Title (en)

LASER MACHINING METHOD

Title (de)

LASERBEARBEITUNGSVERFAHREN

Title (fr)

PROCEDE DE TRAITEMENT LASER

Publication

EP 1480780 A1 20041201 (DE)

Application

EP 03709643 A 20030224

Priority

- DE 0300579 W 20030224
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Abstract (en)

[origin: WO03074224A1] The invention relates to a laser machining method for rapidly drilling holes in dielectric substrates (6). A Q-switched CO2 laser is used as a laser light source whereby generating a pulsed laser beam (4) with a pulse repetition frequency greater 50 kHz, with pulse durations shorter than 200 ns and with an energy per laser pulse of at least 10-4 joules. The laser beam (4) is directed onto substrate (6) to be machined by means of a diverting unit. The cited parameters that characterize the laser beam (4) ensure both a high production rate of drilled holes (5) as well as a high hole quality. For example, 500 holes per second can be drilled in a 0.4 mm-thick LCP substrate, whereby the shape of the drilled holes is approximately cylindrical or conical. The high production rate and the simultaneously high hole quality are a consequence of the selected wavelength, the short pulse duration, the high repetition rate, and of the pulse energy which is high compared to that of conventional laser machining devices used for manufacturing electronics.

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B23K 26/0624 (2015.10 - EP US); **B23K 26/38** (2013.01 - KR); **B23K 26/389** (2015.10 - EP US); B23K 2101/42 (2018.07 - EP US); H05K 3/0032 (2013.01 - EP US)

Citation (search report)

See references of WO 03074224A1

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DOCDB simple family (publication)

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