

Focus on: Electronics production

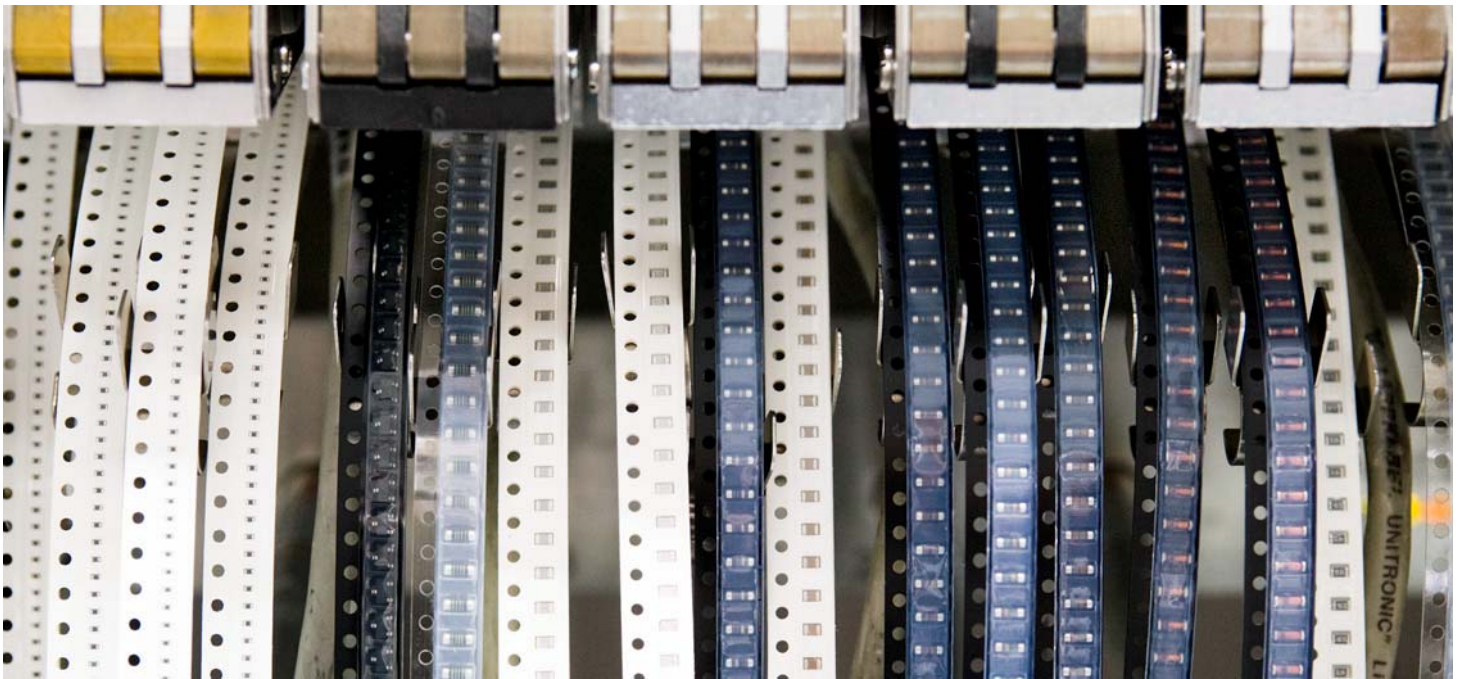
Basic information

- rooms and employees
 - EGB-conforming production (workplaces, floor, wrist grounding, ESD monitoring)
 - clean rooms
 - trained personnel
- quality and environmental management
 - ISO 9001:2008, ISO 14001:2004, EN 9100:2003, ISO 13485:2003, ISO/TS 16949:2009 certification
 - detection of all populated printed circuit boards using serial number barcodes (traceability)
 - detection and evaluation in the quality data management system
 - Continuous process monitoring and control
- production volume and production capacity
 - a total of approx. 3 million modules per year
 - approx. 3,200 different modules per year
 - production of batch sizes of 1 and up
 - prototypes and small batch production as well as industrial mass production
 - insertion capacity per year: SMD: approx. 250 million modules, THT: approx. 20 million modules
- printed circuit boards (PCB)
 - tempering of all circuit boards (excluding chem. SN)
 - PCB washing system
 - circuit board cutter for scribed boards and milled boards (1 mm minimum distance between the component and line; 2.4 mm milling diameter)
- optical inspection / AOI (automatic optical inspection)
 - 7 Viscom AOI systems
 - all FBGs are optically inspected according to IPC-A-610 class 3
 - initial sample test for new projects
 - series initial sample test for each production lot
 - 7 Viscom AOI systems

- finishing
 - painting of components in series
 - dip finishing (KC coating system)
 - spray finishing (PVA coating line)
 - drying oven
 - thin-coat finishing
 - thick-coat finishing
 - standard-paint: Peters SL1309N
 - silicone paints possible
 - grouting
 - UV curing
 - bonding

SMD production

- paste printing
 - semi- and fully-automated inline paste printer including mask cleaning
 - min. print format size 70 x 60 mm², max. 600 x 450 mm²
 - lasered high-grade steel masks
 - automatic optical mask inspection
 - quick-clamp frames for even clamping
 - ProFlow system for fewer mask cleaning cycles
 - ultrasonic washing system for mask cleaning
 - eutectic paste, class 3 / class 4 possible; fine-pitch paste up to a grid of 0.4 mm
- bonding
 - starting with chip 0603
 - dispenser
standard glue: Loctite 3609
 - glue pressure (DEK)
standard glue: Amicon D125F3
- components
 - processing of cutting-edge modules:
 - chip up to 0201 (0.5 x 0.25 mm²)
 - fine-pitch insertion up to a 0.4 mm grid (in series)



- μ BGA up to a grid of 0.35 mm
- 0.3 mm minimum distance between components
- mounting
 - 21 SMD insertion machines (Siplace X3, X4, HF3, F3, F4, S20, S15, CF, CS, MS128, MS90)
 - inline operation
- reflow soldering
 - individual solder profile design for each component and component side
 - 8 Nitrogen wave soldering systems
 - full convection oven
 - 460 mm maximum reflow solder width
 - optical control before and after reflow soldering
- vapor-phase soldering
 - 1 inline vapor-phase soldering system
- repair
 - SMD and BGA repair stations
 - BGA reballing
- wave soldering
 - 7 Nitrogen wave soldering systems
 - max. 440 x 390 mm² PCB size
 - different sequential soldering programs possible with bar-codes
 - 2 mm minimum distance between pins and the next component
 - Sn63Pb37-tin-solder and Sn96,5Ag3Cu0,5
 - partial soldering with soldering masks
 - selective wave soldering
 - 95 x 95 mm² min. and 350 x 350 mm² max. PCB size
 - 4 mm minimum distance between soldering side and component
 - automatic point soldering for a grid up to 2.0 mm
 - quickly following optical inspection
- process monitoring
 - all production processes and all essential process parameters e. g.
 - soldering profile
 - wave height
 - soldering bath temperature
 - regular tin analysis
 - residual oxygen content
- mounting
 - blind rivet technology with riveter machine, riveter aperture 2.5 mm²
 - force fitting of solder pins

Wired production

- Component preparation: automatic cutting, bending, and beading
- THT mounting
 - 30 semi-automatic insertion tables from Royonic, Jordan, Heeb
 - manual mounting workplaces

Contact

TQ-Group
 Gut Delling | Mühlstraße 2 | 82229 Seefeld | Germany
 Phone +49 8153 9308-0 | Fax +49 8153 4223
info@tq-group.com | www.tq-group.com