



SNS COLLEGE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)

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Department of Biomedical Engineering

Course Name: 23BMB101-Electron Devices and Circuits

I Year : II Semester

Unit IV – Power Amplifiers & Switching Circuits

Topic : Multivibrators - Bistable



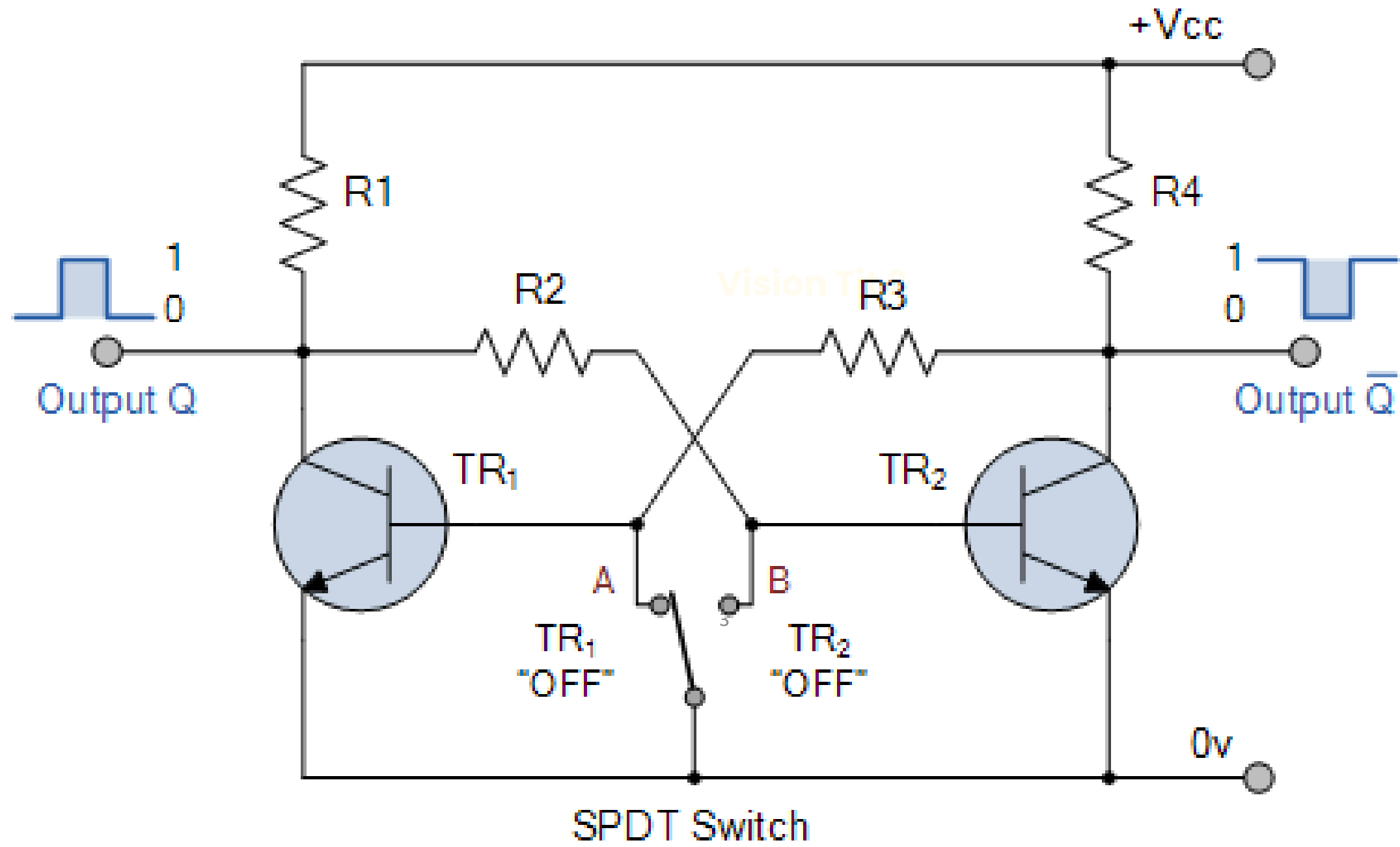
INTRODUCTION



- Bistable Multivibrators have TWO stable states (hence the name: “Bi” meaning two) and maintain a given output state indefinitely unless an external trigger is applied forcing it to change state.
- The bistable multivibrator can be switched over from one stable state to the other by the application of an external trigger pulse thus, it requires two external trigger pulses before it returns back to its original state.
- As bistable multivibrators have two stable states they are more commonly known as Latches and Flip-flops for use in sequential type circuits.



Bistable Multivibrators



Vision Title 3

Vision Title 3



Bistable Multivibrator



- Lets suppose that the switch is in the left position, position “A”.
- The base of transistor TR1 will be grounded and in its cut-off region producing an output at Q. That would mean that transistor TR2 is “ON” as its base is connected to Vcc through the series combination of resistors R1 and R2.
- As transistor TR2 is “ON” there will be zero output at Q, the opposite or inverse of Q.
- If the switch is now move to the right, position “B”, transistor TR2 will switch “OFF” and transistor TR1 will switch “ON” through the combination of resistors R3 and R4 resulting in an output at Q and zero output at Q the reverse of above.
- Then we can say that one stable state exists when transistor TR1 is “ON” and TR2 is “OFF”, switch position “A”, and another stable state exists when transistor TR1 is “OFF” and TR2 is “ON”, switch position “B”.



Bistable Multivibrator

- Unlike the monostable multivibrator whose output is dependent upon the RC time constant of the feedback components used, the bistable multivibrators output is dependent upon the application of two individual trigger pulses, switch position “A” or position “B”.

