

## Handling Notes for Quartz Crystals

### Lead cutting for through hole versions:

One sensitive part in through hole crystals is the glass isolator section. Mechanical stress during lead bending or lead cutting can create micro cracks in the glass. The wire must be mechanically fixed between the bending or cutting point and the glass area. Do not cut or bend the wire at less than 3.0 mm distance from the base plate. Do not solder the crystal housing, use rubber glue or SMD clips to fix the housing.

### Soldering:

All through hole crystals are suitable for the standard wave soldering lines, not higher than 260°C for 10 seconds. SMD versions can be used for reflow soldering versions according to our soldering conditions which will be found on our relevant datasheets. If soldering processes are used with higher temperatures (lead free soldering) or other soldering methods please contact us. The crystal frequency can change by a few ppm after the soldering process. The change will recover after a few hours or days without any damages.

### Cleaning:

Crystal can be cleaned with conventional cleaning methods. Ultrasonic cleaning is acceptable up to 20KHz. Higher frequencies can destroy the crystal blank. The ultrasonic conditions can change according to different pc-boards sizes and weights. Cleaning tests from the customer side will then avoid any further damages.

### Storage conditions:

Standard Storage Temperature: 25±5 °C  
 humidity: 60±15%RH

General storage temperature range (if not otherwise specified)  
 -40°C to +85°C

### Shock Conditions:

1.500G/0.5 ms, half sine, three axis

### Insulation Resistance:

All our MHz-Crystals are 500M Ohm at 100V DC

### Oscillation Circuit Design Precautions:

Parabolic Coefficient

