



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)



COIMBATORE-35

**Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai**

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING**

**COURSE NAME: 23EET101/BASIC ELECTRICAL AND
ELECTRONICS ENGINEERING**

I YEAR / I SEMESTER

Unit IV – ANALOG ELECTRONICS

Topic : Applications



VOLTAGE REGULATOR

- Function- to maintain a constant DC voltage at the output irrespective of voltage fluctuations at the input and (or) variations in the load current.
- voltage regulator produces a regulated DC output voltage.
- voltage regulator I_{cs}
- Types
 - Fixed voltage regulator
 - Adjustable voltage regulator



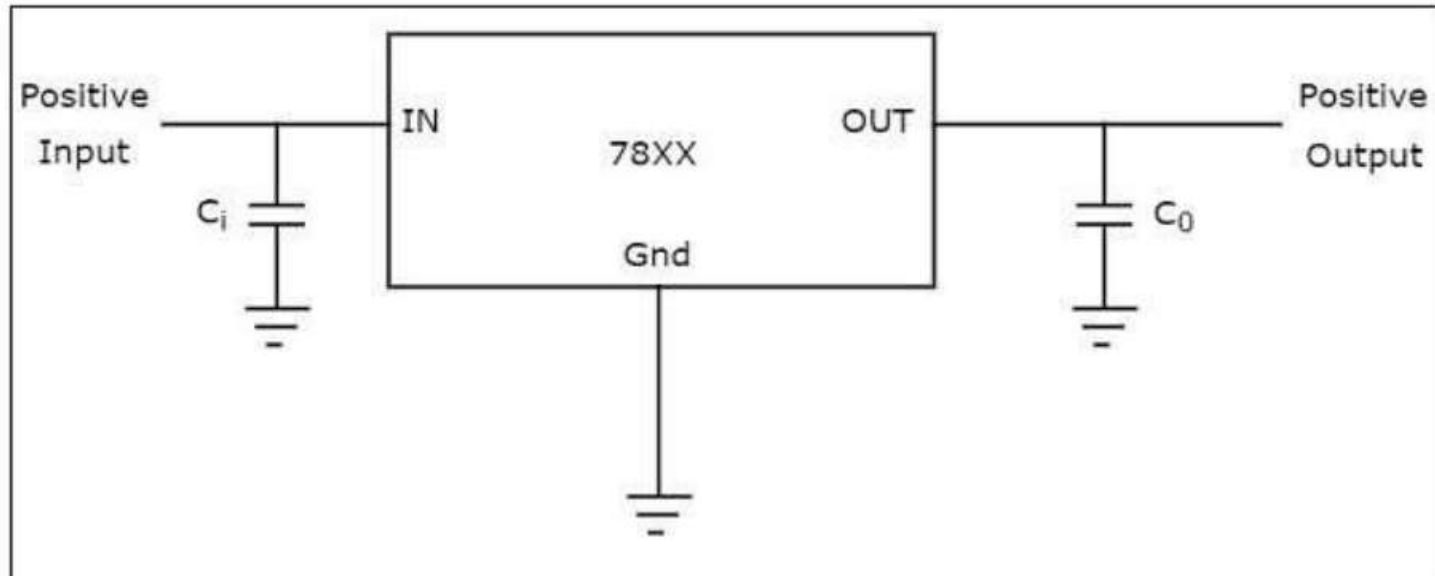
FIXED VOLTAGE REGULATOR

- produces a fixed DC output voltage, which is either positive or negative.
- 78xx voltage regulator Ics - positive fixed DC voltage values
79xx voltage regulator ICs - negative fixed DC voltage values.
- “xx” corresponds to a two-digit number and represents the amount (magnitude) of voltage that voltage regulator IC produces.
- Both 78xx and 79xx voltage regulator ICs have 3 pins each and the third pin is used for collecting the output from them.



FIXED VOLTAGE REGULATOR

- Examples 7805 voltage regulator IC produces a DC voltage of +5 volts. 7905 voltage regulator IC produces a DC voltage of -5 volts.



- The input capacitor C is used to prevent unwanted oscillations and the output capacitor, C acts as a line filter to improve transient response

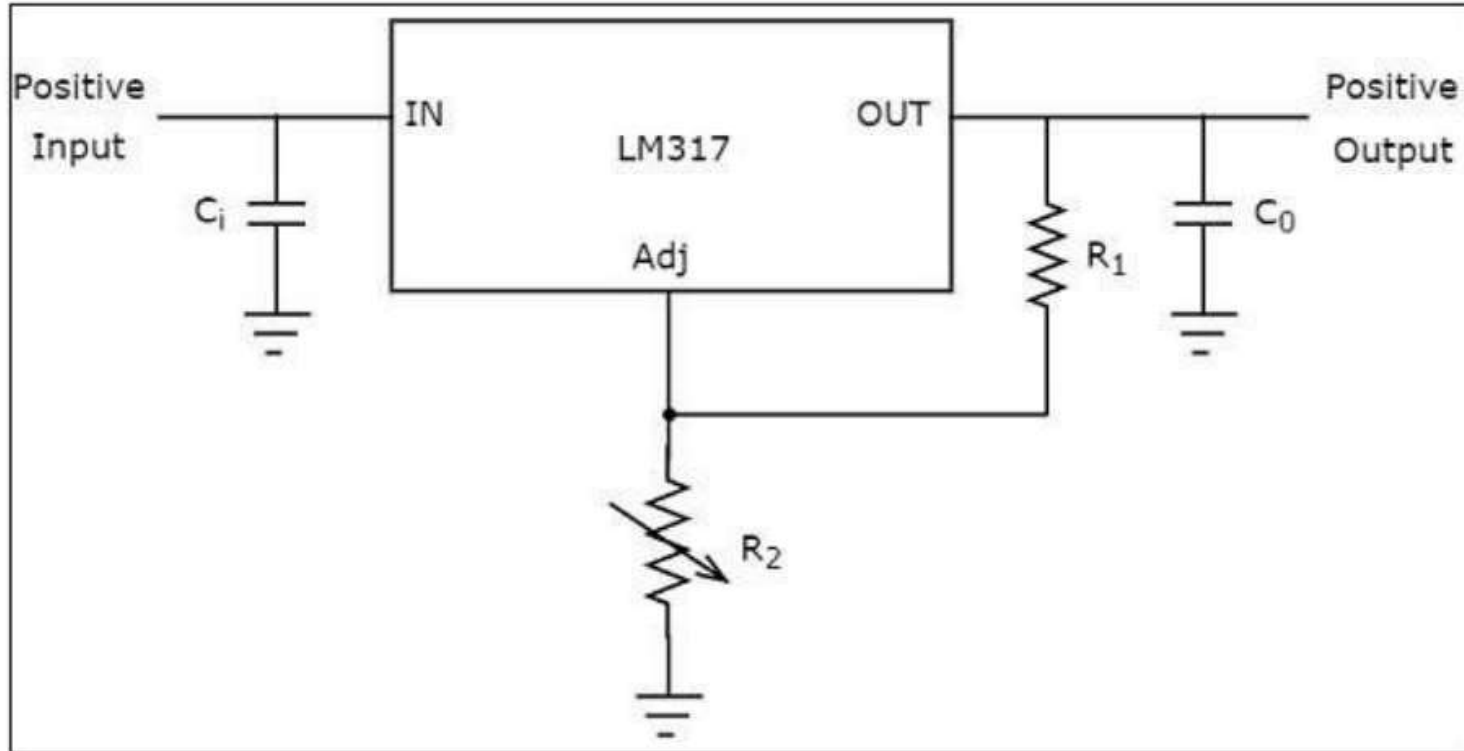


ADJUSTABLE VOLTAGE REGULATOR (VARIABLE VOLTAGE REGULATOR)

- Produces a DC output voltage, which can be adjusted to any other value of certain voltage range.
- also called as a variable voltage regulator.
- The DC output voltage value of an adjustable voltage regulator can be either positive or negative.
- LM317 voltage regulator IC LM317 voltage regulator IC - used for producing a desired positive fixed DC voltage value of the available voltage range.
- LM317 voltage regulator IC has 3 pins.
- The first pin is used for adjusting the output voltage, second pin is used for collecting the output and third pin is used for connecting the input.
- The adjustable pin (terminal) is provided with a variable resistor which lets the output to vary between a wide range.



ADJUSTABLE VOLTAGE REGULATOR (VARIABLE VOLTAGE REGULATOR)





*Thank
you!*