

WHAT IS THE ROLE OF LASER CUTTING MACHINES IN CHIP MANUFACTURING?

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Lasers are one of the four major inventions of the 20th century and occupy an important position in wafer processing. The chip developed by this invention is laser cut as the core raw material, which fully meets the requirements of wafer cutting and can effectively avoid the problem of abrasive wheel cutting.

1. Non-contact processing: laser processing only requires the laser beam to be in contact with the processed part, the cut part will not be affected by the cutting force and will not damage the surface of the processed material.
2. High processing accuracy, small thermal impact: pulse laser instantaneous power, high energy density, low average power, processing can be completed instantly, small thermal impact range, high precision requirements, small heated surface.
3. High processing efficiency, good economic benefits: the processing efficiency of the laser is usually several times that of mechanical processing, no consumption of materials and no pollution. Semiconductor chip laser invisible cutting technology is a new laser cutting technology, with the advantages of fast cutting speed, no dust, cutting no dust, no loss to the substrate, small cutting path, completely dry, etc.

It is based on the basic principle of focusing a short-pulse laser beam on the surface of the material to form a calcium layer in the middle of the material, which is then separated from the chip by external pressure.

Laser cutting equipment is widely used in the semiconductor industry. In recent years, laser equipment has developed rapidly in China. In recent years, domestic chip applications have shown diversified development. The growing demand for chips in industries such as smart machines, Internet of Things, automotive electronics, 5G and artificial intelligence has put forward higher requirements on the quality and reliability of chips. In the future, the domestic semiconductor market will bring huge development opportunities for domestic equipment.