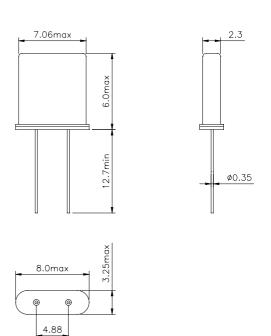


## **Miniature Resistance Weld Crystal**

The UM5 series is a AT-cut crystal housed in a miniature resistance weld package that provides for an excellent hermetic seal and frequency aging. This high quality crystal offers a smaller footprint in a wide frequency range.

UM<sub>5</sub>

Specifications:           Frequency Range:         10 MHz ~ 45 MHz         Fundamental Overtone           Operating Temperature:         0°C ~ +50°C         -A           -10°C ~ +60°C         -B         -20°C ~ +70°C         -C           -40°C ~ +85°C         -L         -L           Storage Temperature:         -55°C ~ +125°C           Frequency Tolerance:         ± 50 ppm         -50           (at 25°C)         ± 30 ppm         -30           ± 20 ppm         -20         ± 10 ppm         -10           Frequency Stability:         ± 50 ppm         -50           (over temperature range)         ± 30 ppm         -30           ± 20 ppm         -20           ± 10 ppm         -10           Circuit Condition:         10 pF ~ 32 pF or series           Equivalent Series Resistance:         Maximum resistance corresponds to frequency. Please see ESR table.           Drive Level:         100 μW max           Shunt Capacitance:         7 pF max           Aging:         ± 3 ppm max per year           Optional Features:         Fundamental Features:         -F           -20 characteries				
30 MHz ~ 200 MHz         Overtone           OPC ~ +50°C -A           -10°C ~ +60°C -B         -20°C ~ +70°C -C           -40°C ~ +85°C -L         -L           Storage Temperature:         -55°C ~ +125°C           Frequency Tolerance:         ± 50 ppm -50           (at 25°C)         ± 30 ppm -30           ± 20 ppm -20         ± 10 ppm -10           Frequency Stability:         ± 50 ppm -50           (over temperature range)         ± 30 ppm -30           ± 20 ppm -20         ± 10 ppm -10           Circuit Condition:         10 pF ~ 32 pF or series           Equivalent Series Resistance:           Maximum resistance corresponds to frequency. Please see ESR table.           Drive Level:         100 μW max           Shunt Capacitance:         7 pF max           Aging:         ± 3 ppm max per year           Optional Features:         Fundamental -F	Specifications:			
-10°C ~ +60°C -B -20°C ~ +70°C -C -40°C ~ +85°C -L  Storage Temperature: -55°C ~ +125°C  Frequency Tolerance: ± 50 ppm -50 (at 25°C) ± 30 ppm -30 ± 20 ppm -20 ± 10 ppm -10  Frequency Stability: ± 50 ppm -50 (over temperature range) ± 30 ppm -30 ± 20 ppm -20 ± 10 ppm -10  Circuit Condition: 10 pF ~ 32 pF or series  Equivalent Series Resistance: Maximum resistance corresponds to frequency. Please see ESR table.  Drive Level: 100 μW max  Shunt Capacitance: 7 pF max  Aging: ± 3 ppm max per year  Optional Features: Fundamental -F	Frequency Range:	-	-	
-20°C ~ +70°C -C -40°C ~ +85°C -L  Storage Temperature: -55°C ~ +125°C  Frequency Tolerance: ± 50 ppm -50 (at 25°C) ± 30 ppm -20 ± 10 ppm -10  Frequency Stability: ± 50 ppm -50 (over temperature range) ± 30 ppm -30 ± 20 ppm -20 ± 10 ppm -10  Circuit Condition: 10 pF ~ 32 pF or series  Equivalent Series Resistance: Maximum resistance corresponds to frequency. Please see ESR table.  Drive Level: 100 μW max  Shunt Capacitance: 7 pF max  Aging: ± 3 ppm max per year  Optional Features: Fundamental -F	Operating Temperatur	e:	0°C ~ +50°C	: -A
-40°C ~ +85°C       -L         Storage Temperature:       -55°C ~ +125°C         Frequency Tolerance:       ± 50 ppm       -50         (at 25°C)       ± 30 ppm       -30         ± 20 ppm       -20       ± 10 ppm       -10         Frequency Stability:       ± 50 ppm       -50         (over temperature range)       ± 30 ppm       -30         ± 20 ppm       -20         ± 10 ppm       -10         Circuit Condition:       10 pF ~ 32 pF or series         Equivalent Series Resistance:         Maximum resistance corresponds to frequency. Please see ESR table.         Drive Level:       100 μW max         Shunt Capacitance:       7 pF max         Aging:       ± 3 ppm max per year         Optional Features:       Fundamental       -F			-10°C ~ +60°C	Э -В
Storage Temperature:         -55°C ~ +125°C           Frequency Tolerance:         ± 50 ppm         -50           (at 25°C)         ± 30 ppm         -30           ± 20 ppm         -20         ± 10 ppm         -10           Frequency Stability:         ± 50 ppm         -50           (over temperature range)         ± 30 ppm         -30           ± 20 ppm         -20         ± 10 ppm         -10           Circuit Condition:         10 pF ~ 32 pF or series           Equivalent Series Resistance:         Maximum resistance corresponds to frequency. Please see ESR table.           Drive Level:         100 μW max           Shunt Capacitance:         7 pF max           Aging:         ± 3 ppm max per year           Optional Features:         Fundamental         -F			-20°C ~ +70°C	-C
Frequency Tolerance:         ± 50 ppm         -50           (at 25°C)         ± 30 ppm         -30           ± 20 ppm         -20           ± 10 ppm         -10           Frequency Stability:         ± 50 ppm         -50           (over temperature range)         ± 30 ppm         -30           ± 20 ppm         -20         ± 10 ppm         -10           Circuit Condition:         10 pF ~ 32 pF or series           Equivalent Series Resistance:         Maximum resistance corresponds to frequency. Please see ESR table.           Drive Level:         100 μW max           Shunt Capacitance:         7 pF max           Aging:         ± 3 ppm max per year           Optional Features:         Fundamental         -F			-40°C ~ +85°C	C -L
(at 25°C)       ± 30 ppm       -30         ± 20 ppm       -20         ± 10 ppm       -10         Frequency Stability:         ± 50 ppm       -50         (over temperature range)       ± 30 ppm       -30         ± 20 ppm       -20         ± 10 ppm       -10         Circuit Condition:       10 pF ~ 32 pF or series         Equivalent Series Resistance:         Maximum resistance corresponds to frequency. Please see ESR table.         Drive Level:       100 μW max         Shunt Capacitance:       7 pF max         Aging:       ± 3 ppm max per year         Optional Features:       Fundamental       -F	Storage Temperature:		-55°C ~ +125°	C
± 20 ppm       -20         ± 10 ppm       -10         Frequency Stability:         ± 50 ppm       -50         (over temperature range)       ± 30 ppm       -30         ± 20 ppm       -20         ± 10 ppm       -10         Circuit Condition:       10 pF ~ 32 pF or series         Equivalent Series Resistance:         Maximum resistance corresponds to frequency. Please see ESR table.         Drive Level:       100 μW max         Shunt Capacitance:       7 pF max         Aging:       ± 3 ppm max per year         Optional Features:       Fundamental       -F	Frequency Tolerance:		± 50 ppm	-50
# 10 ppm -10  Frequency Stability:	(at 25°C)		$\pm \ 30 \ ppm$	-30
Frequency Stability: ± 50 ppm -50 (over temperature range) ± 30 ppm -30 ± 20 ppm -20 ± 10 ppm -10  Circuit Condition: 10 pF ~ 32 pF or series  Equivalent Series Resistance: Maximum resistance corresponds to frequency. Please see ESR table.  Drive Level: 100 μW max  Shunt Capacitance: 7 pF max  Aging: ± 3 ppm max per year  Optional Features: Fundamental -F			$\pm \ 20 \ ppm$	-20
table.  Drive Level:  Drive Level:  10 pp max  4 30 ppm -30  ± 20 ppm -20  ± 10 ppm -10  Maximum resistance corresponds to frequency. Please see ESR table.  Drive Level:  100 μW max  Aging:  ± 3 ppm max per year  Optional Features:  Fundamental -F			$\pm$ 10 ppm	-10
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Frequency Stability:		± 50 ppm	-50
± 10 ppm -10  Circuit Condition: 10 pF ~ 32 pF or series  Equivalent Series Resistance: Maximum resistance corresponds to frequency. Please see ESR table.  Drive Level: 100 μW max  Shunt Capacitance: 7 pF max  Aging: ± 3 ppm max per year  Optional Features: Fundamental -F	(over temperature range	e)	$\pm \ 30 \ ppm$	-30
Circuit Condition:       10 pF ~ 32 pF or series         Equivalent Series Resistance:       Maximum resistance corresponds to frequency. Please see ESR table.         Drive Level:       100 μW max         Shunt Capacitance:       7 pF max         Aging:       ± 3 ppm max per year         Optional Features:       Fundamental       -F			$\pm \ 20 \ ppm$	-20
Equivalent Series Resistance:       Maximum resistance corresponds to frequency. Please see ESR table.         Drive Level:       100 μW max         Shunt Capacitance:       7 pF max         Aging:       ± 3 ppm max per year         Optional Features:       Fundamental       -F			$\pm$ 10 ppm	-10
to frequency. Please see ESR table.  Drive Level: 100 μW max  Shunt Capacitance: 7 pF max  Aging: ± 3 ppm max per year  Optional Features: Fundamental -F	Circuit Condition:		10 pF ~ 32 pF	or series
Shunt Capacitance: 7 pF max  Aging: ± 3 ppm max per year  Optional Features: Fundamental -F	Equivalent Series Resistance:		• •	
Aging: ± 3 ppm max per year  Optional Features: Fundamental -F	Drive Level:		100 μW max	
Optional Features: Fundamental -F	Shunt Capacitance:		7 pF max	
	Aging:		± 3 ppm max per year	
$3^{rd}, 5^{th}, 7^{th} \text{ O.T.}$ -3,5,7	Optional Features:		Fundamental	-F
			$3^{rd}$ , $5^{th}$ , $7^{th}$ O.T.	-3,5,7
Tape & Reel -TR			Tape & Reel	-TR



UM-5

All dimensions are in mm

## Ordering Information

Product name + CL + Operating Temperature Range + Tolerance + Stability + Other Code + Frequency.

i.e. UM5-20-C-30-30-F-24.000MHz

## Note:

- Other frequencies, tolerances, stabilities, and operating temperature ranges available. Consult VTC Support for specific requirements.
- 2. Not all combinations of the above tolerances, stabilities, and temperature ranges are available. Consult VTC Support if your requirement is not standard.
- 3. All specifications subject to change without notice.