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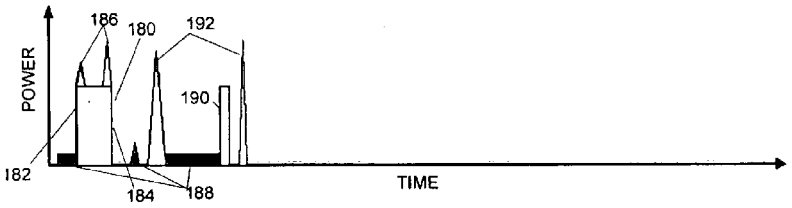


Fig 5

(57) Abstract: Improved method and apparatus for drilling vias (30) in an electronic substrate with laser pulses (160, 170, 172, 180, 190, 192) use one or more tailored pulses (160, 180) to reduce debris remaining in the via while maintaining system throughput and avoiding damage to the substrate. A tailored pulse is a laser pulse that features a power spike (166, 186) having a peak power 10% higher than the average power of the pulse and lasting less than 50% of the duration of the pulse. Methods and apparatuses for creating tailored pulses by slicing longer duration pulses are shown.

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