ADJUSTABLE 3D CAPACITOR

ABSTRACT

There is a need for adjustable capacitors for use in LC or RC matching networks in micro-circuits. This has been achieved by forming a set of individual capacitors that share a common bottom electrode. The areas of the top electrodes of these individual capacitors are chosen to be in an integral ratio to one another so that they can be combined to produce any capacitance within a range of unit values. For example, if four capacitors whose areas are in the ratio of 5:2:1:1, are provided, then any capacitance in a range of from 1 to 9 can be generated, depending on how the top electrodes are connected. Such connections can be hard-wired within the final wiring level to provide a factory adjustable capacitor or they can be connected through field programmable devices to produce a field programmable capacitor. A process for manufacturing the device is also described.

FIGURE 4

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