



actual size

# UM-1

# HOORAY

## high precision quartz crystals

### features

- high stability
- surface mount option

type	UM-1			
frequency (MHz)	4.0 ~ 40.0	20.0 ~ 105.0	50.0 ~ 175.0	70.0 ~ 250.0
	fundamental	3rd overtone	5th overtone	7th overtone
frequency tolerance at 25 °C	± 5 ppm ~ ± 15 ppm (other on request)			
frequency stability options	± 3 ppm 0 °C ~ +60 °C ± 5 ppm -20 °C ~ +70 °C ± 15 ppm -40 °C ~ +90 °C ± 25 ppm -50 °C ~ +105 °C (other on request)			
storage temperature	-55 °C ~ + 125 °C			
load capacitance $C_L$	8 pF ~ 30 pF / series			
shunt capacitance $C_0$	< 7 pF			
drive level max.	100 μW			
aging	< ± 3 ppm			

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### test conditions:

- a) acceleration:  
1000 g /0.5 ms, 1/2 sine wave
- b) shock (random drop):  
height 75 cm, 3 times to hardwood surface ( $\Delta R/R \leq 20\%$ ;  $\Delta f/f \leq \pm 5$  ppm)
- c) vibration:  
f = 10 Hz ~ 55 Hz; amplitude = 1.5 mm; period = about 1 minute;  
time = 2 h each direction
- d) solderability:  
according to DIN 68-2-6

### marking:

1. line = company code
2. line = frequency / date code

