

Title (en)  
CIRCLE LASER TREPANNING

Title (de)  
KREISHOHLBOHREN MITTELS LASER

Title (fr)  
TREPANAGE LASER CIRCULAIRE

Publication  
**EP 1385666 A1 20040204 (EN)**

Application  
**EP 02762016 A 20020411**

Priority  
• US 0211032 W 20020411  
• US 28285201 P 20010411

Abstract (en)  
[origin: WO02083355A1] Vias (12) with substantially straight walls and no undercut regions at the bottom can be formed in a laminated substrate (10) by combining percussion drilling and trepanning drilling techniques and using different types of lasers. The top copper foil (13) of the laminated substrate (10) is first cut through, along the boundary of the via (12) to be drilled, to form a peripheral channel. This is accomplished by trepanning drilling using a UV laser (21). Then, an IR laser is applied to ablate the dielectric material (14) inside the via (12). During this step, a cutoff copper piece (40), which remains in the central regions of the via (12) after the trepanning drilling, will be removed as well. The IR laser reflects off a copper capture pad (131) at the bottom of the via (12), effectively cleaning the capture pad (131) surface for later plating processes.

IPC 1-7  
**B23K 26/36**

IPC 8 full level  
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CPC (source: EP)  
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