

MORSE KEYER (or Elbug) PROJECT

This easy to make circuit can key a transmitter and/or produce an audible output for learning or monitor purposes, using either a single or two-paddle key. With a 9V battery the unit draws $< 0.5\text{mA}$ when idle and about 3mA operating, but will work with any voltage from 4.5 - 15 V and over this range, the output to TX (but not the audio note) is unaffected.

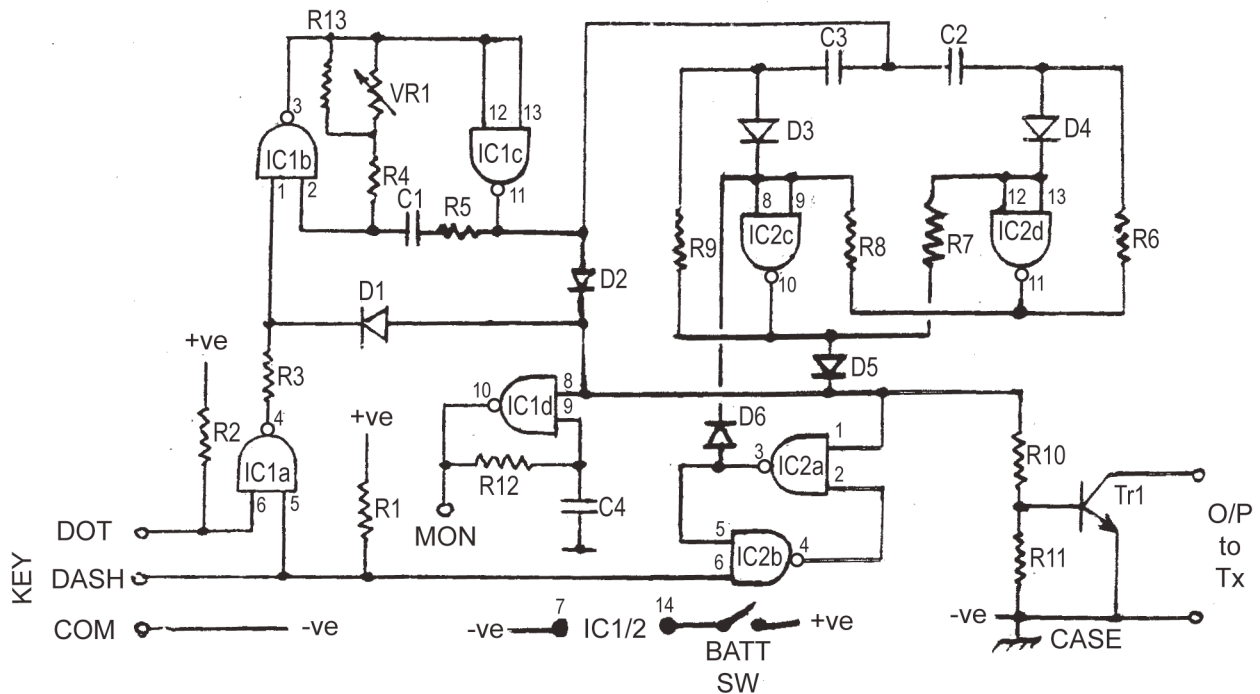
The component count is quite modest and includes some optional items for the constructor to decide upon, in particular the sounder. This and its volume control were made external to keep the keyer unit's size down and also because most (modern) rigs have built-in sidetone generators in their CW mode.

As shewn, the speed range is 5-25 w.p.m. with the correct ratio of a dash being three times the length of a dot, but note that the speed control is "reversed" in that clockwise rotation gives a lower speed. This is done to achieve a nearly linear scale from a non-linear (logarithmic) potentiometer and an associated resistor.

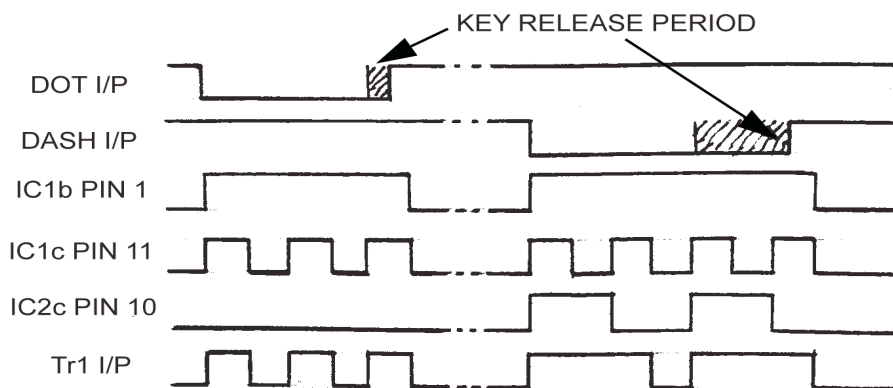
Diagrams attached; circuit diagram, track cutting guide, component layout, volts table and a waveform diagram.

John Bonner's Elbug Project

CIRCUIT DIAGRAM



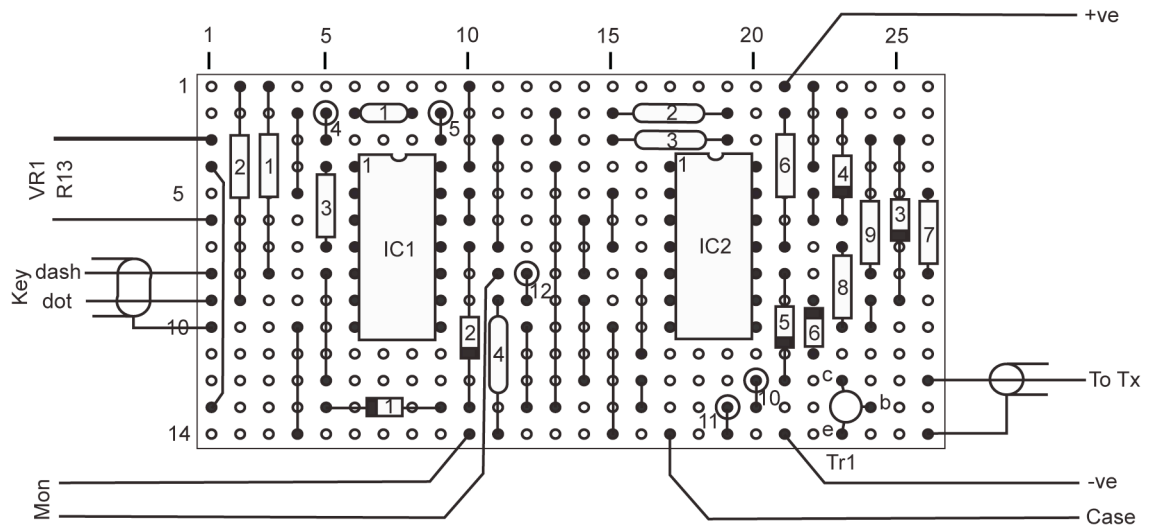
TIMING DIAGRAM



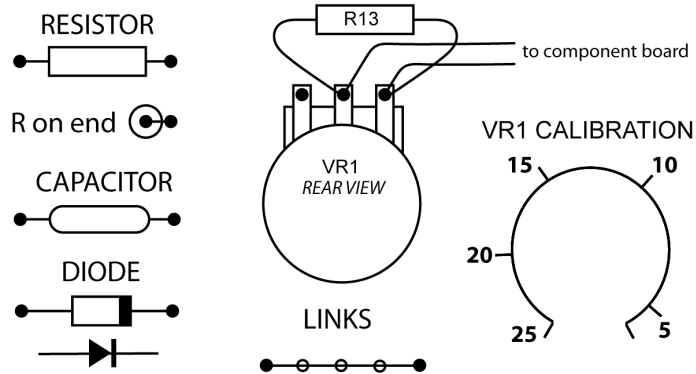
COMPONENT LIST

R1, R2, R5	5K6	¼W	Tr1	BC108
R4	33K	¼W	IC1, IC2	HCF4093BE
R3, R6-11	10K	¼W		
R12	180K	¼W		2 x IC Sockets
R13	220K	¼W		Small On/Off Switch SPST
VR1	470K	Logarithmic		Pointer Knob
C1	1uF	non-electrolytic		Small Metal Case
C2-4	10nF			Copper strip board
D1-6	1N4148	or similar		Battery Connector

COMPONENT LAYOUT



SYMBOLS & DETAIL



TRACK CUTS

