

To test an IC and carrying out  
measurements with a multimeter  
and a CRO

# IC555 timer

- IC555 is a mixture of analogue and digital circuitry.
- It is used in timing and digital pulse generation.

# Internal features

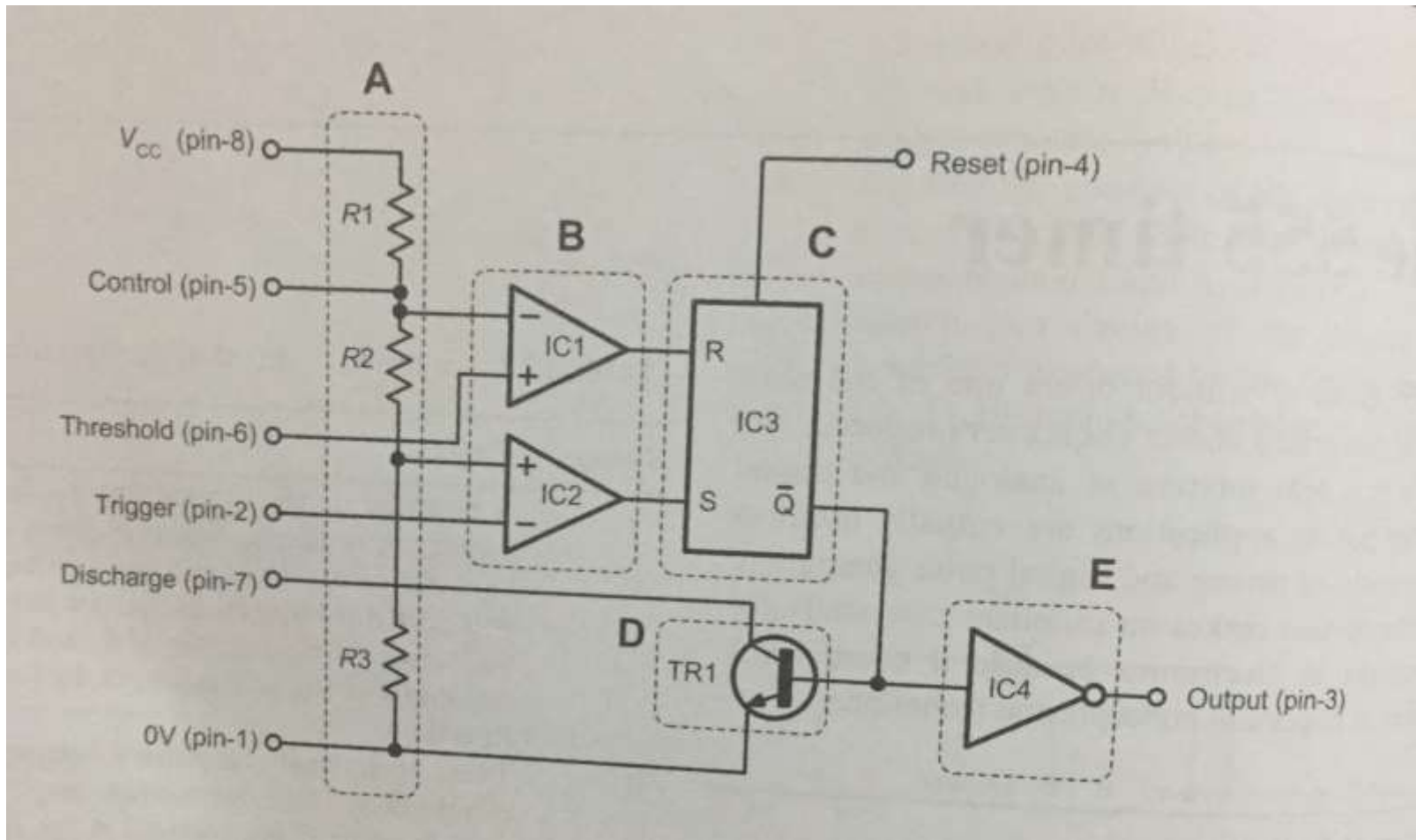
- It consists of two operational amplifiers which are used as comparators.
- The single transistor switch TR1 is provided as a means of rapidly discharging an external timing capacitor.
- As R1, R2 and R3 have identical values, VCC is divided equally across all the three resistors.

- Voltage at non-inverting input IC1 is one third of supply voltage  $V_{cc}$  while at inverting input IC2 is two third of supply voltage  $V_{cc}$

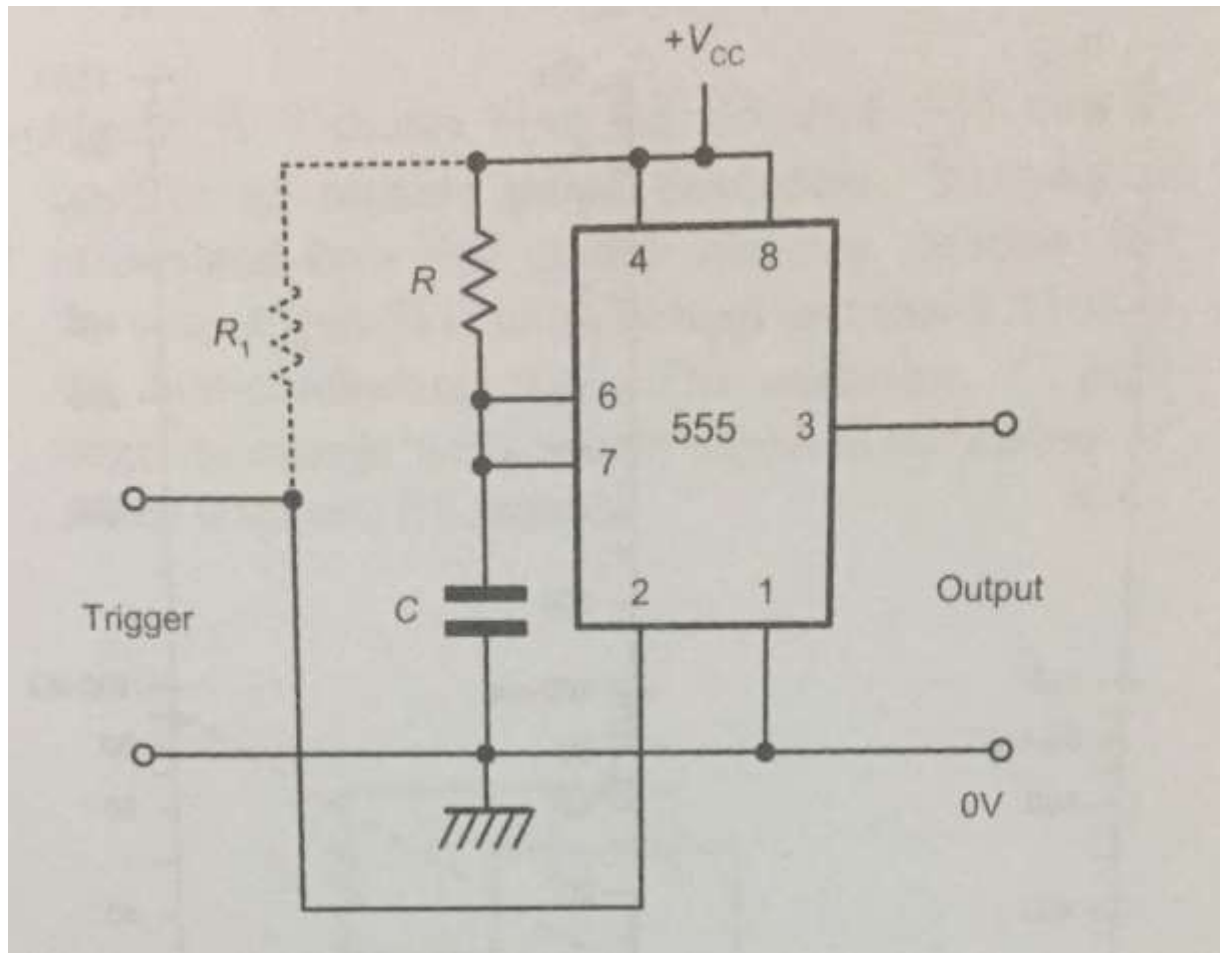
# Poll

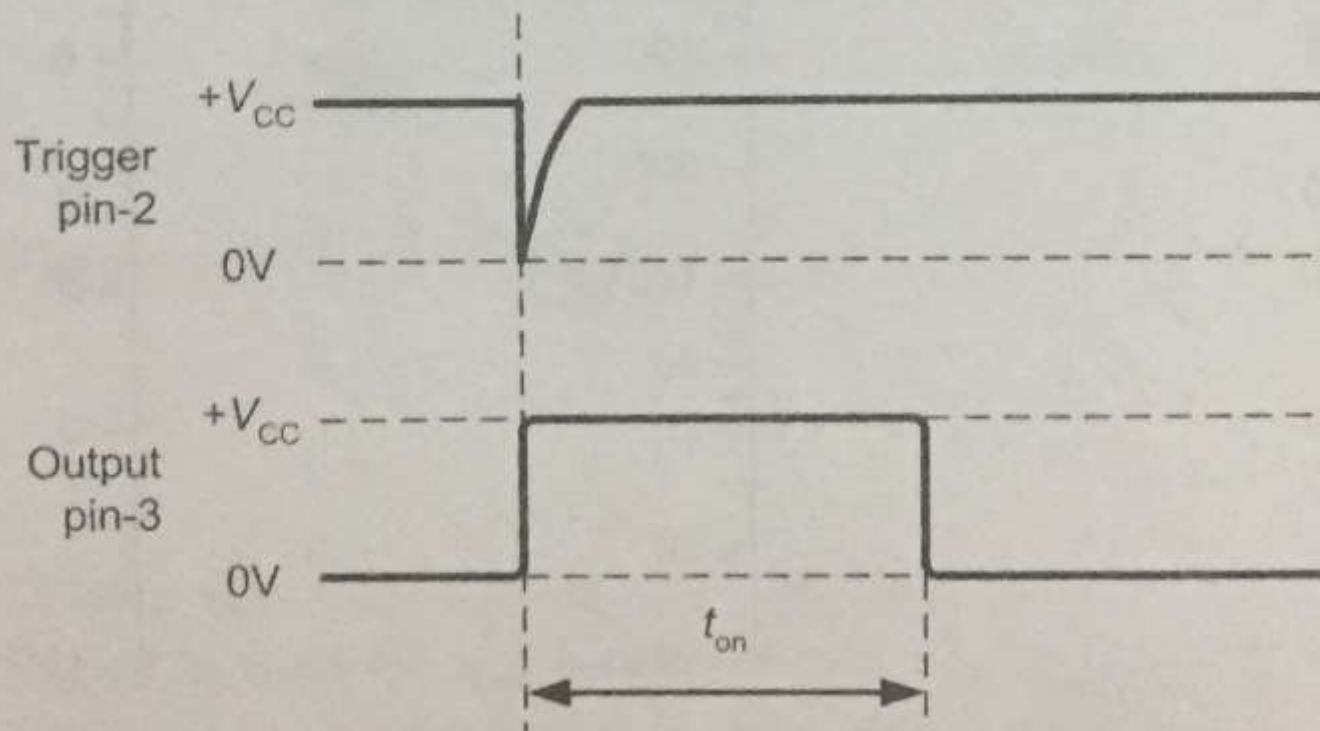
- In an IC555 , voltage at non-inverting input IC1 is
- (A)  $=V_{cc}$
- (B)  $1/3V_{cc}$
- (C)  $2/3 V_{cc}$
- (D) None of the above

# IC555 internal arrangement



# Monostable pulse generator

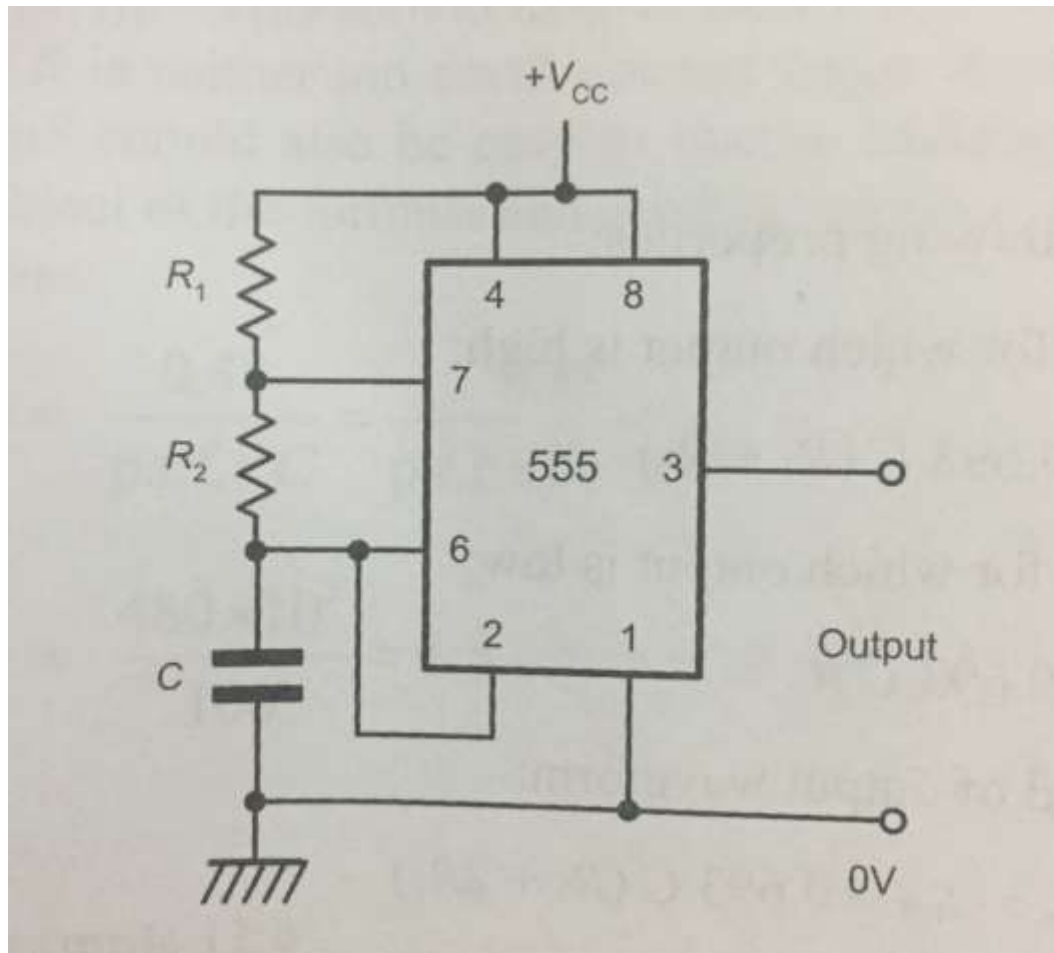


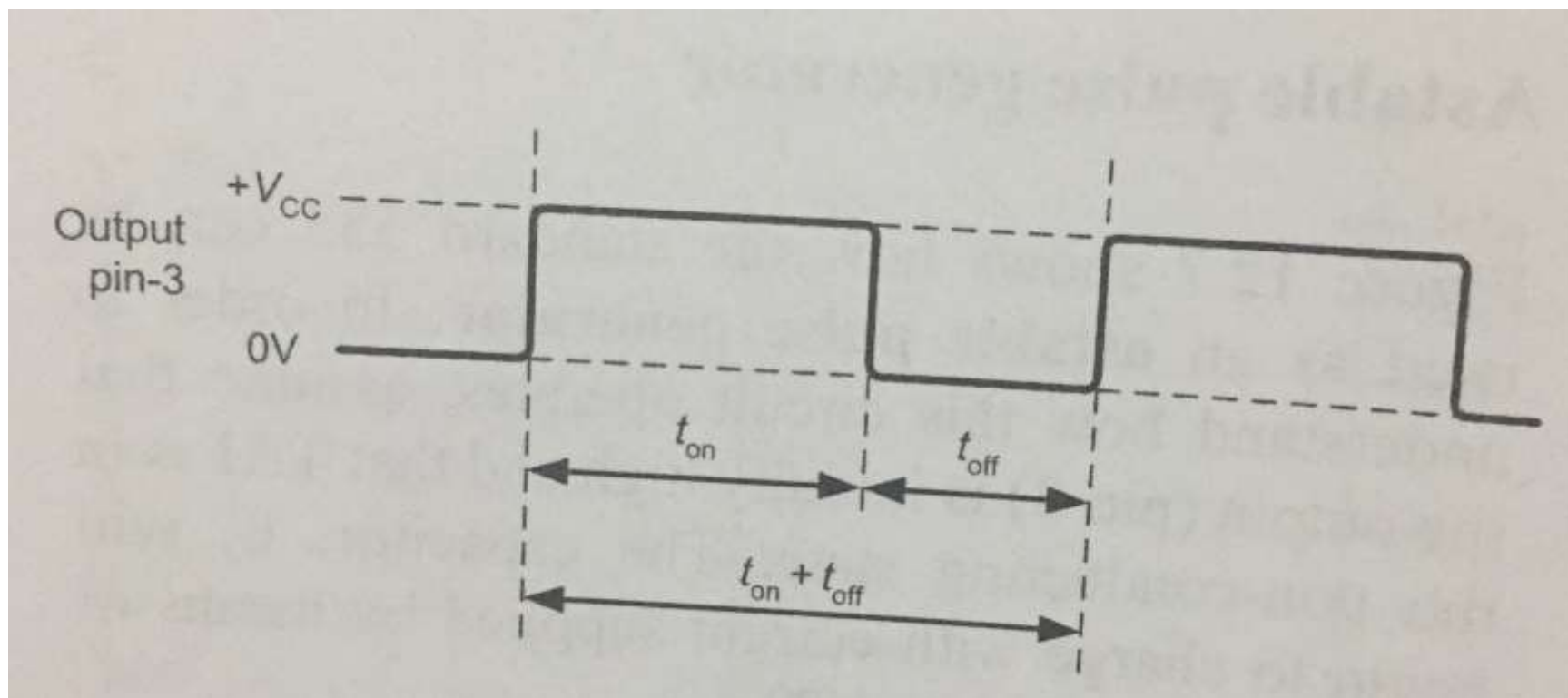




- The time period of IC555 monostable multivibrator can be changed by changing the values of timing resistor and timing capacitor,  $C$

# Astable pulse generator





# Properties

- Time for output is high =  $t_{on} = 0.693C(R1+R2)$
- Time for output is Low =  $t_{off} = 0.693CR2$
- $t = 0.693C(R1+2R2)$
- $f = 1.44/C(R1+2R2)$
- $DC = t_{on}/t_{off} = R1+R2/R1+2R2$

# Poll

- In an IC555 , voltage at inverting input IC2 is
- (A)  $=V_{cc}$
- (B)  $1/3V_{cc}$
- (C)  $2/3 V_{cc}$
- (D) None of the above