



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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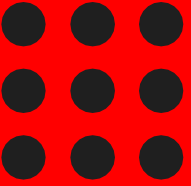
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME : 19EE101-BASIC ELECTRICAL & ELECTRONICS ENGINEERING

I YEAR /I SEMESTER

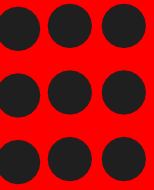
Unit 4: Analog Electronics

Topic : Diode Applications: Rectifiers



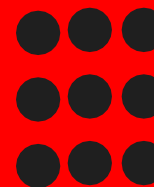


GRADUATE ATTRIBUTES





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.

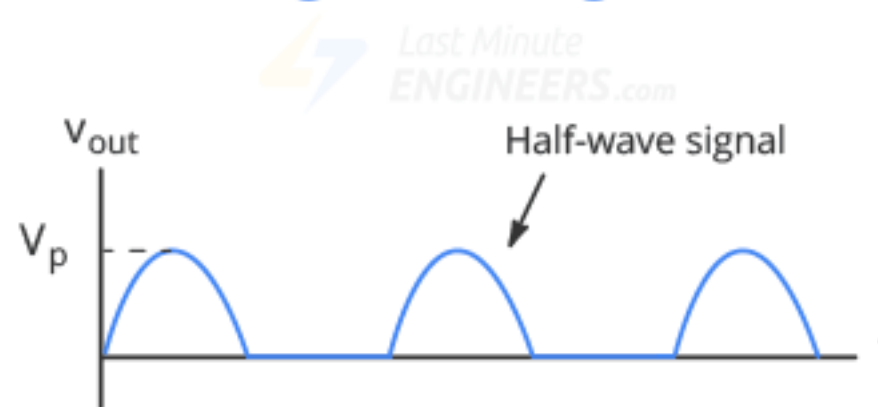
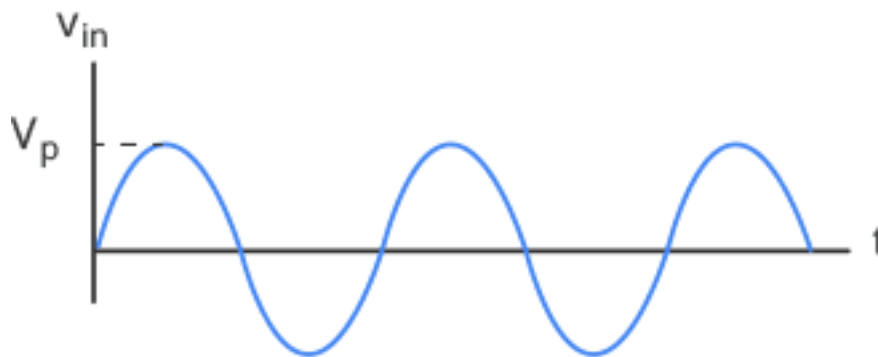
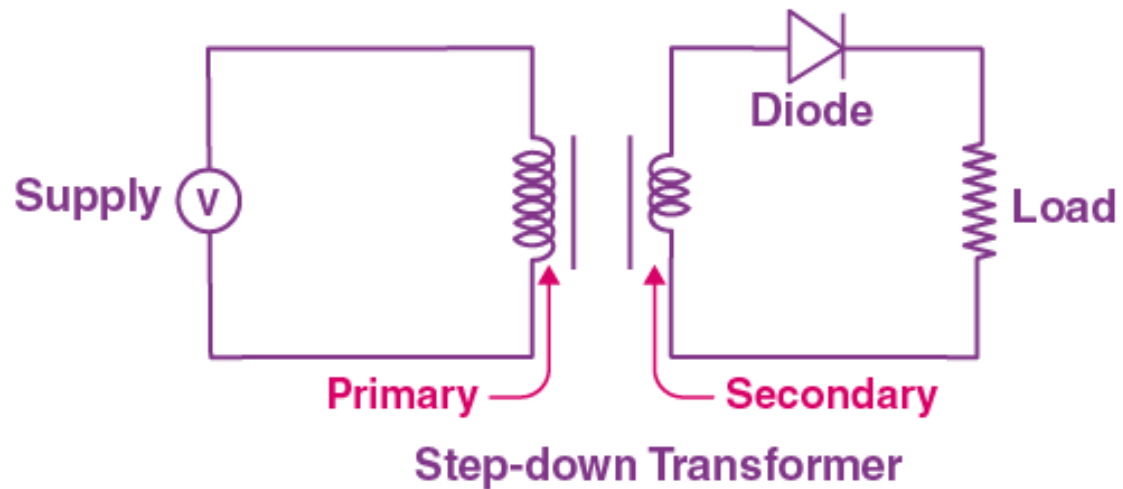
Types

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



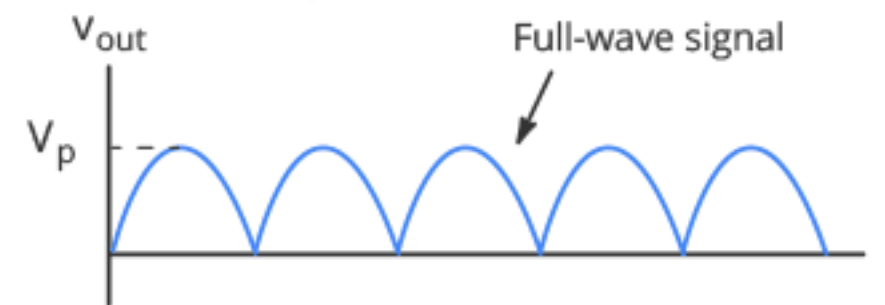
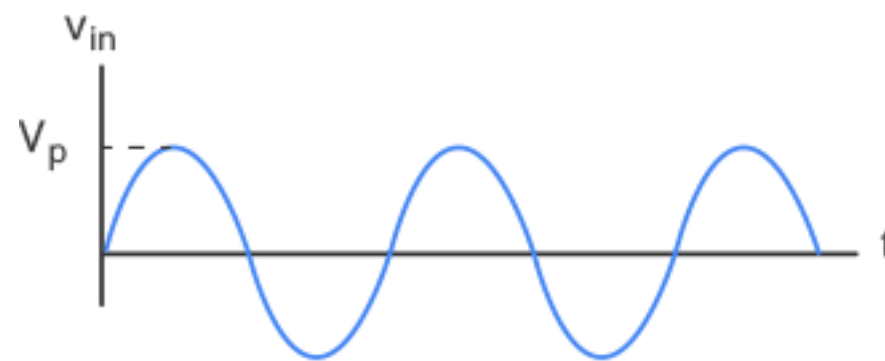
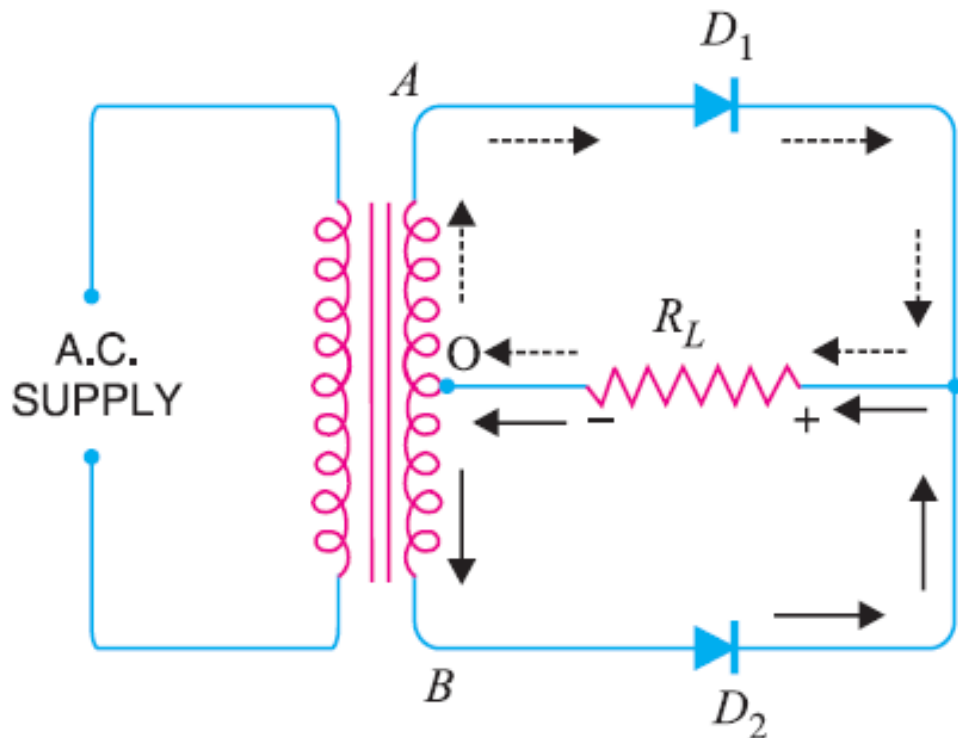


HALF WAVE RECTIFIER





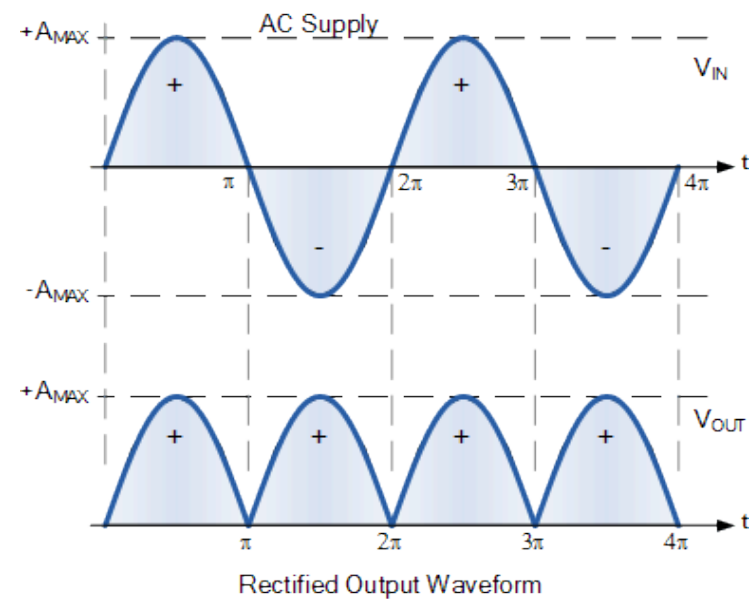
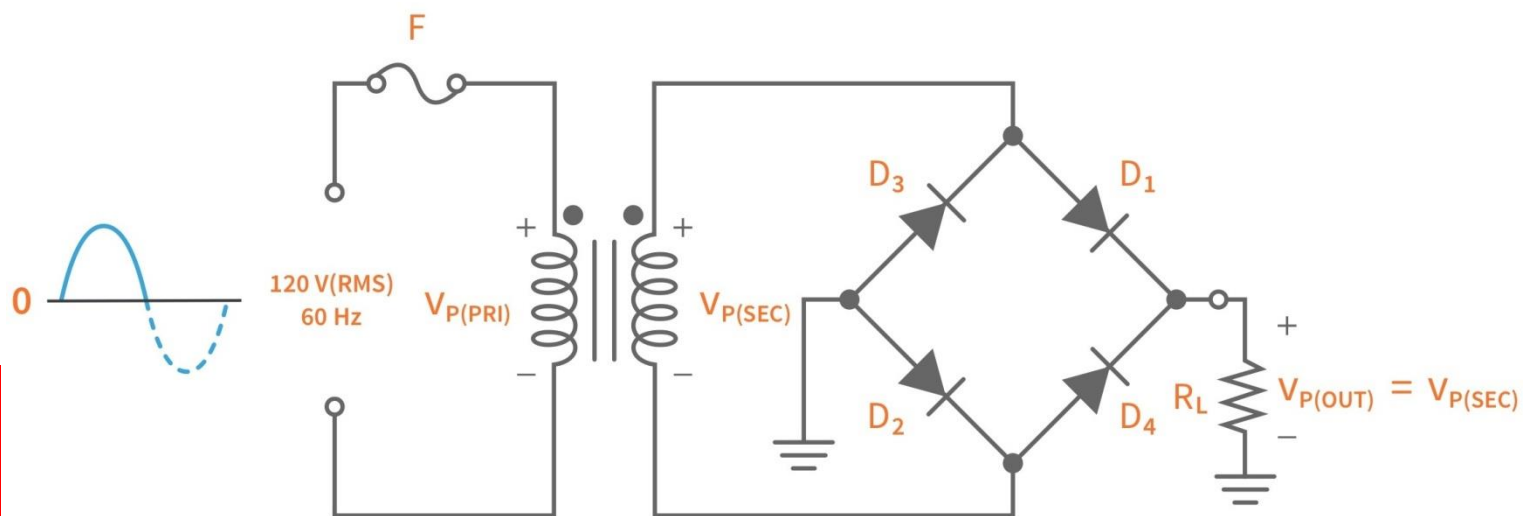
FULL WAVE RECTIFIER



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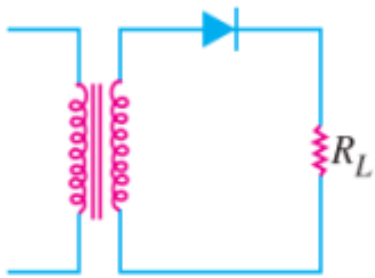
FULL WAVE BRIDGE RECTIFIER



COMPARISON OF RECTIFIERS

Rectifier type : Half-wave

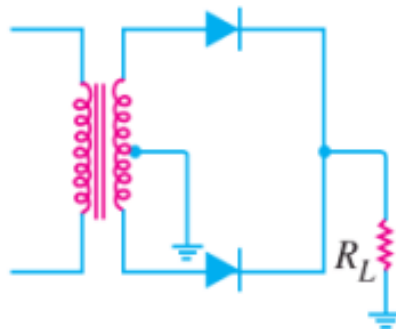
Schematic diagram:



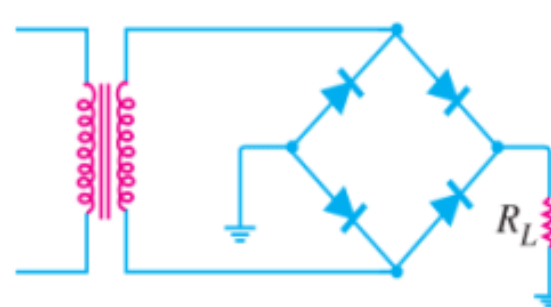
Typical output waveform:



Full-wave Centre-tap



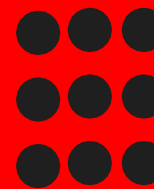
Bridge Rectifier



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

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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