

Application example

Electrical connections to power electronics modules

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SIEVING



Task

The Cu-plated ceramic printed assembly board in power electronics modules have to be contacted with copper connections so that electricity is conducted as best as possible. The numerous connection points change with the various types of power electronics. The sensitive ceramic must not be damaged during the contacting process and the process data must be able to be analyzed statistically if necessary.

Solution

This application can be optimally resolved with torsional SONIQTWIST® ultrasonic welding technology as an economical connection method. The relevant components, like the SONIQTWIST® weld head, MAG generator and controller, are integrated into an x/y coordinates system and the individual welding positions can be accessed and welded by the servo motor using pre-defined coordinates.

Advantages of this configuration

Thanks to the high ultrasonic frequency of 20 kHz, the oxide layer is broken open at the connection points and a firmly bonded weld is created with very low electrical contact resistance. When it comes to accessing welding points, torsional technology offers the best conditions for integrating components into an x/y special-purpose system. The MAG generator automatically adapts its oscillating behavior to the individual weld points in order to ensure consistent and high quality standards when combined with the quality monitoring options offered by the process controller.



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