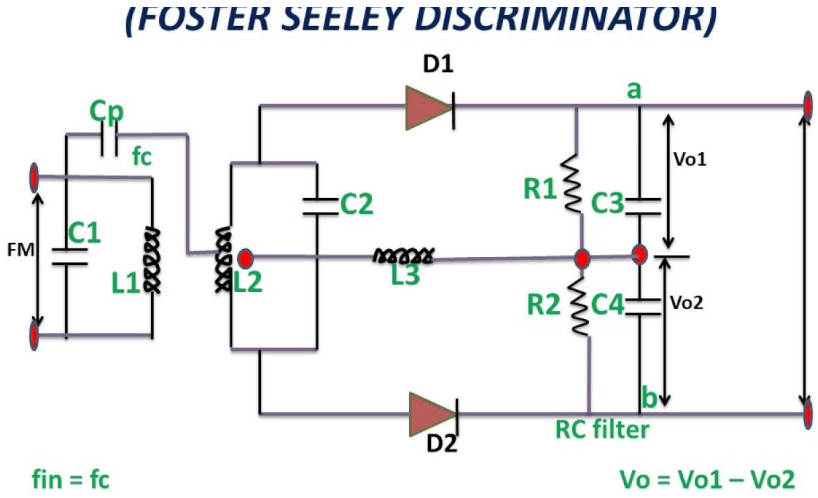
Foster Seeley discriminator

Foster seeley detector consists of a special center-tapped transformer feeding two diodes in a full wave DC rectifier circuit. When the input transformer is tuned to the signal frequency, the output of the discriminator is zero. When there is no deviation of the carrier, both halves of the center tapped transformer are balanced. As the FM signal swings in frequency above and below the carrier frequency, the balance between the two halves of the center-tapped



When an un-modulated carrier is applied at the centre frequency, both diodes conduct, to produce equal and opposite voltages across their respective load resistors. These voltages cancel each one another out at the output so that no voltage is present. As the carrier moves off to one side of the centre frequency the balance condition is destroyed, and one diode conducts more than the other. This results in the voltage across one of the resistors being larger than the other, and a resulting voltage at the output corresponding to the modulation on the incoming signal. The choke is required in the circuit to ensure that no RF signals appear at the output. The capacitors C1 and C2 provide a similar filtering function.

Advantages of Foster-Seeley FM discriminator:

1. Offers good level of performance and reasonable linearity.
2. Simple to construct using discrete components.
3. Provides higher output than the ratio detector

Disadvantages of Foster-Seeley FM discriminator:

1. Does not easily lend itself to being incorporated within an integrated circuit.
2. High cost of transformer.
3. Narrower bandwidth than the ratio detector