

DESIGN OF SCHMITT TRIGGER

R. Veera santhya

C.S. Rubiga

C. Hema

Department of Electronics & Communication Engineering

Dr. Mahalingam College of Engineering & Technology,
pollachi.

Email: santhya28@gmail.com

INTRODUCTION:

Now a days we are demanding for the reduction in energy consumption so that we interested in implementing the design of sub-threshold digital circuits. We are reserved of miniaturized energy-autonomous system because the applications needs supply voltage VDD below the point is appreciable enough to saturate the output.it is applicable mostly to low supply voltages applications. VDD consumption is anonymously decreasing with respect the power supply to get an efficient mode of operation. the value of the VDD is minimum to keep the circuit in standby power reduction. Schmitt trigger is an electronic circuit with positive feedback which holds the output level till the input signal reach higher value than the threshold level.it is also known as regenerative comparator. it will also generate square waveform for particular duty cycle.it helps us to translate the slow or noisy edges.it belongs to class of bistable multivibrator circuit.it gives two different threshold levels for rising and falling edge in order to get two different non-symmetrical thresholds.it is used in open loop configuration for noise immunity and closed loop configuration to implement function generators.

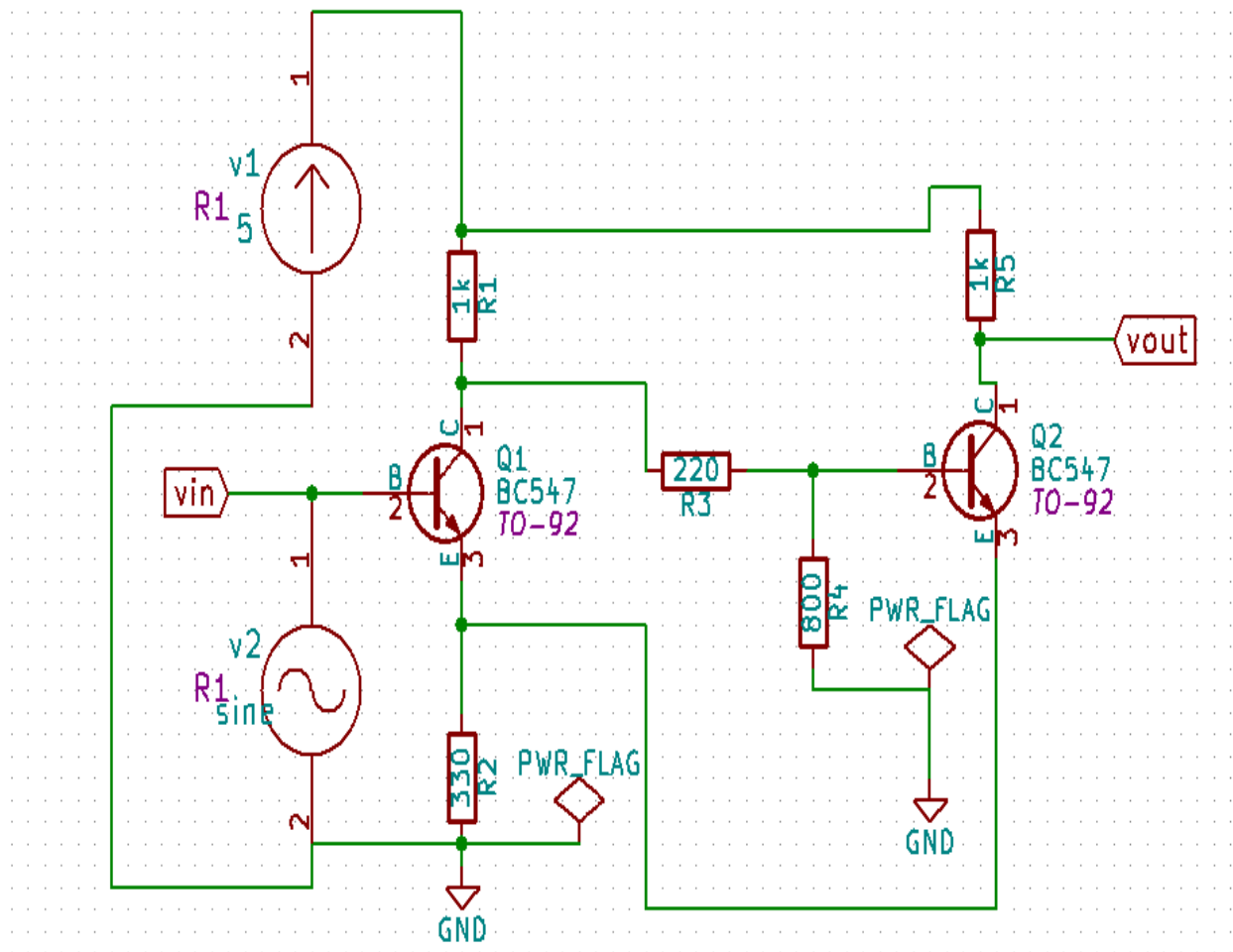
The analysis of the threshold level is obtained using the below formulae

$$UTP = \frac{1}{2} VCC$$

$$LTP = -\frac{1}{2} VCC$$

These are efficient threshold level of the Schmitt trigger with input to get corresponding output.

CIRCUIT DIAGRAM:



DESIGN MODELLING:

$$UTP = \frac{1}{2} V_{CC}$$

$$LTP = -\frac{1}{2} V_{CC}$$

GIVEN:

$$R1 = 1k\Omega$$

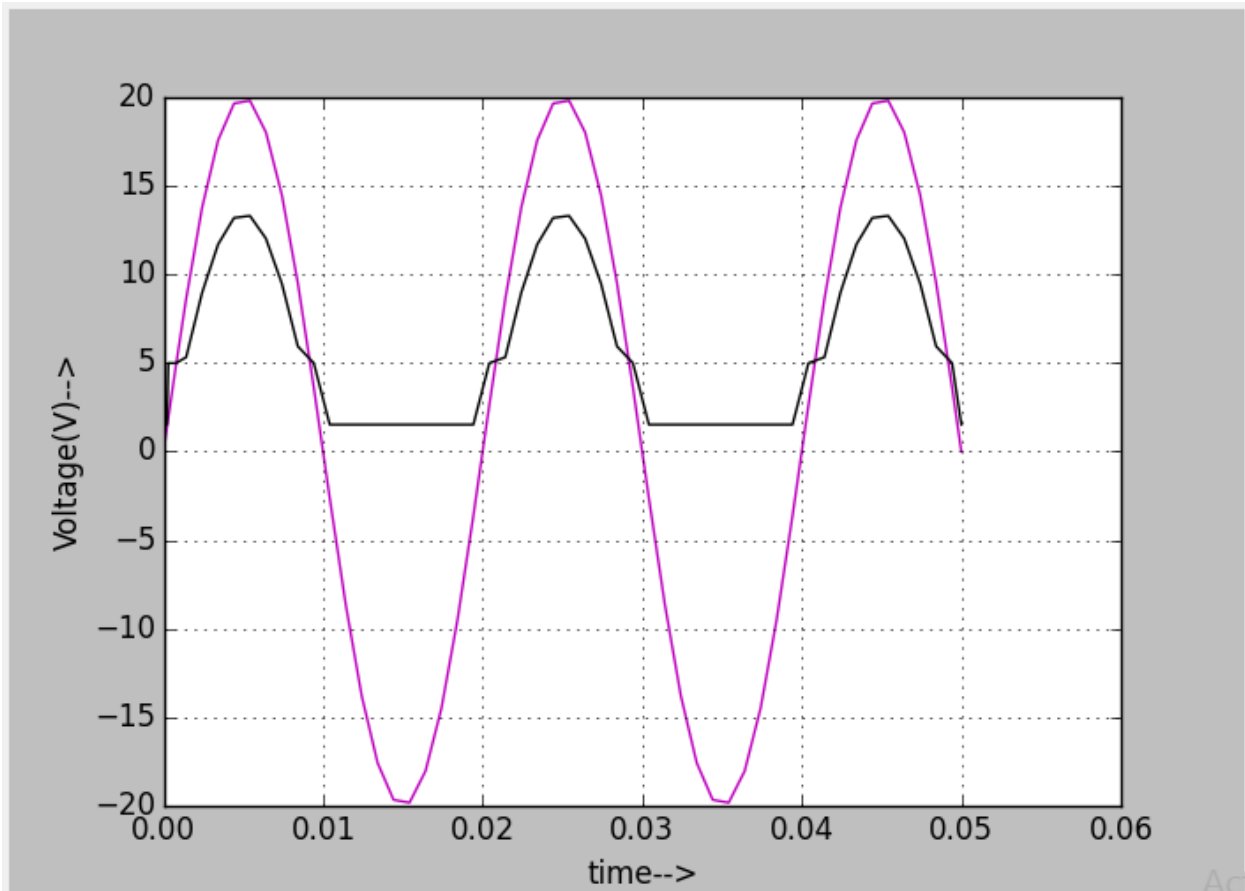
$R2=330\Omega$

$R3=220\Omega$

$R4=800\Omega$

$R5=1K\Omega$

SIMULATION OUTPUT:



REFERENCE:

<https://www.google.co.in/search?q=schmitt+trigger+circuits+using+transistors&oq=schmitt+trigger+circuits+using+transistors&aqs=chrome..69j57.34657j0j4&sourceid=chrome&ie=UTF-8>

date of reference: 13/12/2017

