

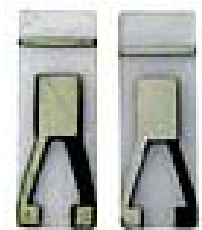
FORCE SENSITIVE QUARTZ CRYSTAL **EPKV-10M**

APPLICATIONS

The force sensitive quartz crystal EPKV-10M is intended for operation in a structure of precision electronic balances. It converts face shear strain into a frequency variation. Using this crystal, it is possible to design balances for weighing with a split-hair accuracy of weights by a mass from several milligrams up to hundreds of kilograms.

FEATURES

- High resolution and accuracy
- Long term quartz crystal stability
- Wide temperature range (-40...+80 °C)
- Low power consumption
- Suitable for precision weighting equipment
- Cost effective



OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	SPECIFICATIONS AND REMARKS	UNITS
Electrical characteristics		
Frequency range (fundamental mode), f_0	9960...10100	kHz
Resonance Resistance typ./max., R_r	30; 50 / 50	k Ω
Drive Level max., D_L	1.0	mW
Operating conditions		
Force sensitivity	3.5 ± 0.3	Hz/gm
Operating temperature, T_{OPR} (typ./max)	-40...+80 / -60...+100	°C
Storage temperature, T_{STR}	+5...+40	°C
Maximum frequency deviation	9.8 ± 0.85	kHz
Maximum stress-strain load	$\pm 5... \pm 20$	kg
Frequency Tolerance, $\Delta f/f_0$	± 50	ppm
Aging first year/next years max.	$\pm 5 / \pm 25$	ppm
Static Capacitance typ., C_0	9.1...8.1	pF
Capacitance ratio r	200	
Size	4 x 10 x 0.17	mm

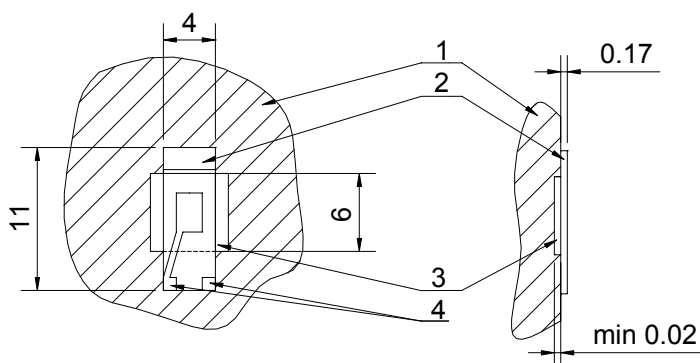
One side with one electrode of the force sensitive quartz crystal EPKV-10M is glued by epoxy adhesive on a cleaned and skim surface, thus the central part of the crystal should be free (see figure). After curing of the glue, the two wires are soldered to the contacts of the crystal, if required.

If the crystal is in a free condition, its force sensitivity characteristic is practically linear.

If the crystal is mounted, a nonlinearity of the force sensitivity characteristic occurs, which must be determined individually.

EXTERNAL DIMENSIONS

UNITS: millimeters



- 1 - surface, on which the force sensitive quartz crystal is mounted
- 2 - force sensitive quartz crystal EPKV-10M.
- 3 - undercut.
- 4 - contact leads.