CLAIMS

1. A manufacturing method of a substrate for a semiconductor element, the manufacturing method comprising: a first processstep and a second processstep, wherein

the first processstep comprisinges the steps of:

forming a first photosensitive resin layer on a first surface of a metal plate;

providing a second photosensitive resin layer on a second surface different from the first surface of the metal plate;

forming a first resist pattern on the first surface of the metal plate, for forming a connection post, by selectively performing an exposure to the first photosensitive resin layer according to a first pattern, and by developing the first photosensitive resin layer, the first resist pattern comprising the first photosensitive resin layer which was developed; and

forming a second resist pattern on the second surface of the metal plate, for forming a wiring pattern, by selectively performing an exposure to the second photosensitive resin layer according to a second pattern, and by developing the second photosensitive resin layer, the second resist pattern comprising the second photosensitive resin layer which was developed; and wherein

the second processstep comprisinges the steps of:

performing an etching of the first surface of the metal plate from the first surface to a midway of the metal plate, and forming the connection post on the first surface;

filling in a premold liquid resin to the first surface which was etched;

forming a premold resin layer by hardening the premold liquid resin;

performing a grinding operation on the first surface, and exposing an upper bottom surface of the connection post from the premold resin layer; and

performing an etching of the second surface of the metal plate from the second surface, and forming the wiring pattern, wherein

a groove structure is formed at a peripheral of a pattern of a main body of the substrate by going through the first step and the second step, wherein a depth of the groove structure is up to an intermediate part in a thickness direction of the metal plate.

2. The manufacturing method of a substrate for a semiconductor element according to claim 1, wherein the groove structure is connected and surrounds the pattern of the main body of the substrate.

3. A semiconductor device comprising:

a semiconductor element substrate having a first surface and a second surface different from the first surface; and

a semiconductor element mounted on the second surface of the semiconductor element substrate, ~~wherein~~

the semiconductor element substrate comprisinges:

~~a metal plate comprising a first surface and a second surface different from the first surface;~~

a connection post placed on the first surface of the semiconductor element substrate~~metal plate;~~,

a wiring pattern placed on the second surface of the semiconductor element substrate~~metal plate,~~; and

a premold resin layer placed on a portion of the first surface of the semiconductor element substrate~~metal plate~~ where the connection post is not placed, ~~wherein~~

the connection post having an upper bottom surface ~~of the connection post is~~ exposed from the premold resin layer~~,~~ and

a metal wire makinges an electrical connection between the semiconductor element substrate and the semiconductor element.