

ULTRA MINIATURE RESISTANCE WELD

Holder: UM-1 SLIM (Similar to HC-44/U),
UM-1 (Similar to HC-80/U), UM-2

These crystal units are of ultra-miniaturized metal holder types introducing resistance weld sealing method.

Lead wire type terminals are provided.

This series has following features:

Ultra-miniaturized holder

Excellent frequency aging characteristics

High frequency reproducibility

Small deviation from the specified frequency pulling range

FREQUENCY RANGE : 10MHz to 200MHz

METHOD OF SEALING : Resistance Weld

MODE OF VIBRATION : AT-cut

Fundamental, 3rd, 5th, 7th

Thickness-shear

LOAD CAPACITANCE : (S), 20pF, 30pF,

DRIVE LEVEL : 0.5mW, 1mW, 2mW

Frequency tolerance (at 25±3°C)

A	B	C	D
±10ppm	±15ppm	±20ppm	±30ppm

Aging

AA	A	B
±1ppm/year	±2ppm/year	±4ppm/year

Resonance resistance (R_r)

Frequency	Mode	R _r
10 to 15 MHz	Fund	40 Ω max
15 to 30 MHz	Fund	25 Ω
25 to 30 MHz	3rd	50 Ω
30 to 90 MHz	3rd	45 Ω
50 to 150 MHz	5th	60Ω
90 to 200 MHz	7th	(90Ω)

Frequency stability

(in operating temperature range referring 25°C)

(Fundamental)		R	S	T	V	W	X	Y	Z
		±3 ppm	±5 ppm	±7.5 ppm	±10 ppm	±15 ppm	±20 ppm	±30 ppm	±50 ppm
E	0 to 50°C								
F	-5 to 55°C								
G	-10 to 60°C								
H	-15 to 65°C								
I	-20 to 70°C								
J	-25 to 75°C								
K	-30 to 80°C								
L	-40 to 90°C								
M	-55 to 105°C								

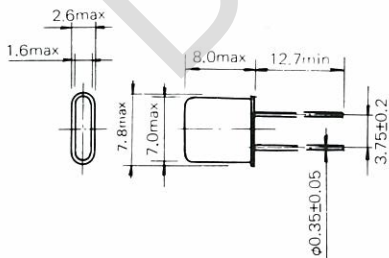
(3rd, 5th, 7th)		R	S	T	V	W	X	Y	Z
		±3 ppm	±5 ppm	±7.5 ppm	±10 ppm	±15 ppm	±20 ppm	±30 ppm	±50 ppm
E	0 to 50°C								
F	-5 to 55°C								
G	-10 to 60°C								
H	-15 to 65°C								
I	-20 to 70°C								
J	-25 to 75°C								
K	-30 to 80°C								
L	-40 to 90°C								
M	-55 to 105°C								

*High frequency fundamental crystals more than 30MHz are available in UM-1 on request.
Details are listed on page 16.

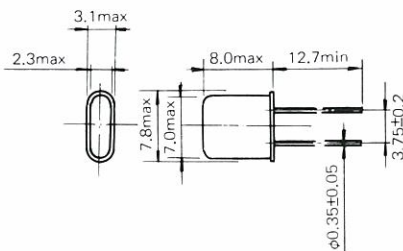
Outline drawing

Size in mm

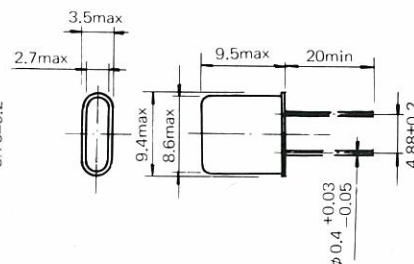
UM-1 SLIM (Resistance weld)



UM-1 (Resistance weld)



UM-2 (Resistance weld)



mm	inch
0.03	.001
0.05	.002
0.2	.008
0.35	.014
0.4	.016
1.6	.063
2.3	.091
2.6	.102
2.7	.106
3.1	.122
3.5	.138
3.75	.148
4.88	.192
7.0	.276
7.8	.307
8.0	.315
8.6	.339
9.4	.370
9.5	.374
12.7	.500
20.0	.787