

- Frequency range 1.0MHz to 200MHz
- High-precision crystal ideal for telecoms applications
- High quality resistance weld sealing
- Suitable for reflow soldering



### DESCRIPTION

Um-1 and UM-5 crystals are a long-established design, widely used in telecommunications applications where their compact size and ease of production to close tolerances makes them an efficient source of frequency control. In addition to the standard packages a 'Slimline' package is also available.

### SPECIFICATION

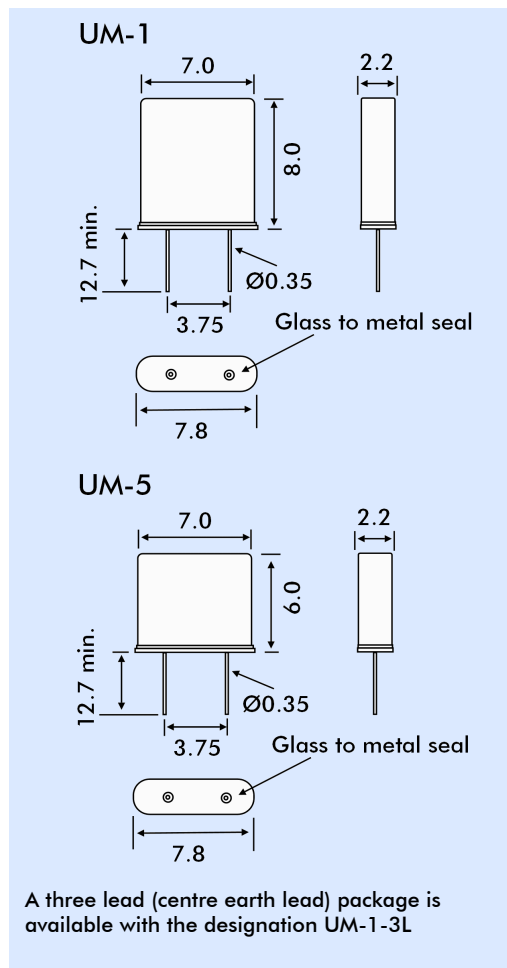
Frequency Range	UM-1	1.0MHz to 1.2MHz (SL-Cut)
	UM-5	4.0MHz to 200MHz (AT-Cut)
Oscillation Mode:	See table	
Calibration Tolerance at 25°C		
SL-Cut (<1.3MHz):	from ±50ppm	
AT-Cut (>4.0MHz):	from ±3ppm	
Frequency Tolerance		
SL-Cut:	from ±100ppm -10° to +60°C	
AT-Cut:	from ±3ppm 0° to +50°C	
Shunt Capacitance (C0):	4pF typical, 7pF maximum	
Load Capacitance (CL):	Series or from 8pF to 32pF (Customer specified CL)	
Ageing:	±2ppm maximum, 1st year, ±1ppm per year thereafter.	
Drive Level:	100µWatts typ., 500µWatts max.	
Crystal Holder:	Resistance-weld hermetic seal	
Supply format:	Bulk pack	

### PART NUMBER GENERATION

Part numbers for UM-1 crystals are generated as follows:

Example:	16.00MHz	UM-1	/20/30/-10+60/18pF/60R
Nominal Frequency	16.00MHz		
Package		UM-1 or UM-5	
Calibration tolerance at 25°C (±ppm)			±20/±30/±10
Temperature Stability over temp. range (±ppm)			±60
Operating Temp. Range (°C) (Lower and upper limits)			-10/+60
Load Capacitance (SR for series or CL in pF)			18pF
Equivalent Series Resistance (Optional - use when special value is required)			60R

### OUTLINE & DIMENSIONS



### ESR and OSCILLATION MODE (Data for UM-1 shown)

Frequency Range MHz	Crystal Cut Osc. Mode	ESR Ω Max.
1.0 ~ 1.2	SL Fund.	5k
4.0 ~ 4.9	AT Fund.	150
5.0 ~ 5.9	AT Fund.	120
6.0 ~ 6.9	AT Fund.	100
7.0 ~ 7.9	AT Fund.	90
8.0 ~ 8.9	AT Fund.	80
9.0 ~ 10.9	AT Fund.	60
11.0 ~ 12.9	AT Fund.	40
13.0 ~ 45.0	AT Fund.	25
50.1 ~ 100.0	AT 3rd ot	40
80.0 ~ 200.0	AT 5th ot	80