

## UM-1SL SLIMLINE CRYSTALS

### DESCRIPTION

UM-1 Slimline crystals are popular for communications applications such as pagers where their small size and slimline profile is easily incorporated into equipment designs. The crystal blank used in this package is capable of being manufactured to close tolerances and is readily produced with custom frequencies and specifications.

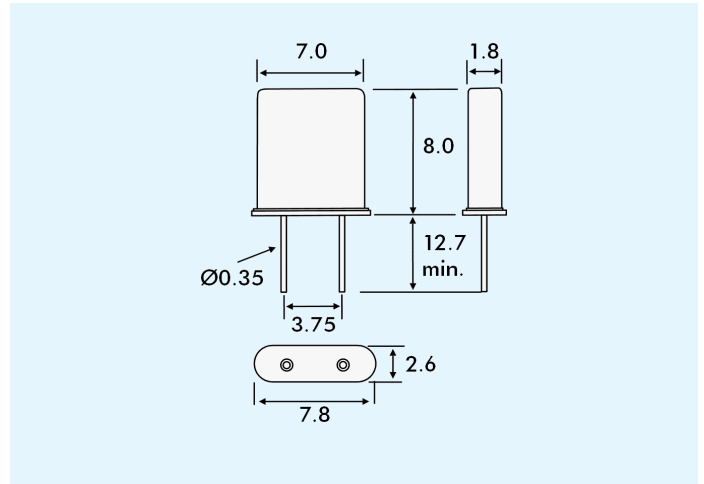
### FEATURES

- Wide frequency range
- Small profile, low-mass package
- Close tolerances easily achieved
- Fully customisable specification
- Industry-standard package

### GENERAL SPECIFICATION

Frequency Range:	8.0MHz to 200MHz
Oscillation Mode:	See table
Calibration Tolerance at 25°C:	from ±3ppm
Frequency stability over temp:	from ±2.5ppm -10° to +60°C
Operating Temperature Range:	From 0° ~ +50° to -55° ~ +105°C
Shunt Capacitance (C0):	4pF typical, 7pF maximum
Load Capacitance (CL):	Series or from 8pF to 32pF (Customer to specify CL)
Effective Series Resistance:	See table
Ageing:	±2ppm max 1st year, ±1ppm max per year after
Drive level:	100mW maximum
Holder:	Resistance-weld, hermetic seal
Supply format:	Bulk pack

### OUTLINES AND DIMENSIONS



### FREQUENCY STABILITY OVER TEMPERATURE

Operating Temp. °C	Temperature Stability (ppm)						
	±2.5	±5	±7.5	±10	±15	±20	±30
0° to +50°	ü	ü	ü	ü	ü	ü	ü
-10° to +60°	ü	ü	ü	ü	ü	ü	ü
-20° to +70°	X	ü	ü	ü	ü	ü	ü
-30° to +80°	X	X	X	ü	ü	ü	ü
-40° to +90°	X	X	X	X	ü	ü	ü
-55° to +105°	X	X	X	X	X	ü	ü

### OSCILLATION MODE & ESR

Frequency (MHz)	Crystal Cut Osc. Mode	ESR (max) (Ohms)
8.0~9.9	AT Fund.	80
10.0~10.99	AT Fund.	60
11.0~12.9	AT Fund.	40
13.0~45.0	AT Fund.	25
30.0~50.0	AT 3rd OT	40
50.1~100.0	AT 5th OT	50
80.0~200	AT 7th OT	70

### PART NUMBER GENERATION

UM-1SL crystal part numbers are derived as follows:

Example: **16.000MHz UM-1SL/10/20/10/30pF/ATF**

