

COIL STRUCTURE FOR GENERATING PLASMA AND SEMICONDUCTOR PROCESS DEVICE

ABSTRACT

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There is provided a coil structure for generating plasma, including at least one coil unit each including M coil groups, M being an integer greater than or equal to 4; the M coil groups have same structures and are connected in parallel with each other; each of the coil groups includes N layers of planar coils parallel to each other, N being
10 an even number greater than or equal to 4; planar coils corresponding to each layer in the M coil groups are arranged at a same layer in a one-to-one correspondence manner, and the M planar coils located at the same layer are spaced apart from each other along a circumferential direction of the planar coils and are uniformly distributed; the N
15 layers of planar coils in each of the coil groups are disposed at intervals along a direction perpendicular to planes where the planar coils are located, and are sequentially connected in series end to end; and orthographic projections of every two adjacent layers of planar coils on the respective planes where the planar coils are located are mirror-symmetrical with respect to each other. The coil structure can improve radial distribution uniformity and angular distribution uniformity of coupling
20 energy generated below the coils, and can also improve overall voltage endurance of the coils, thereby realizing high-power feeding. The present disclosure further provides a semiconductor process device.

Fig. 5