

WHAT IS CLAIMED IS:

1. A wafer processing method for dividing a wafer into a plurality of individual devices along a plurality of division lines formed on a front side of said wafer, said wafer being composed of a substrate and a functional layer formed on a front side of said substrate, said individual devices being formed from said functional layer and partitioned by said division lines, said wafer processing method comprising:

a protective tape attaching step of attaching a protective tape having an adhesive layer to a front side of said functional layer of said wafer in a condition where said adhesive layer of said protective tape is in contact with the front side of said functional layer; and

a wafer dividing step of holding said wafer processed by said protective tape attaching step on a holding surface of a chuck table in a condition where said protective tape is in contact with said holding surface, wherein said wafer dividing step includes a cut groove forming step and a laser processing step,

wherein said cut groove forming step includes using a cutting blade to form a cut groove on a back side of said substrate along each division line so that a depth of the cut groove does not reach said functional layer, thereby resulting in part of said substrate being left along each division line after performing said cut groove forming step, and

wherein said laser processing step includes applying a laser beam having an absorption wavelength to said part of said substrate left after said cut groove forming step and said functional layer of said wafer from the back side of said substrate along each division line to form a laser processed groove having a depth reaching said protective tape along each division line, thereby dividing said wafer into individual device chips corresponding to said individual devices,

wherein said protective tape is closely attached to the front side of said functional layer in said protective tape attaching step in such a manner that said adhesive layer of said protective tape comes into tight contact with said devices formed from said functional layer, so as to prevent the adhesion of debris to a front side of each device, said debris being generated from said wafer along each division line by the application of said laser beam in said wafer dividing step, and

wherein said protective tape attaching step comprises a contacting step of placing said adhesive layer of said protective tape in contact with the front side of said functional layer of said wafer, and a step of applying pressure to said protective tape, wherein said pressure applying step is performed after said contacting step.

2. The wafer processing method according to claim 1, wherein said pressure applying step comprises rolling a pressing roller on said protective tape to apply a pressure thereto.
3. The wafer processing method according to claim 1, wherein during said cut groove forming step, a lower end of the cutting blade is separated from the front side of the substrate by an amount of between 5 μm and 10 μm .
4. The wafer processing method according to claim 1, further comprising:
 - a wafer supporting step of attaching said substrate to a dicing tape supported by an annular frame, wherein said wafer supporting step is performed after said laser processing step; and
 - a protective tape peeling step of peeling off the protective tape, wherein said protective tape peeling step is performed after said wafer supporting step.
5. The wafer processing method according to claim 4, wherein the debris generated during said wafer dividing step are adhered to the protective tape that has been peeled off.