



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

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 : 19EE101-BASIC ELECTRICAL & ELECTRONICS ENGINEERING

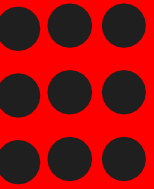
I YEAR /I SEMESTER MCT

Unit 4: Analog Electronics

Topic : Diode Applications: Rectifiers

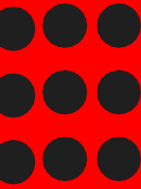


GRADUATE ATTRIBUTES





DIODE APPLICATION: RECTIFIER



A **rectifier** is an electrical device that converts alternating current (AC), which periodically reverses direction, to direct current (DC), which flows in only one direction.

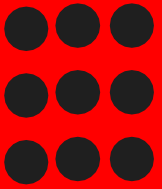
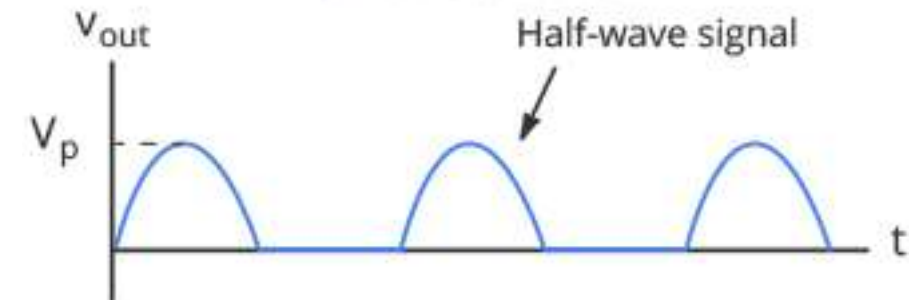
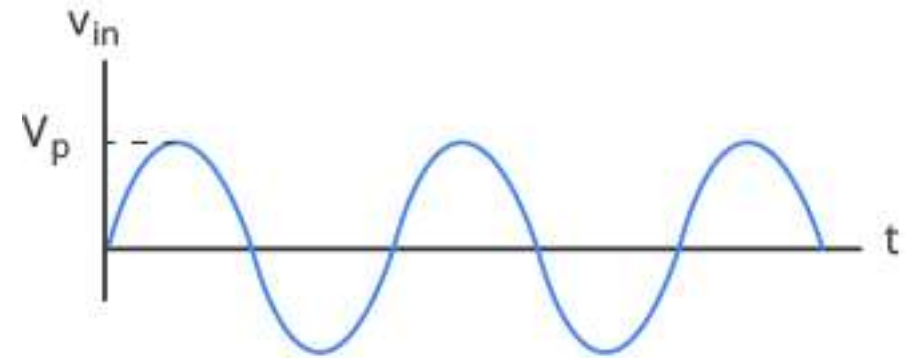
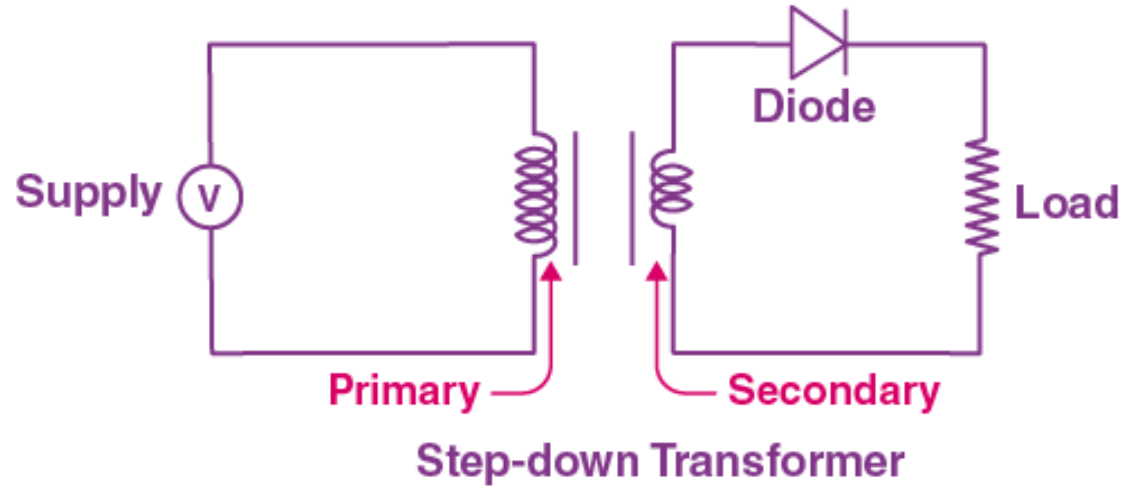
Types

1. Half wave rectifier
2. Full wave rectifier
3. Full wave bridge rectifier



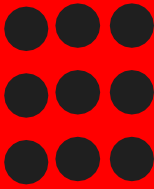
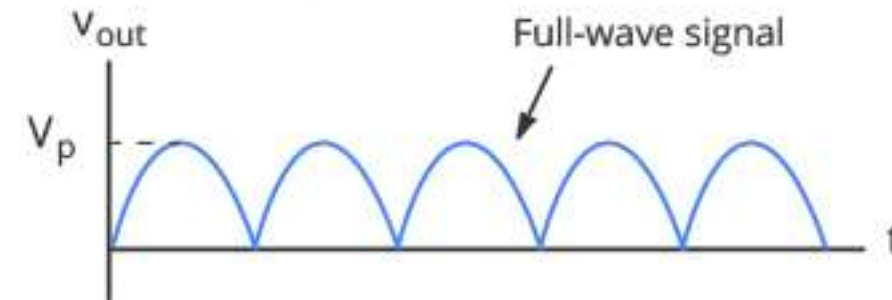
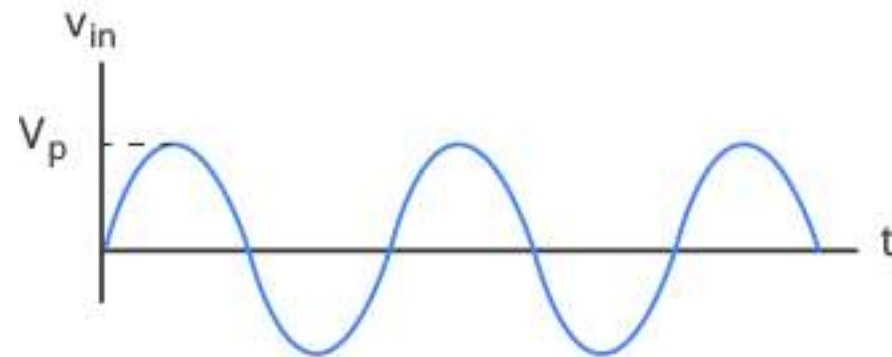
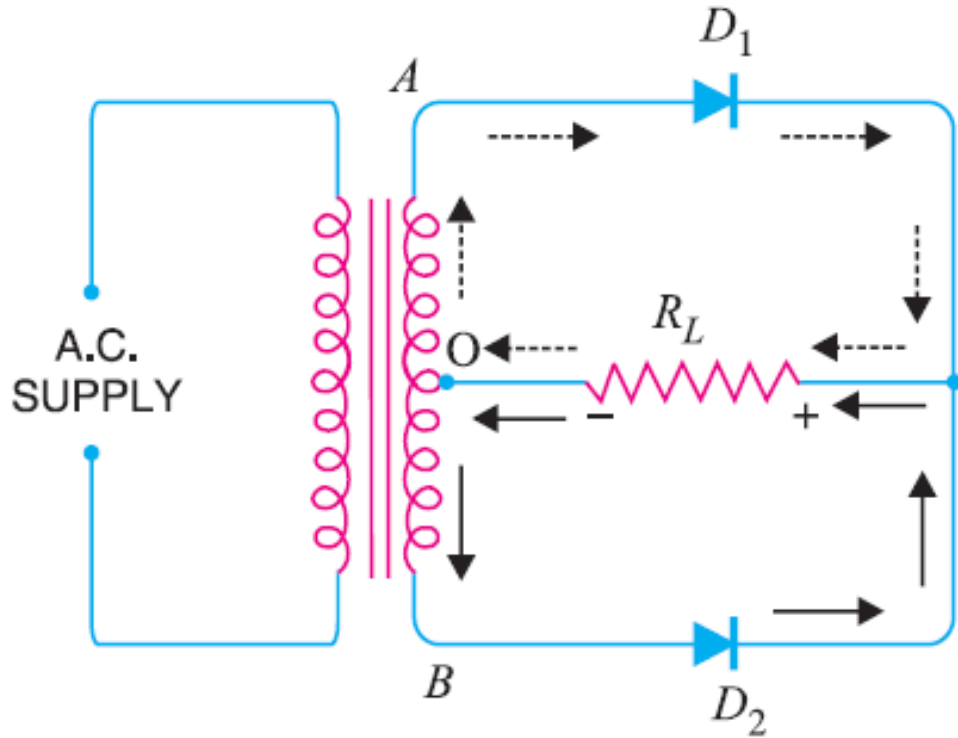


HALF WAVE RECTIFIER



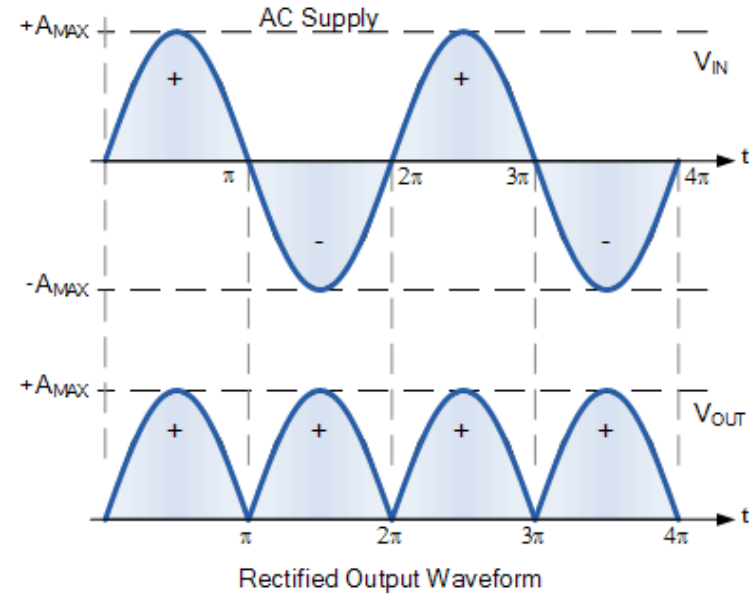
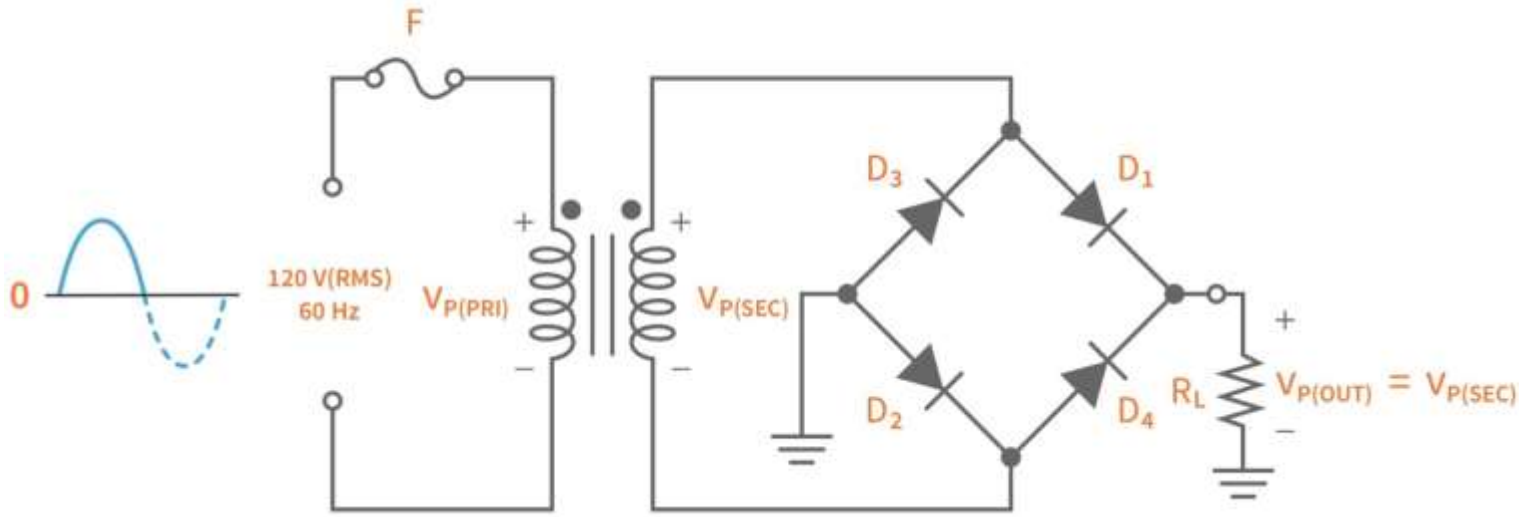


FULL WAVE RECTIFIER





FULL WAVE BRIDGE RECTIFIER

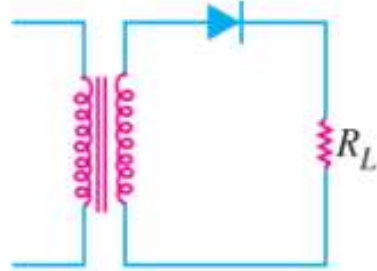




COMPARISON OF RECTIFIERS

Rectifier type : Half-wave

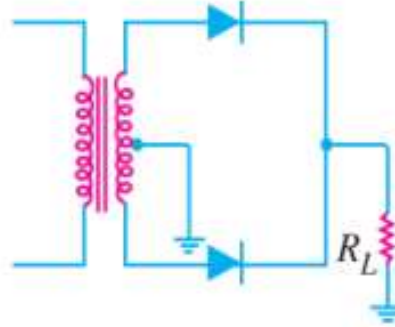
Schematic diagram:



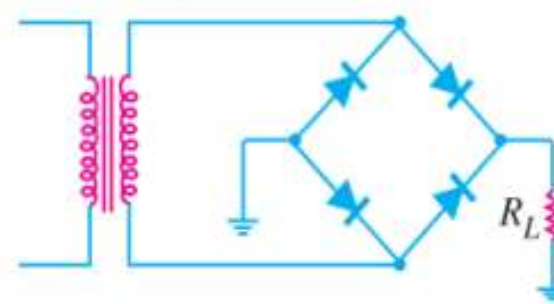
Typical output waveform:



Full-wave Centre-tap



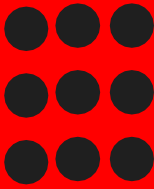
Bridge Rectifier



S. No.	Particulars	Half-wave	Centre-tap	Bridge type
1	No. of diodes	1	2	4
2	Transformer necessary	no	yes	no
3	Max. efficiency	40.6%	81.2%	81.2%
4	Ripple factor	1.21	0.48	0.48
5	Output frequency	f_{in}	$2f_{in}$	$2f_{in}$
6	Peak inverse voltage	V_m	$2V_m$	V_m



NEW BRIDGE RECTIFIER -MARKET





REFERENCES

1. Muthusubramanian R, Salivahanan S, “Basic Electrical and Electronics Engineering”, Tata McGraw Hill Publishers, (2009) - UNIT I – V
2. Bhattacharya. S.K, “Basic Electrical and Electronics Engineering”, Pearson Education , (2017) – UNIT I – IV
3. Mehta V K, Mehta Rohit, “Principles of Electrical Engineering and Electronics”, S.Chand & Company Ltd, (2010)- UNIT I and II
4. Mehta V K, Mehta Rohit, “Principles of Electronics”, S.Chand & Company Ltd, (2005)- UNIT IV and V

THANK YOU