ABSTRACT

A conductive polycrystalline diamond film having specific resistance of at least 1×10^{-4} Ωm and less than 1×10^{3} Ωm, whose film thickness is in the range of at least 0.1 μm and not more than 500 μm, is film-formed by vapor-phase synthesis on a surface employed for pressure bonding, a surface opposite to this surface or at least two side surfaces intersecting with these surfaces on a substrate.