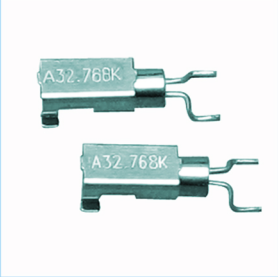
www.aeccrystal.com

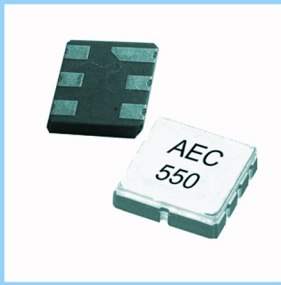
Abundance Enterprise Company

AEC

Crystal Resonator
Tuning Fork

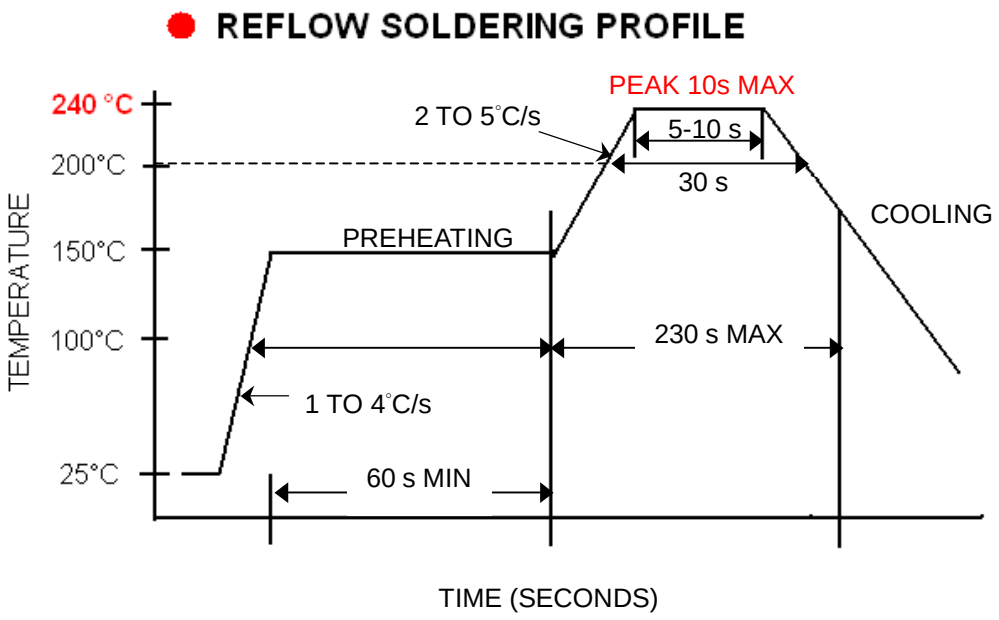


User Guide



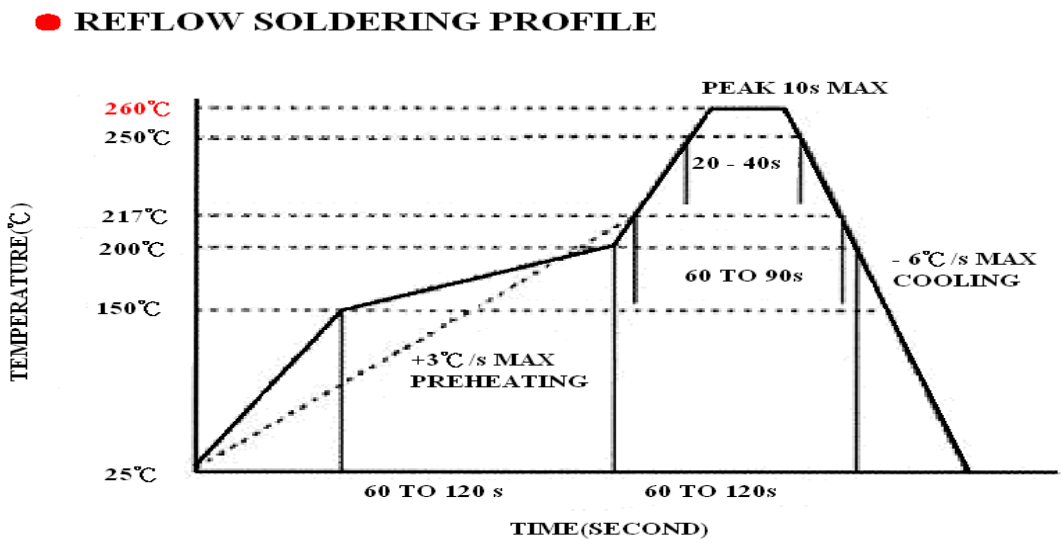
AEC Product Guideline

The following instructions and information are provided for the purpose of having the user understand the proper way to process our crystal products to prevent problem prior to use and enhance the reliability of the equipment to which they are applied.

NO	PROCESS INSTRUCTIONS
1	**When dropped by mistake**
	The Crystal units are designed and manufactured to resist physical shocks. However, when the crystal units are subjected to excessive impact such as being dropped onto the floor or giving shocks during processing, need to make user its satisfactory performance before using it.
2.	**Soldering**
	2.1 Lead type products
	Leads wires should be soldered within 3 seconds with the soldering iron heated to a temperature no higher than 350℃ / 3” In soldering –dip processing, the leads should be soldered within 10 seconds with a temperature no higher than 260℃ / 5”. Mounting in upright is recommendable to prevent the heat conduction directly to the body of the crystal unit.
	2.2 SMD Type products
	2.2.1 The Reflow Soldering Profile is recommended for ZM206 /ZM206K /ZM309 / ZMR206A /ZMR206B/ ZMR206KS /ZMR206KT/ZMR310 ● **Lead Free** 

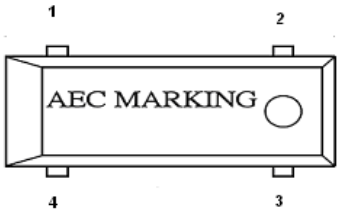
2.2.2 The Reflow Soldering is recommended for ZM206E/ZM206KE/ZM309E / ZMR206AE /ZMR206BE/ ZMR206KSE /ZMR206KTE/ZMR310E (High temperature melting solder lead inside)

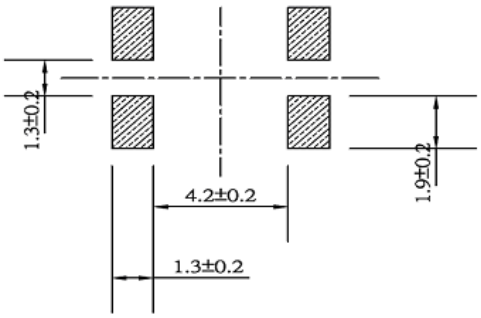
- **With Lead Inside**



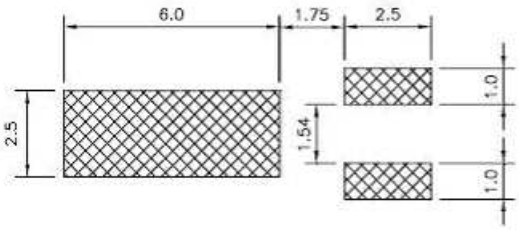
3 **PADS Connection and Recommend Soldering Pattern for ZM206 / ZM206K / ZM206E /ZM206KE**

It is required that pads 2 and 3 of ZM206 /ZM206E must not be connected to ground



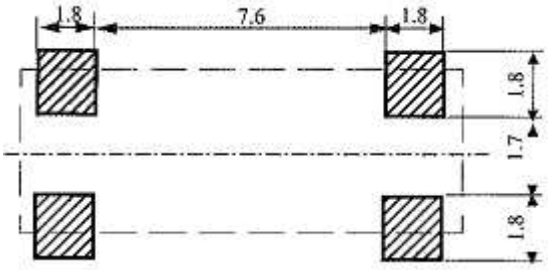


4. **Recommended Soldering Pattern for ZMR206B / ZMR206KT / ZMR206BE / ZMR206KTE**



The cylindrical body is not recommended to solder on any solder pads. To fix the cylindrical body, the adhesive material should be used instead of any soldering on the cylindrical body.

5. Recommended Soldering Pattern for ZM309 /ZM309E



6. To Bend the Lead of Cylinder type products (DT26/DT38/KT206/KT308/AT309/AT310)

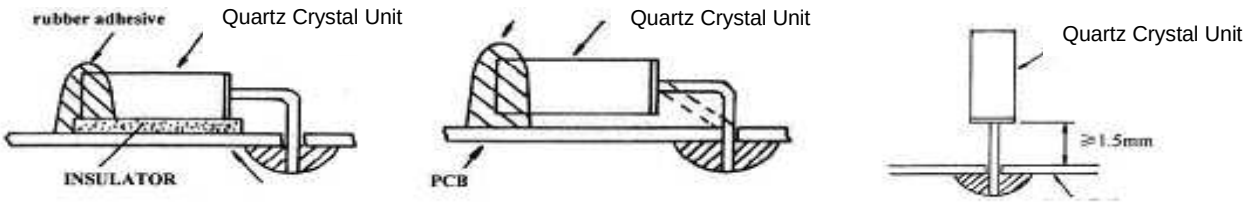
When the lead of cylinder type crystal units need to be bent, leave more than 1.5mm (3.0mm is recommendable) of lead from the case in order to prevent from any cracks of the hermetic sealing glass at the root of the lead, and use a jig to bend if possible.

When bending the lead of cylinder type crystal units, do not scrape off the soldering plating from the lead surface.

7. Mounting

7.1 Mounting of cylinder type products **(DT26/DT38/KT206/KT308/AT309/AT310)**

7.1.1 Soldering the body of the cylinder type crystal units with PCB must be avoided due to deteriorate the characteristics or damage the products. Rubber adhesive is recommend.



7.1.2 When the leads needs to be bent by the hand, please follow the instruction as bellows:

a) Hold the body of the cylinder type crystal unit in fingers;

b) Pick at the part wit tweezer, which you want to bend. There should be more than 1.5mm (3.0mm recommended) from the body case.

c) Bend the lead 90° by tweezer without pulling the lead strongly. If pulling the lead strongly may case any cracks of hermetic sealing glass at the root of the lead and may cause the leakage and the characteristics to deteriorate.

	7.2 Mounting of SMD Type products When using an automatic loading, please test and confirm to cause no damage to the crystal units before mounting. Bending the circuit board in the process of cleaving broads after mounting and soldering crystal units may cause peeling off the soldering or package cracks by mechanical stress. Please be sure the layout of crystal products position is on the less stressed and the cleaving process I is under less stressed for the crystal units.
8	**<u>Cleaning</u>** 8.1 Crystal units may be affected and destroyed at worst by supersonic welding. Please be sure to check if your cleaning and welding process affects any damage to crystal units before using. 8.2 Some kinds of cleaning fluid may cause any damage to crystal units. Please be sure to check suitability of the cleaning fluid in advantage.
9	**<u>Storage</u>** (1) Storing the crystal products under higher or lower temperature or high humidity for a long period may affect frequency stability or solder ability. Please store the crystal products at the normal temperature and humidity without exposing to direct sunlight and dew condensation and avoid the storage of crystal unit for more than 1 year and mount them as soon as possible after unpacking. Normal temperature and humidity: Temp Range, +15℃ to + 35℃, Humidity 25 % RH to 85 % RH (2) Please carefully handle the inner and outer boxes and reel. External pressure may cause deformation of reel and tape.