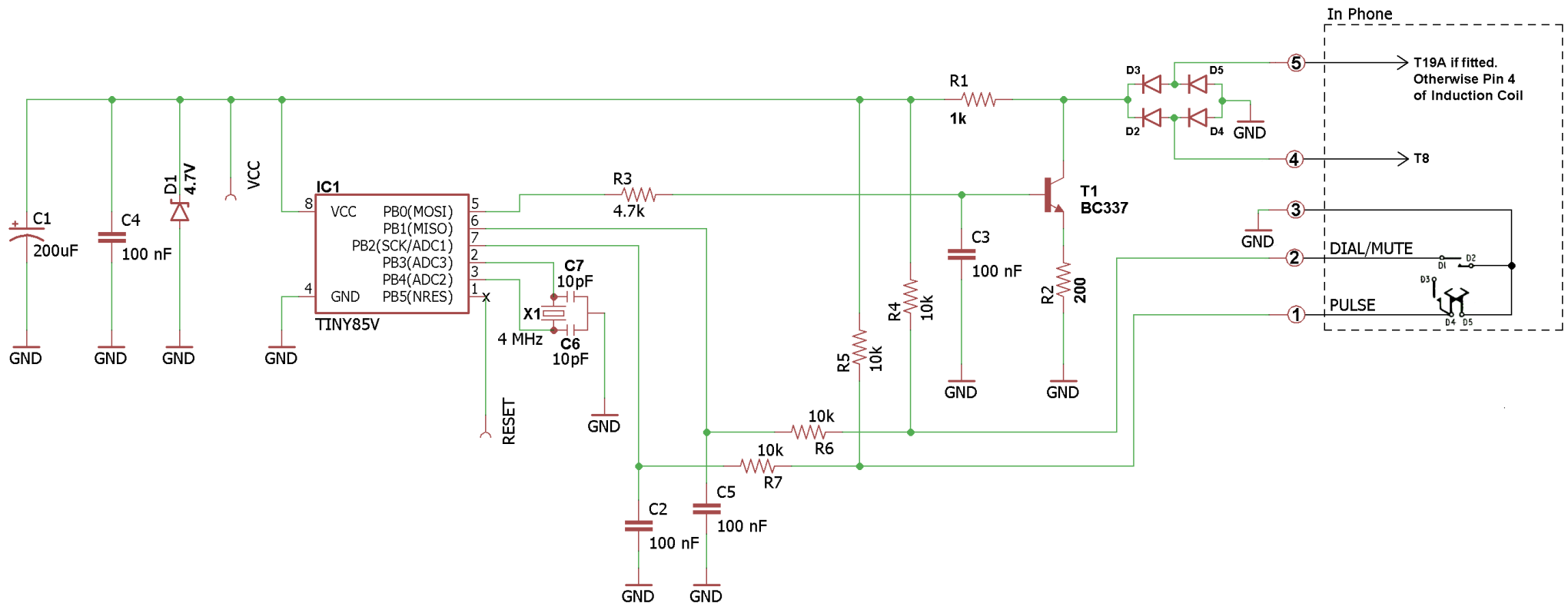


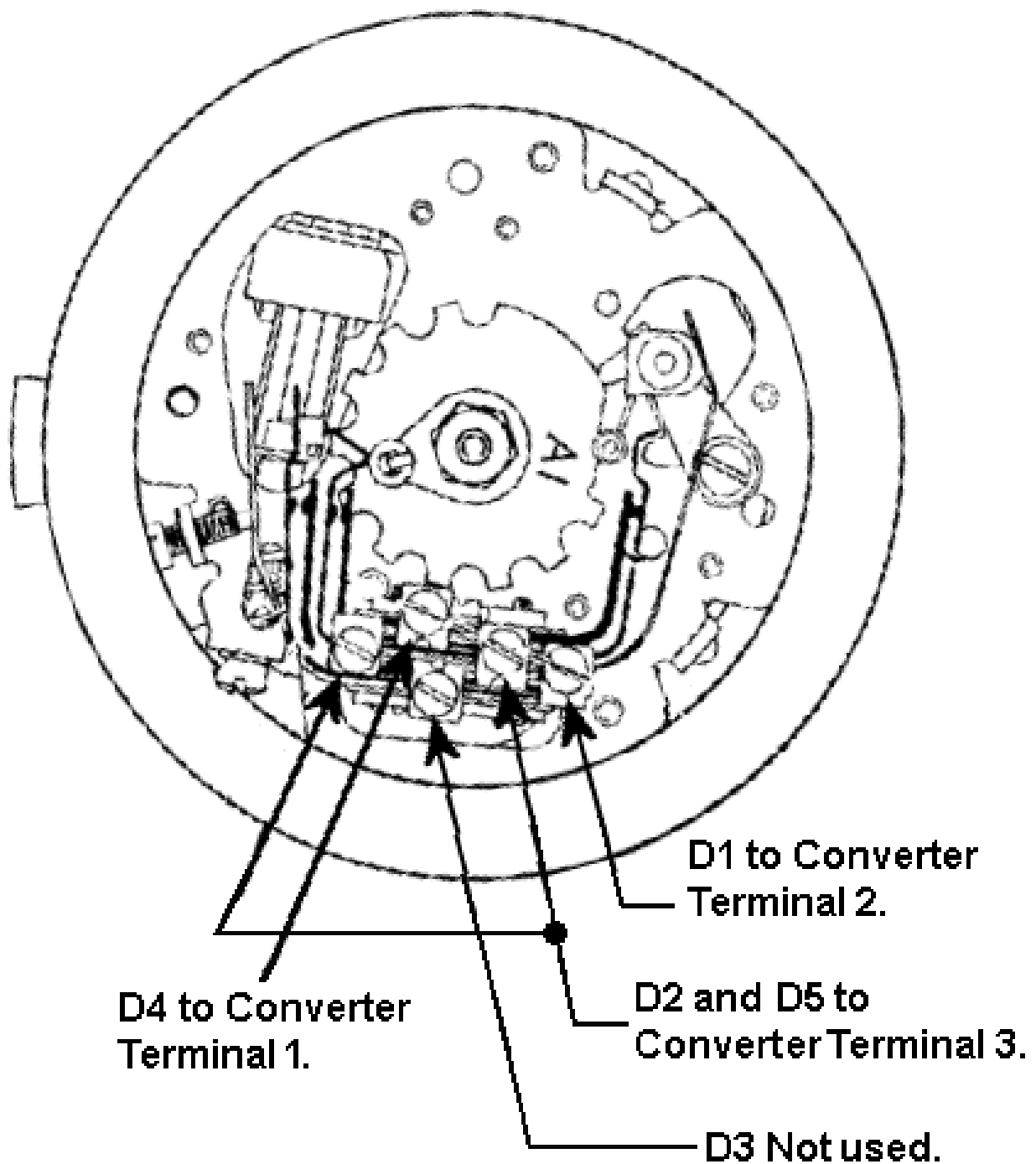
LD-DTMF Converter with Polarity Protection Bridge



Notes:

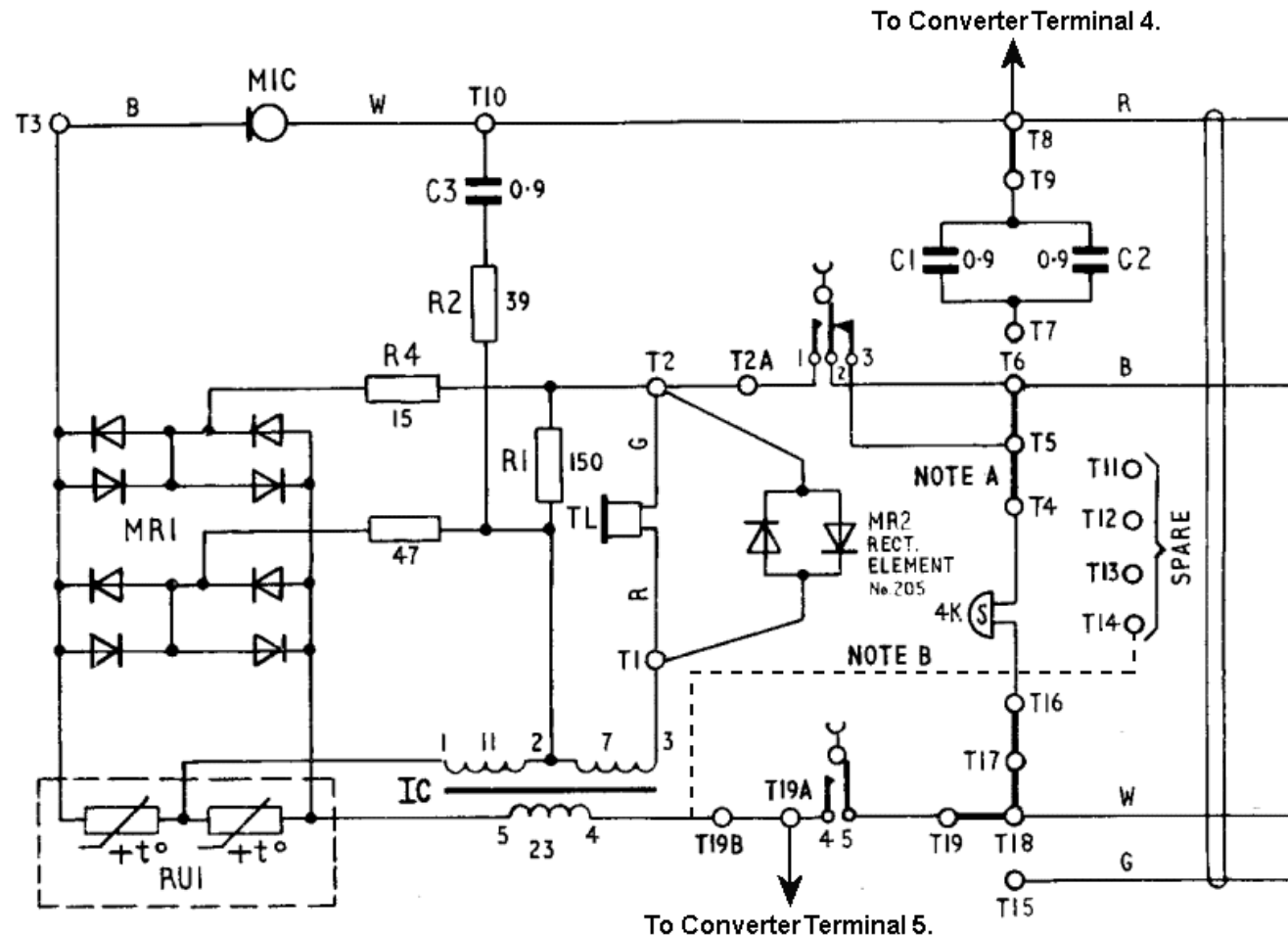
- Based on work by Boris Cherkaskiy (<http://boris0.blogspot.ca/2013/09/rotary-dial-for-digital-age.html>)
- Reduced R1 from 2k to 220R to minimize voltage droop when dial/pulse switches are closed.
- Added filtering to debounce switch inputs.
- Swapped Pins 6 and 7 on ATtiny85 to allow pulse counting to trigger on pin change interrupt (INT0).
- Changed diagram to illustrate connecting to GPO 746.
- Added Bridge to allow functionality independent of line polarity.
- Increased R1 to 1k as 220R caused reduction to telephone volume.
- Reduced R2 from 330R to 200R as ATA didn't always detect tones.
- Reduced D1 from 5.1V to 4.7V because they were all I'd got.

Dial Connexions — All Instruments

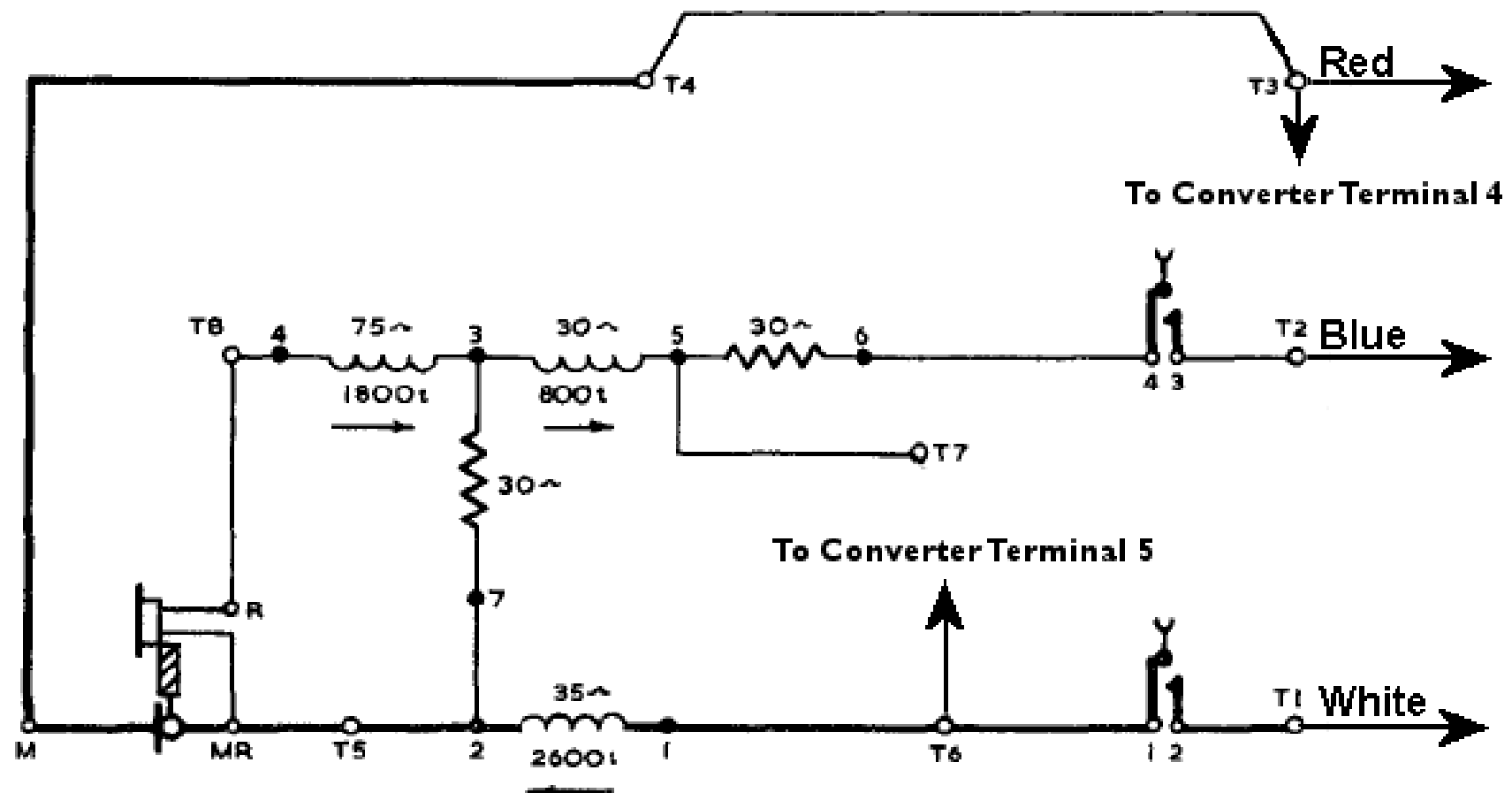


If instrument is fitted with 500 Ohm bell coils
replace link T4—T5 with 3.3K resistor.

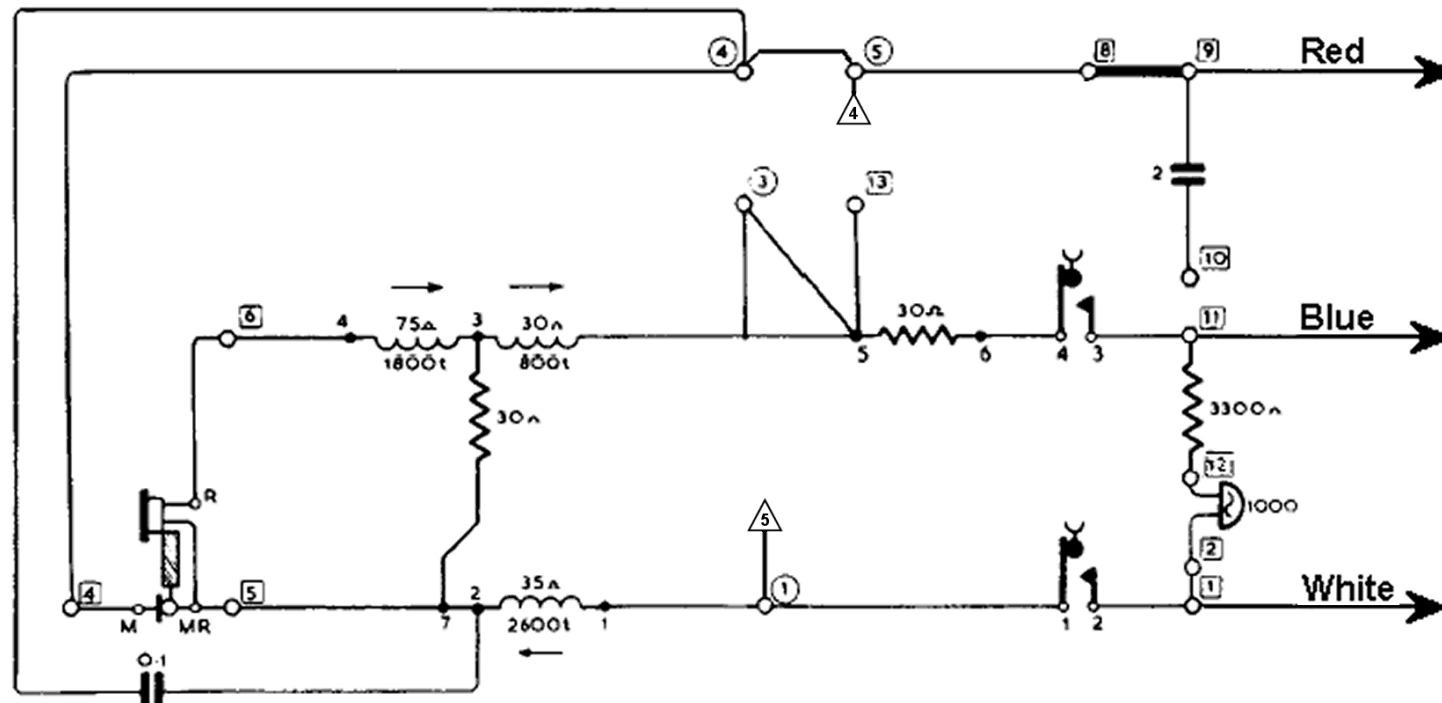
Connect wire as shown if instrument not fitted with terminals T19A and T19B. Connect Converter terminal 5 to T14.



TELEPHONE No.232 & 1/232...

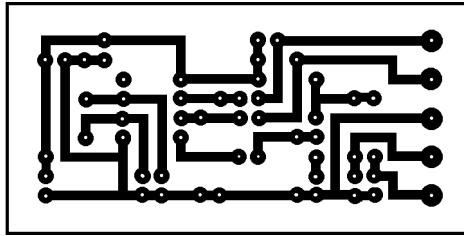


TELEPHONE No. 332

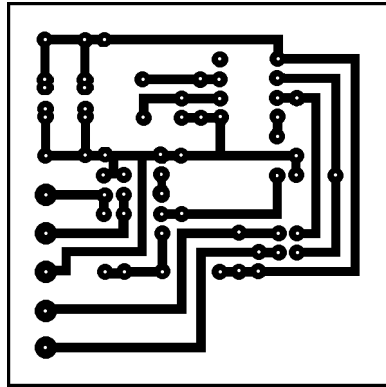


Direction of windings indicated by arrow thus →

TERMINAL POINTS	
□	Telephone Terminal Strip
○	Dial Strip
△	Converter

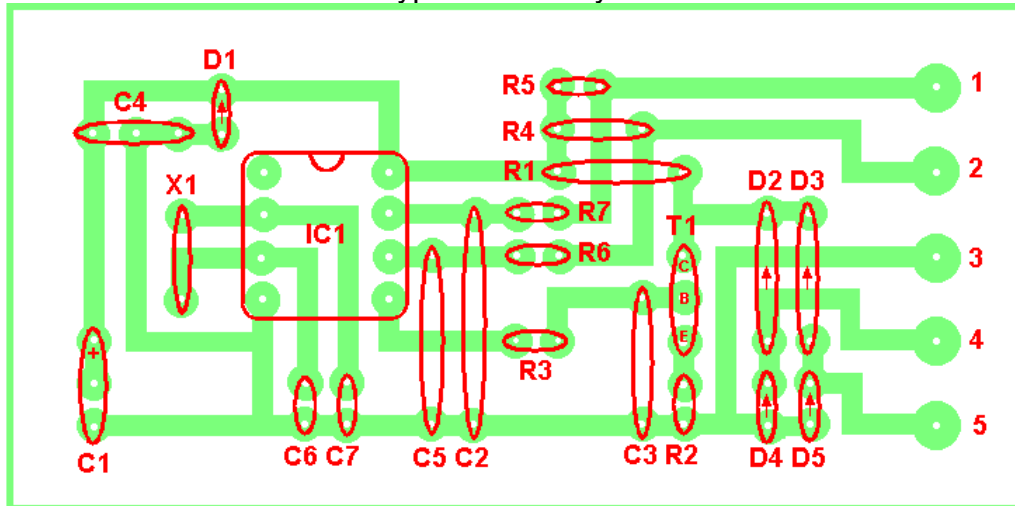


Type 1 PCB

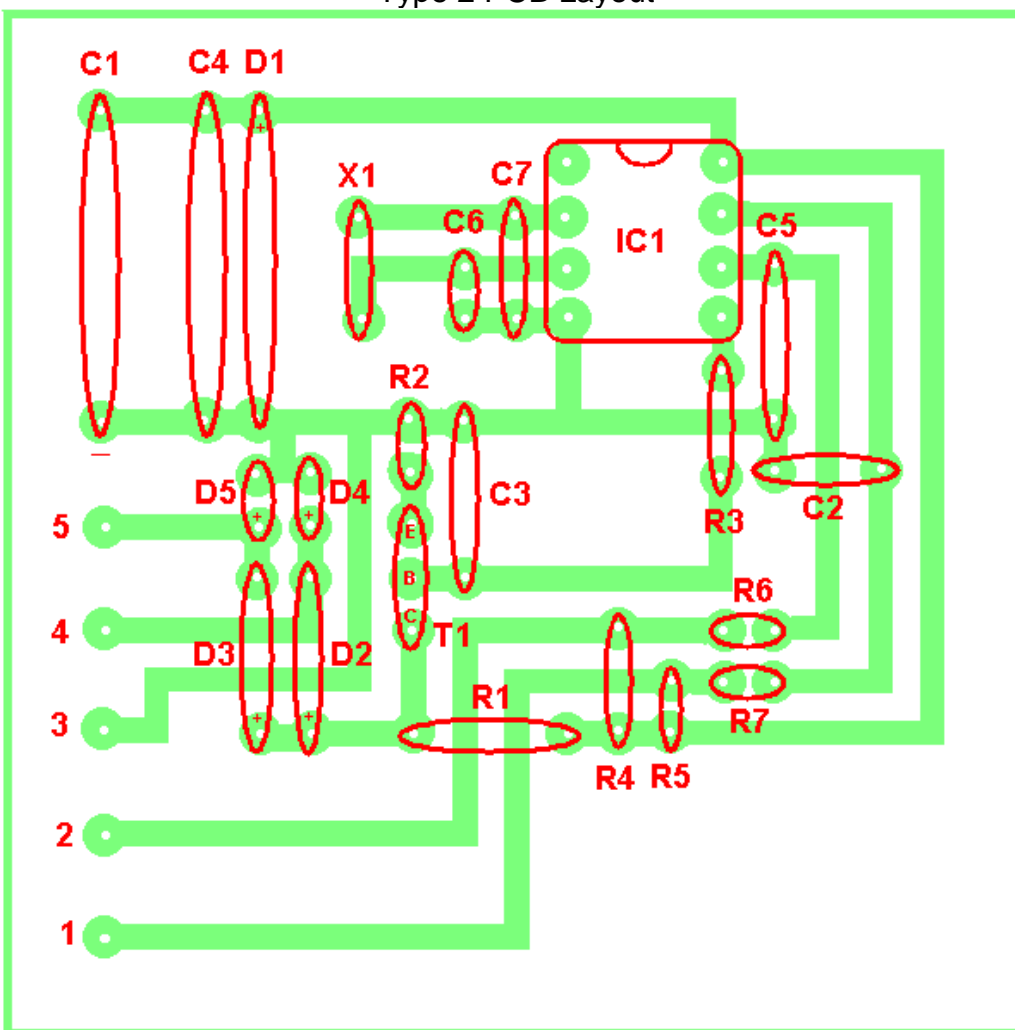


Type 2 PCB

Type 1 PCB Layout



Type 2 PCB Layout



Components:-

R1 1k Ω
 R2 200 Ω
 R3 4.7k Ω
 R4 10k Ω
 R5 10k Ω
 R6 10k Ω
 R7 10k Ω

C1 220 μ F
 C2 0.1 μ F
 C3 0.1 μ F
 C4 0.1 μ F
 C5 0.1 μ F
 C6 10pF
 C7 10pF

D1 4.7V Zener
 D2-D5 1N4007
 T1 BC337
 IC1 ATtiny85
 X1 4MHz Crystal