

Silicon wafer laser dicing and scribing



Silicon wafer laser dicing and scribing, Picosecond laser is a high throughput, cost effective and simple way to effect the scribing with accuracy and long term reliability.

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Product Description

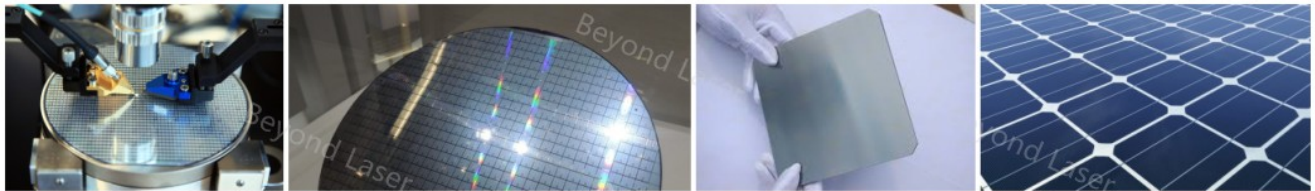
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Copper laminate multi-layer materials singulation

Copper laminate wafers with multi-layers of different materials with varying hardness and density is difficult to singulate cleanly. With the drive towards smaller form factor the task becomes more complex. Using lasers becomes an attractive option. However previously charring and cycle time were issues in this laser cutting process. With the advent of new types of lasers and Beyond Laser technological expertise we have solved the problem.

Bare wafer laser scribing

Laser can also be used to scribe silicon wafer. Scribing causes partial cut lines on the wafer. This lines introduces regions of weakness. This is usually followed by a mechanical breaking procedure to produce silicon rectangular tiles for subsequent operations. A mechanical break will follow allowing the scribing line offering the least path of resistance. The silicon wafer laser cutting is a high throughput, cost effective and simple way to effect the scribing with accuracy and long term reliability.



Industry application

Sapphire & glass cover plate, optical glass, semiconductor packaging chip, sapphire & silicon wafer & ceramic substrate and other brittle materials, heat-sensitive polymer & inorganic materials, micro-drilling, cutting.

01 Mobile phone cover plate and optical lens contour cutting;

02 Fingerprint identification chip cutting;

03 New flexible display or fine electronic circuit etching & cutting for organic & inorganic materials;

04 Liquid crystal panel cutting;

To build with your heart
Cost-effective
laser equipment

- ✓ Direct two production bases
- ✓ Supporting automatic customization
- ✓ Safe packing
- ✓ On-site training and training sessions
- ✓ Original factory assembly
- ✓ Eu CE certification

Product introduction



01

Short wavelength picosecond laser, excellent performance, good machining effect;

Short-wave laser



02

Direct cutting, automatic separation of waste and finished products, comprehensive yield up to 95%;

Automatic points material



03

Minimum aperture up to 30um, maximum diameter to depth ratio up to 1:20;

Cutting aperture



04

Edge breakage size can be less than 10um;

Small side damage



05

It can process irregular shapes such as circles, ellipses and polygons with high machining accuracy and long-term stability.

Processing shape

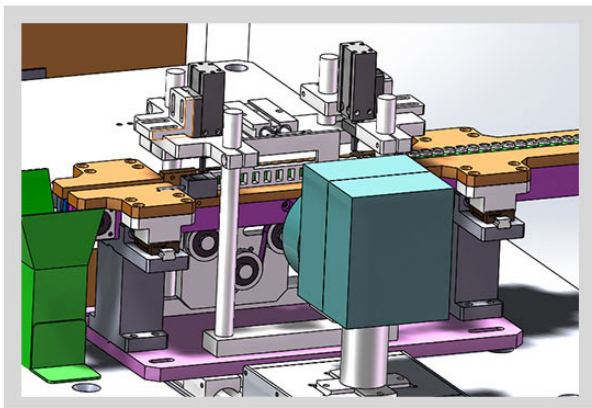


06

Marble platform, stable mechanical structure;

Work platform

Model principle



Peak power in the movement of the scanning galvanometer laser beam reflected by the flat field under scanning lens to focus on the surface of brittle material, control of laser beam scanning galvanometer is repeated many times in sports, ablative material surface gradually, material is high density peak power laser transient heating rapid rise to plasma gasification temperature, make the material by laser ablation and gradually from the material surface in the form of gas escape, so as to realize the cut through separation of materials.

Technical parameters

Laser type	355、532、1064nm optional	PLC controller	Panasonic
Cooling way	Constant temperature water,	Vacuum system	Vacuum generator
Laser power	10~100W	Compressed air pressure	≥0.6MPa
Beam quality	M ² <1.3	Clean room grade	10000
Processing speed	100~1500mm/s adjustable	The ground bearing	2T/m ²
Machine tool structure	gantry	Protection of nitrogen	High purity nitrogen
Focusing mode & processing head number	Flat field focusing mirror & double head	Positioning accuracy of moving platform	≤±3μm
Minimum focal spot diameter	Φ15μm	Laser machining & platform control	Strongsoft, Strongsmart
The smallest side damage	15μm	CCD visual positioning software	AISYS Vision
Maximum working material thickness	1mm	CCD visual positioning accuracy	≤±3μm<1.3
Maximum working material thickness	250mm×250mm, ±5μm<1.3	Dust removal & dust collection system	Three-phase electric fan
Number & type of moving axes of machine tool	At most 8 axes, X, Y, Z, &15	Power supply & voltage regulator	220V\380V,5KW
Maximum stroke & speed of platform	650mm×450mm/800mm/s	Process file import format	Dxf, Plt, DWG, Gebar
Repeat accuracy of moving platform	≤±1μm	Automatic loading and unloading system	X\Z axis + movable loading and unloading platform

Customer & Feedback

Company Introduction

Send us mail

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