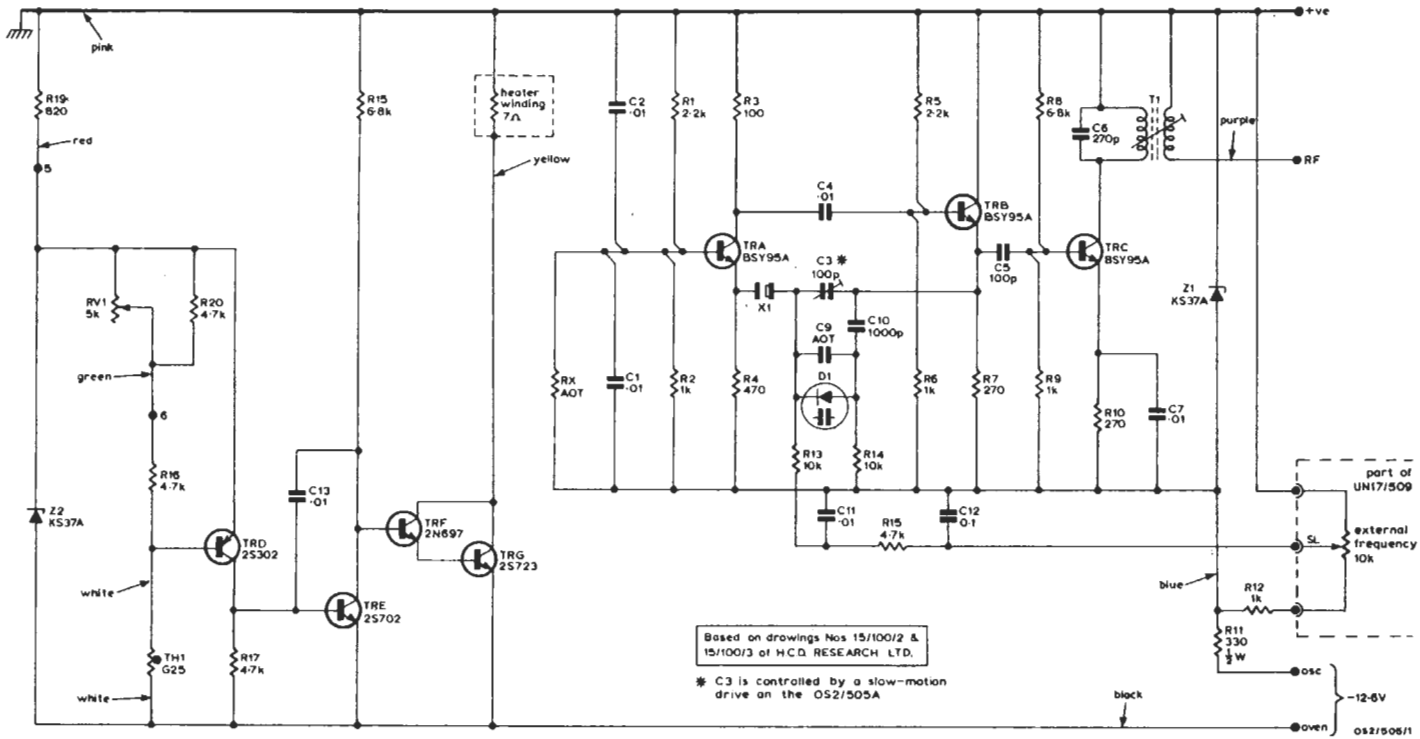


Fig. 1. Circuit of the OS2/505, OS2/505A, OS2/514

Introduction

These oscillators comprise a precision crystal oscillator Type H.C.D. 15 SOVS (manufactured by H.C.D. Research Ltd.) mounted on a modified CH1/12B chassis: this is wired into a parent unit as listed in Table 1. An oscillator Type H.C.D. 15 SOV is used in early units.

Table 1

<i>Oscillator</i>	<i>Frequency (MHz)</i>	<i>Parent Unit</i>
OS2/505,A	4.4296875	GE1/520,A
OS2/514	3.379545	GE1M/530

Circuit Description

The circuit of these oscillators is given in Fig. 1. Transistors TRD to TRG form part of the oven heater circuit. The operating temperature of the oven is set by the manufacturers to 75°C (about 50°C in earlier units) and the oven temperature control RV1 should not be adjusted.

The oscillator, of the Butler type, uses a crystal in its series-resonant mode in the feedback path of a two-stage amplifier. The oscillator has a tuned output stage. Frequency adjustment is provided in two ranges:

- (a) *Coarse Frequency* control C3 varies the frequency over a range up to 50 Hz. This capacitor is adjusted either (on the OS2/505A) by a front-panel control or on the other Oscillators by removing a plug at the rear of the unit. This plug must be replaced immediately after the adjustment is made.
- (b) *Fine Frequency* control. A range of frequency of about 4 Hz is provided by adjusting a 10-kilohm potential divider. This control shown as an external control in Fig. 1, may either be manually operated or form part of an automatic tuning system (such as that using an Oscillator Correction Unit UN17/509).

If it is not possible to tune the oscillator by means of these controls the value of capacitor C9 may be changed while using an eight-figure digital frequency counter to check the frequency. If such a counter is not available the oscillator should be returned to Equipment Department. Great care must be exercised in removing the end plate for such maintenance.

Units coded OS2/205 should be returned to Equipment Department for modification to OS2/505A.

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See overleaf for Fig. 1