

Application example

## Connections on delicate ceramic printed circuit boards

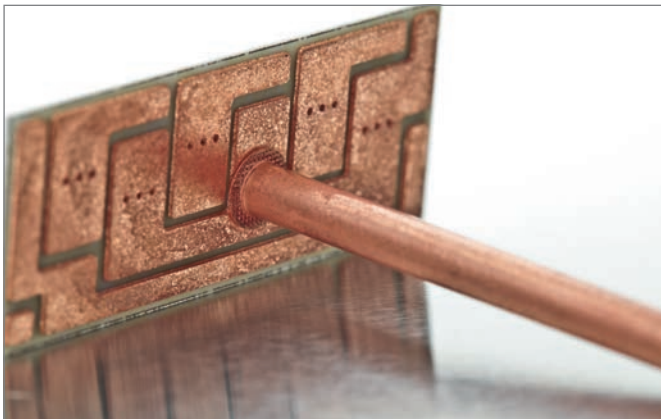
PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SIEVING



### Task

A sensitive ceramic circuit board with copper conductor tracks frequently used for power electronics/IGBT needs to be contacted with a high pin. The electrical contact resistance must be as low as possible and the ceramic must not be damaged. Not even the tiniest cracks are permitted.

### Solution

With torsional SONIQTWIST® ultrasonic welding technology, you can reliably weld high quantities of these contacts in a fully automatic process. The pin is designed to have a collar, the point to which the sonotrode can transfer its torsional vibrations. Ultrasonics enables metals to be welded together with very low electrical contact resistance, resulting in very few losses.

### Advantages of this configuration

With torsional SONIQTWIST® technology, the ultrasonic vibrations are not introduced vertically into the component, but tangentially, i.e. the sensitive ceramic is hardly exposed to any vibrations and is therefore not damaged. Other brittle, vibration-sensitive materials such as coated glass, for example, can also be reliably combined to other materials using torsional technology. The 40 mm pin cannot be welded using conventional, linear ultrasonics. The only way to do it is with SONIQTWIST® technology.



The application was welded using torsional SONIQTWIST® technology. The ultrasonic welding components were integrated into a special-purpose system.