

## CIRCUIT BOARD AND MANUFACTURING METHOD THEREOF

## ABSTRACT

The present invention provides a circuit board in which generation of a white-blushed mark which is partially produced at a blank portion having no wiring pattern at a rim of an opening portion is suppressed when forming the opening portion by punching, and a manufacturing method thereof in the circuit board in which a portion where a wiring pattern is dense and the blank portion having no wiring pattern are present at a rim of a central part of the circuit board.

There is provided a circuit board having an opening portion formed at the center of the circuit board by punching, the circuit board having a structure where a dummy electrode pattern connected with a rim of the opening portion is provided besides a wiring pattern which is connected with the opening portion at the rim of the opening portion and used for wire bonding. It is preferable to provide the dummy electrode pattern having a size satisfying  $S/d \geq 0.33$ , where  $S$  is an area of the dummy electrode pattern and  $d$  is a sum total of lengths of sides where the dummy electrode pattern is connected with the rim of the opening portion.

**Figure 2**