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Class - D II

Paper - MC

One stage R.C amplifier →

A single stage R.C. amplifier is known as when only one transistor associated with the circuit is used for amplification of a weak signal. When a common emitter base is used to collect the amplified signal it is known as the single stage CE amplifier. But,

According to Interstage coupling ~~types~~ amplifier classification is four.

- (i) R-c coupled amplifier
- (ii) Transformer coupled amplifier
- (iii) Direct coupled
- (iv) Lc coupled amplifier.

1) R-c coupled amplifier → This is most popular type of coupling because it is easily to adjust and provides an excellent audio fidelity over a wide range of frequency. It is usually employed for voltage amplification. The function (R-c coupling network is two fold). A Two stage R.C cap. coupled transistor amplifier operating in CE mode. Generally, the two identical transistors and a common power supply is used. The resistances from the biasing network and establish the quiescent (operating point) The by-pass capacitor(s) of large value so that its reactance  $\frac{1}{\omega C}$  is small enough to bypass the a.c. component of the emitter current. Hence



Only d.c. component of emitter current produces a voltage drop across  $R_e$ . Without  $C_e$ , the voltage gain of each stage would be lost. The output of the first stage amplifier is fed (or coupled) to the input of the second stage amplifier through the coupling capacitor ( $C_c$ ). This condenser  $C_c$  couples only d.c. component from first stage to the second stage and blocks D.C. component of the output of the first stage from reaching the input of the second stage.  $C_c$  is also called a blocking condenser.

The input capacitor  $C_{in}$  couples the a.c. ~~sig~~ signal voltage to the base of the first transistor. If it is not used, the internal resistance of the signal source will be in parallel to  $R_2$  and the bias voltage of the base will change. As result the operating point will shift,