ABSTRACT

In a method of manufacturing a semiconductor device by dividing a semiconductor wafer 6, on which a plurality of semiconductor elements are formed, into individual pieces of the semiconductor elements, after thickness of a reverse face of a circuit formation face 6a is reduced by machining, a mask to determine cutting lines 31b is formed by a resist film 31a, and the semiconductor wafer 6 is divided into individual pieces of semiconductor elements 6c by conducting plasma etching on portions of the cutting lines 31b when plasma is exposed from the mask side, and then the resist film 31a is removed by plasma, and further a micro-crack layer 6b generated on the machined face is removed by plasma etching. A series of the above plasma processing is executed by the same plasma processing apparatus.