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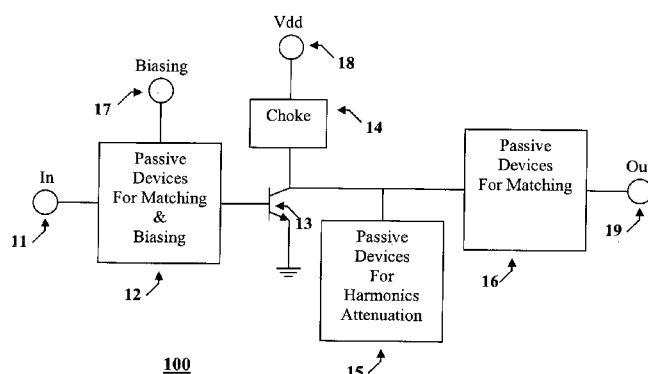
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(54) Title: POWER AMPLIFIER AND LINEARIZATION TECHNIQUES USING ACTIVE AND PASSIVE DEVICES

**FIG. 1**(57) Abstract: Designs and techniques for improving the linearity of the power amplifiers, especially of the non-linear types, operated in microwave and millimeter-wave frequency using method through purposely designed active transistors or passive devices or both, are disclosed. The techniques use the manipulation of transistors' cut-off frequencies (f_T) design, attached loaded linearization stub and characteristics of space attenuation of microwave signals individually or in combination of them. The disclosed techniques provide the advantages to compromise the performance among linearity, gain and power consumption in a wide range of power amplifier types, such as Class- AB, B, C, D, E and F in the different application scenarios.