

## General specification for 'UM' family crystals

- 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, being widely used in telecommunications applications where their compact size and ease of producing to close tolerances makes them an ideal crystal. In addition to the standard packages a 'Slimline' package is also available.

### SPECIFICATION

Frequency Range	UM-1	1.0MHz to 1.2MHz (SL-Cut) 8.0MHz to 200MHz (AT-Cut)
	UM-5	12MHz 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:	100µW typical, 500µW maximum	
Crystal Holder:	Resistance-weld hermetic seal	
Supply format:	Bulk pack	

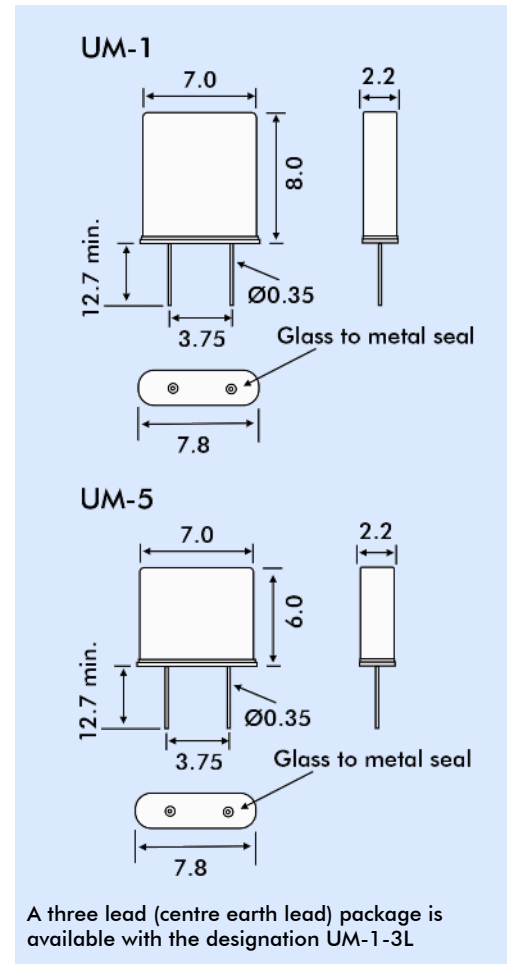
### PART NUMBER GENERATION

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

Example: 16.00MHz UM-1/20/30/-10+60/18pF/60R

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

### OUTLINE & DIMENSIONS



### ESR and OSCILLATION MODE

Frequency Range MHz	Crystal Cut Osc. Mode	ESR Ω Max.
1.0 ~ 1.2	SL Fund.	5k
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