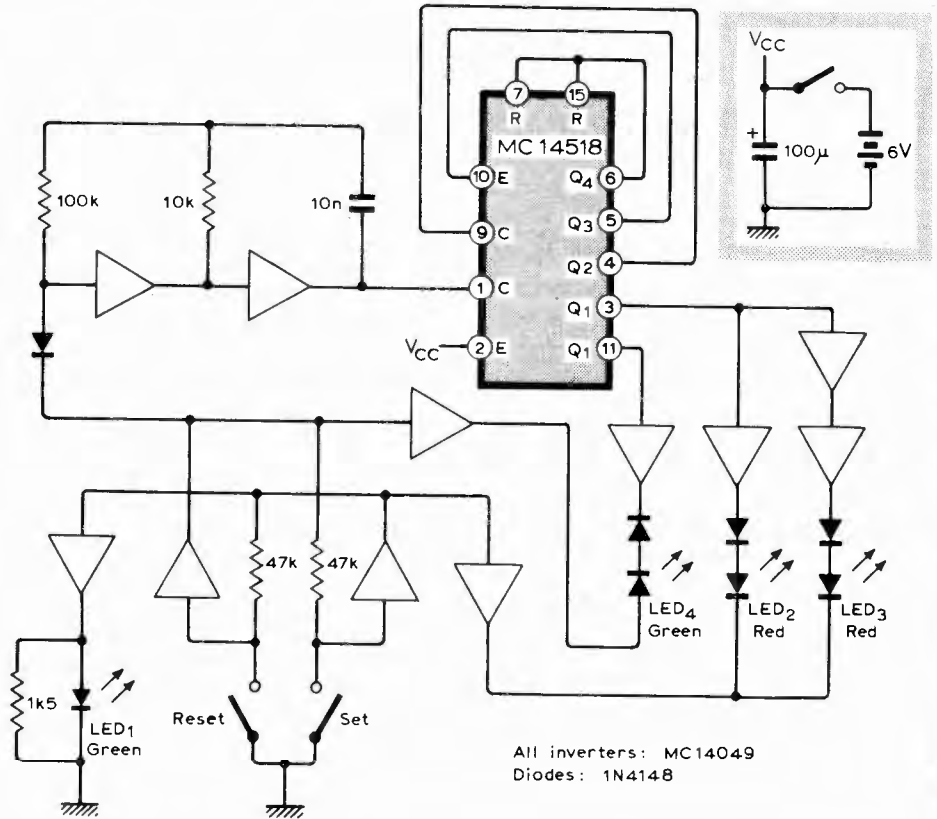


I Ching

THIS CIRCUIT is the electronic equivalent of I Ching, a form of divination originally from China. In its classic form a response is obtained by the manipulation of 50 sticks or by the combination three coins. A book on the subject is then required to interpret the result. The whole process must be repeated six times to have a complete response. The electronic version consists of an oscillator running at 4 kHz, a double counter which produces a 2 kHz waveform with a 50% duty cycle, and a 500 Hz waveform with a 25% duty cycle. This is the correct relationship which reflects the combinations obtainable from I Ching in its original form. When reset is pressed the oscillator runs, i.e.d. 1 is on and all other i.e.d. are off. When set is pressed the oscillator stops, i.e.d. 1 goes off, i.e.ds 2, 3 and 4 are enabled and the information in the double counter is displayed. Either i.e.d. 2 or 3 will always light up representing a Yin and Yang line respectively. In those cases when i.e.d 4 also lights, it means that the Yin or Yang line is also a moving line. The circuit is then reset and is ready for a new reading until all 6 have been taken. The circuit is not critical and will operate from a supply between 3 and 12V.

D. Di Mario,
Johannesburg,
S. Africa

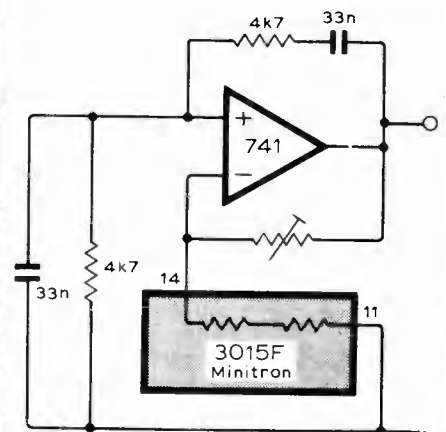
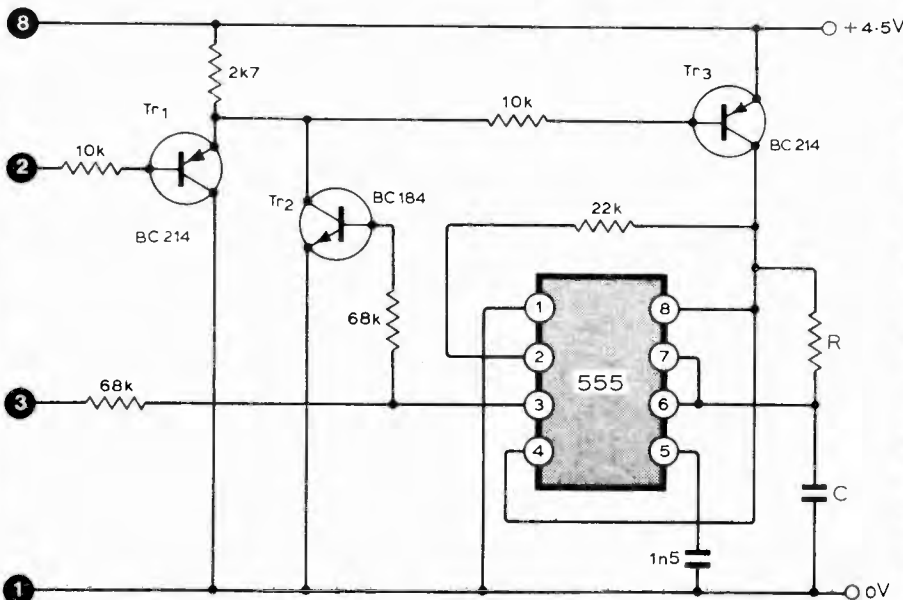


All inverters: MC14049
Diodes: 1N4148

Low current 555 timer

IN THE OFF STATE the supply current to a 555 timer is about 3mA. For battery powered circuits where this is too high the modified circuit shown can be used. This reduces the current to about 2µA although the on state current rises to about 3.5mA. Other properties of the timer remain practically unaltered. When the circuit is off, pin 2 is disconnected from ground so Tr₁ and Tr₃ are turned off. Because the 555 has no sup-

ply voltage Tr₂ is also off. When a negative trigger pulse is applied to pin 2, Tr₁ and Tr₃ are turned on and connect the timer to the supply rail. A positive pulse from pin 3 of the timer turns Tr₂ on which keeps Tr₃ on. After the delay period has elapsed the timer returns to the off state. Connections 4, 5, 6 and 7 of the i.c. are still used but pins 1, 2, 3 and 8 are replaced by the new connections. Dr O. B. Hellman,
Turku,
Finland.



Minitron replaces thermistor

IN CONVENTIONAL Wien bridge oscillators an expensive and delicate thermistor is used to stabilize the amplitude. This circuit uses segments of a minitron display whose resistances increase from about 100Ω at one volt, to about 700Ω at six volts. Various combinations of the seven segments can be used and one minitron can be used in several circuits.

The design shown operates at around 1kHz and produces one volt r.m.s. For setting up, a 10kΩ variable resistor to give one volt output.

R. Gough,
Shenstone,
Staffs.