UM1 CRYSTALS

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Delivery Options

- 3 day Express Manufacturing Service, subject to piece part stock availability

Holder Style

- UM1 crystals are resistance welded, hermetically sealed in an inert atmosphere with glass to metal seals securing the lead wires
- Holders suffixed '–3L have a centre third wire which grounds the case
- HC45 is not dimensionally identical to the UM1 but for most purposes the two are interchangeable
- Gull wing available upon request

General Specifications

- Load Capacitance (C_L): 10pF to 75pF or Series
- Drive Level: 1mW max.
- Static Capacitance (C_0): 7pF max.
- Ageing: ±3ppm typical per year

Standard Frequency Tolerances and Stabilities

- ±5ppm, ±10ppm, ±15ppm, ±20ppm, ±30ppm, ±50ppm, ±100ppm

Operating Temperature Ranges

- 0 to 50°C
  –10 to 60°C
  –20 to 70°C
  –30 to 80°C
  –40 to 90°C
  –55 to 105°C
  –55 to 125°C

Storage Temperature Range

- –55 to 125°C

Environmental Specification

- Shock: 981m/s^2 for 6ms, three shocks in each direction along three mutually perpendicular planes
- Vibration: 10 to 60Hz 0.75mm displacement, 60 to 2000Hz 98.1m/s^2 acceleration, 30 minutes in each of three mutually perpendicular planes

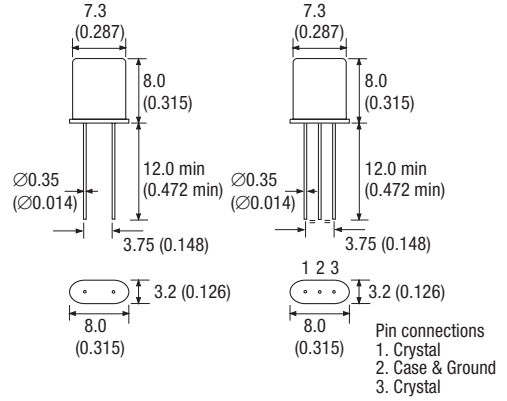
Marking

- Includes Frequency

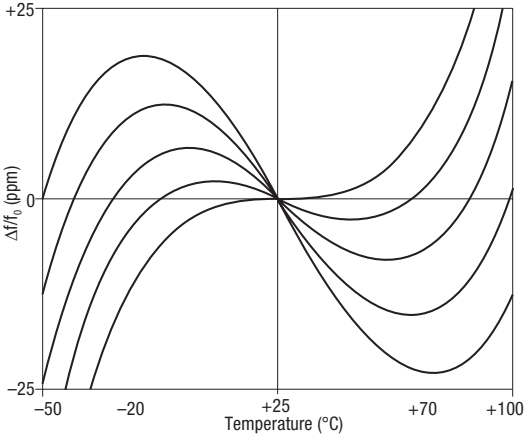
Minimum Order Information Required

- Frequency + Holder + Frequency Tolerance @ 25°C + Frequency Stability + Operating Temperature Range + Circuit Condition + Overtone Order

Outline in mm (inches) - UM1 & UM1-3L



Typical Frequency vs Temperature Curves for various angles of AT-cut crystals



Electrical Specification – maximum limiting values

Frequency Range	Frequency Tolerance @ 25°C ±2°C	Operating Temperature Range	Frequency Stability Available Over Operating Temperature		ESR max.	Vibration Mode
			Minimum	Maximum		
6.0 to < 10.0MHz	±5ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	80Ω	Fundamental AT cut
		–10 to 60°C	±15ppm	±100ppm		
		–20 to 70°C	±15ppm	±100ppm		
		–30 to 80°C	±20ppm	±100ppm		
		–40 to 90°C	±25ppm	±100ppm		
		–55 to 105°C	±50ppm	±100ppm		
		–55 to 125°C	±50ppm	±100ppm		
10.0 to < 15.0MHz	±5ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	60Ω	Fundamental AT cut
		–10 to 60°C	±15ppm	±100ppm		
		–20 to 70°C	±15ppm	±100ppm		
		–30 to 80°C	±20ppm	±100ppm		
		–40 to 90°C	±25ppm	±100ppm		
		–55 to 105°C	±50ppm	±100ppm		
		–55 to 125°C	±50ppm	±100ppm		
15.0 to 30.0MHz	±5ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	30Ω	Fundamental AT cut
		–10 to 60°C	±5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±20ppm	±100ppm		
		–40 to 90°C	±25ppm	±100ppm		
		–55 to 105°C	±50ppm	±100ppm		
		–55 to 125°C	±50ppm	±100ppm		
25.0 to 90.0MHz	±5ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	45Ω	3rd Overtone AT cut
		–10 to 60°C	±5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±20ppm	±100ppm		
		–40 to 90°C	±25ppm	±100ppm		
		–55 to 105°C	±50ppm	±100ppm		
		–55 to 125°C	±50ppm	±100ppm		
60.0 to 150.0MHz	±5ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	100Ω	5th Overtone AT cut
		–10 to 60°C	±5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±20ppm	±100ppm		
		–40 to 90°C	±25ppm	±100ppm		
		–55 to 105°C	±50ppm	±100ppm		
		–55 to 125°C	±50ppm	±100ppm		
125.0 to 175.0MHz	±5ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	150Ω	7th Overtone AT cut
		–10 to 60°C	±5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±20ppm	±100ppm		
		–40 to 90°C	±25ppm	±100ppm		
		–55 to 105°C	±50ppm	±100ppm		
		–55 to 125°C	±50ppm	±100ppm		
175.0 to 250.0MHz	±5ppm to ±100ppm	0 to 50°C	±5ppm	±100ppm	200Ω	9th Overtone AT cut
		–10 to 60°C	±5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±20ppm	±100ppm		
		–40 to 90°C	±25ppm	±100ppm		
		–55 to 105°C	±50ppm	±100ppm		
		–55 to 125°C	±50ppm	±100ppm		