



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

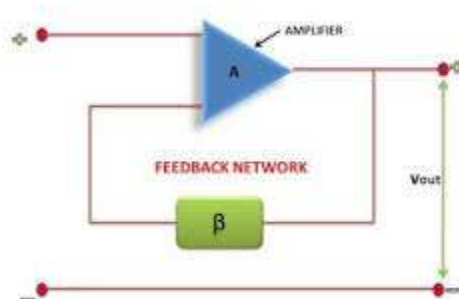
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23EET104 / ANALOG ELECTRONICS CIRCUITS I YEAR / II SEMESTER

UNIT-V: FEEDBACK AMPLIFIER & OSCILLATOR



CLASSIFICATION OF FEEDBACK AMPLIFIER

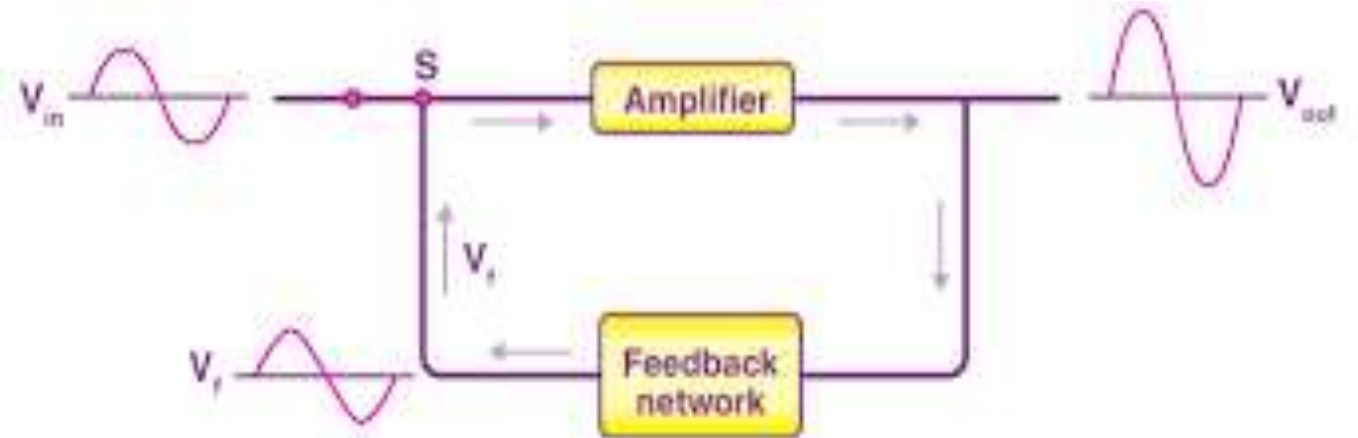


Classification of Feedback Amplifiers



There are four types of feedback,

- Voltage series feedback.
- Voltage shunt feedback.
- Current shunt feedback.
- Current series feedback



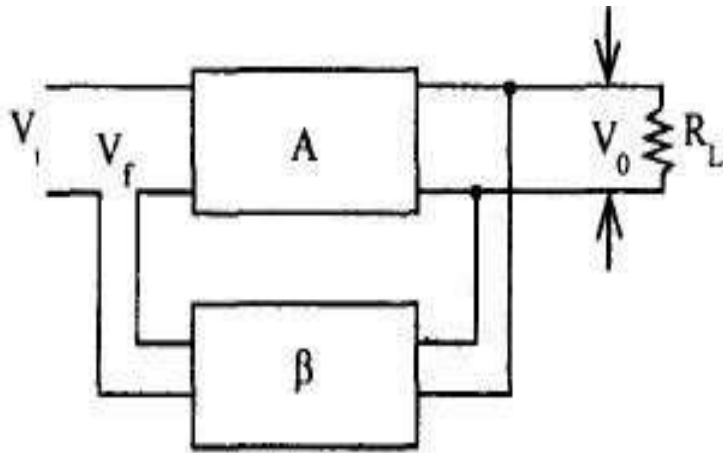


Classification of Feedback Amplifiers



$$R_{if} = R_i (1 + A\beta)$$

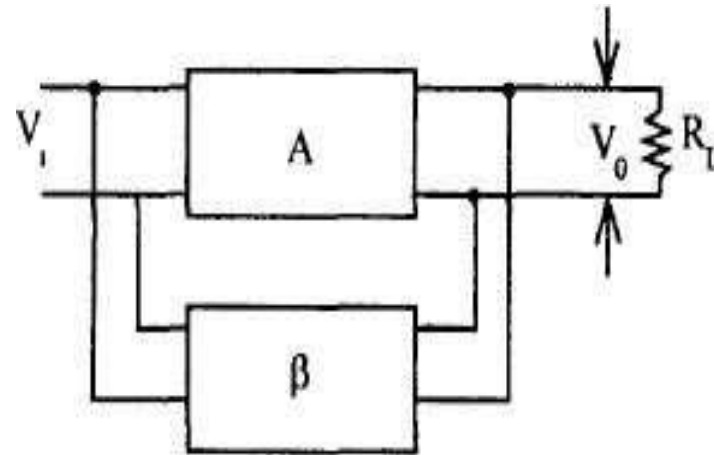
$$R_{of} = R_o / (1 + A\beta)$$



Voltage series feedback.

$$R_{if} = R_i / (1 + A\beta)$$

$$R_{of} = R_o / (1 + A\beta)$$



Voltage shunt Feedback



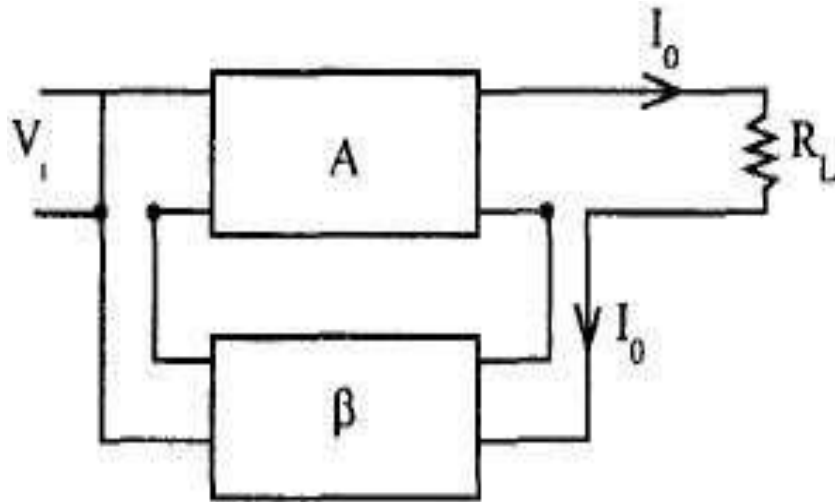


Classification of Feedback Amplifiers



$$R_{if} = R_i / (1 + A\beta)$$

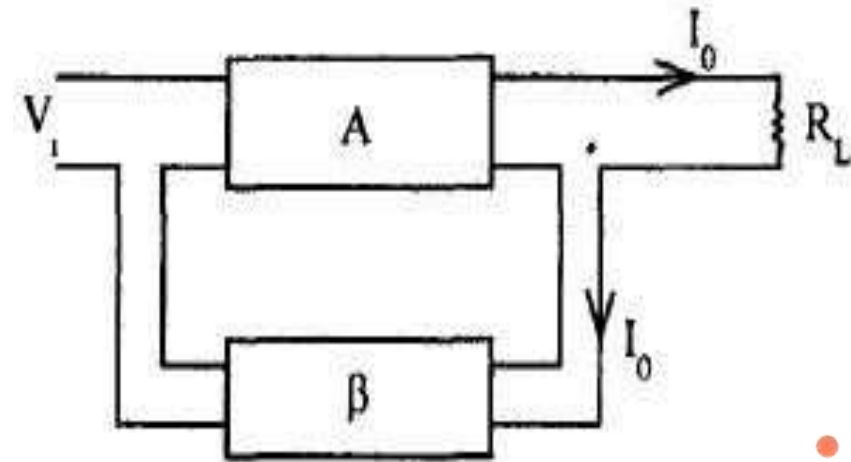
$$R_{of} = R_o (1 + A\beta)$$



Current Shunt Feedback

$$R_{if} = R_i (1 + A\beta)$$

$$R_{of} = R_o (1 + A\beta)$$



Current Series Feedback



Effect of feedback on Input Resistance



Voltage shunt Feedback

$$R_{if} = R_i / (1 + A\beta)$$

Current Shunt Feedback

$$R_{if} = R_i / (1 + A\beta)$$

Voltage series feedback.

$$R_{if} = R_i (1 + A\beta)$$

Current series Feedback

$$R_{if} = R_i (1 + A\beta)$$





Effect of feedback on Output Resistance



Voltage shunt Feedback

$$R_{of} = R_o / (1 + A\beta)$$

Current Shunt Feedback

$$R_{of} = R_o (1 + A\beta)$$

Voltage series feedback.

$$R_{of} = R_o / (1 + A\beta)$$

Current series Feedback

$$R_{of} = R_o (1 + A\beta)$$





Summary – Input R & Output R



Sl. No.	Type	R_{if}	R_{of}
1	Voltage Shunt Feedback Amplifier	$R_{if} = R_i / (1+A\beta)$	$R_{of} = R_o / (1+A\beta)$
2	Current Shunt Feedback Amplifier	$R_{if} = R_i / (1+A\beta)$	$R_{of} = R_o (1+A\beta)$
3	Voltage Series Feedback Amplifier	$R_{if} = R_i (1+A\beta)$	$R_{of} = R_o / (1+A\beta)$
4	Current Series Feedback Amplifier	$R_{if} = R_i (1+A\beta)$	$R_{of} = R_o (1+A\beta)$



Summary

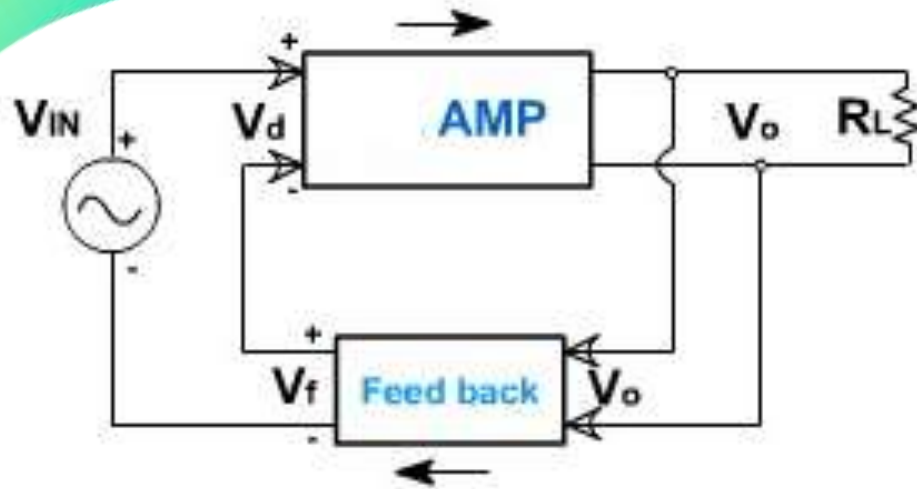


Feedback Topology	Source signal	Output signal	Input impedance	Output impedance
Voltage-series	Voltage	Voltage	Increased	Decreased
Voltage-shunt	Current	Voltage	Decreased	Decreased
Current-series	Voltage	Current	Increased	Increased
Current-shunt	Current	Current	Decreased	Increased

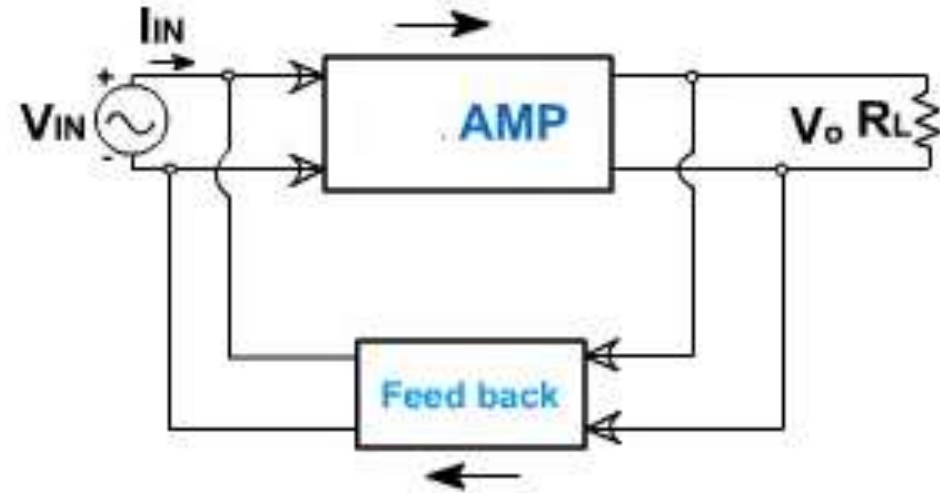




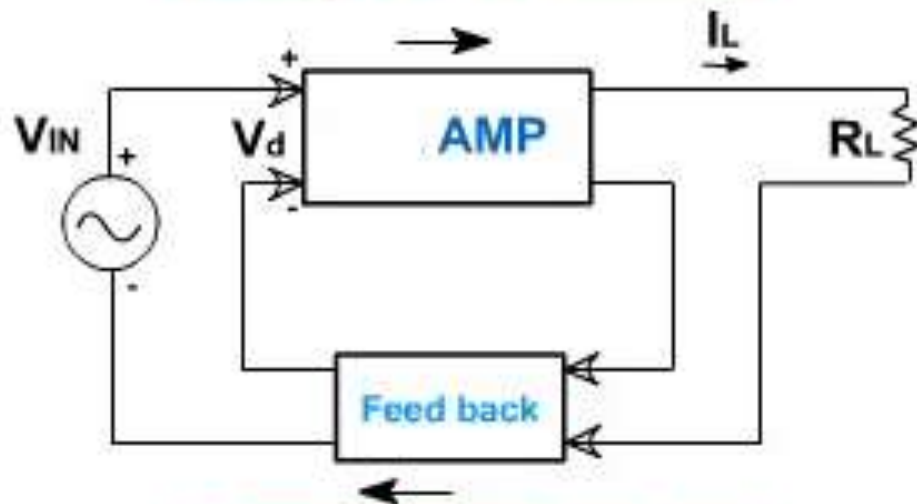
Summary



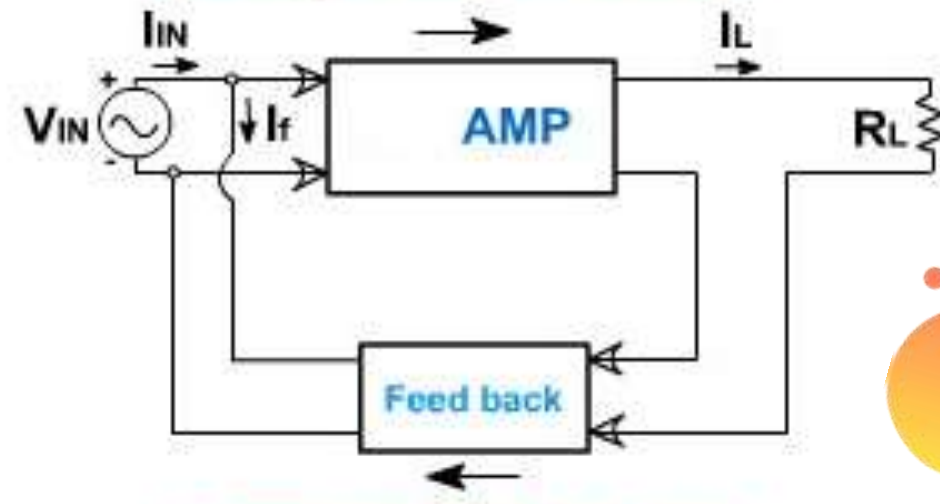
Voltage series feedback



Voltage shunt feedback



Current series feedback

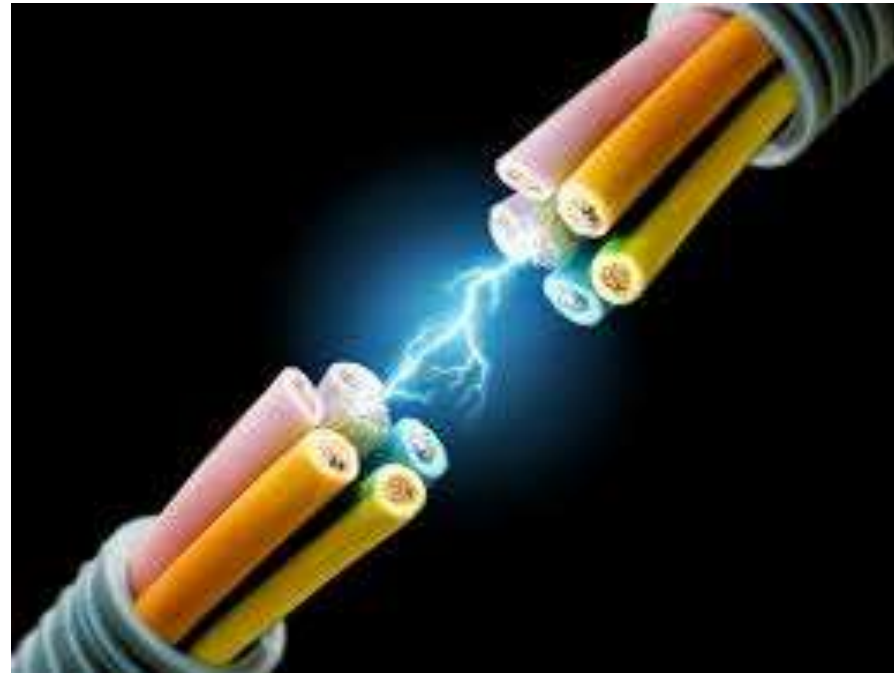


Current shunt feedback





RECAP....



...THANK YOU

