

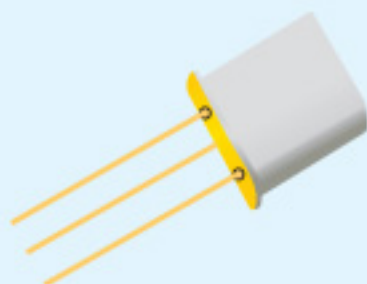
# CRYSTAL UNIT



HUAFENG  
CRYSTAL

## UM Series

- UM type package
- AT cut available
- Tight tolerance / stability
- Wide temperature range
- Frequencies to 200.000 MHz available



### ELECTRICAL SPECIFICATIONS

Frequency Range	7.000 to 200.000MHz
Operating Temperature Range	-10 to +60°C (STD), -20 to +70°C
Storage Temperature Range	-40 to +85°C
Frequency Tolerance (at 25°C)	± 10, ± 15, ± 20 (STD), ± 30, ± 50ppm
Frequency Stabilify	
Over Operating Temperature Range	± 10, ± 15, ± 20, ± 30, (STD), ± 50ppm
Load Capacitance(C <sub>L</sub> )	18pF (STD), Custom C <sub>L</sub> ≥ 10pF or Series Resonant
Drive Level	0.01 to 100µW
Shunt Capacitance(C <sub>0</sub> )	7pF Max
Aging (at 25°C)	± 3ppm/year Max
Insulation Resistance	500 MΩ Min at 100Vdc

### EQUIVALENT SERIES RESISTANCE(ESR)

Frequency Range(MHz)	ESR(Ω Max)	Mode of Oscillation	Package
7.000 ~ 9.999	80	Fundamental	UM-1
10.000 ~ 15.999	60	Fundamental	UM-1 / UM-5 / UM-4 (TR-6)
16.000 ~ 60.000	30 / 40 / 50	Fundamental	UM-1 / UM-5 / UM-4 (TR-6)
30.000 ~ 79.999	80 / 80	3rd Overtone	UM-1 / UM-5
80.000 ~ 150.000	80 / 80 / 80	3rd Overtone	UM-1 / UM-5 / UM-4 (TR-6)
80.000 ~ 200.000	100 / 100	5th Overtone	UM-1 / UM-5

## PART NUMBERING GUIDE

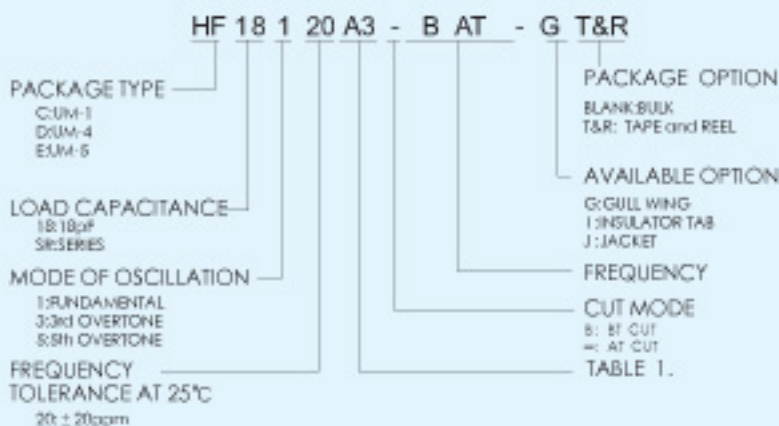
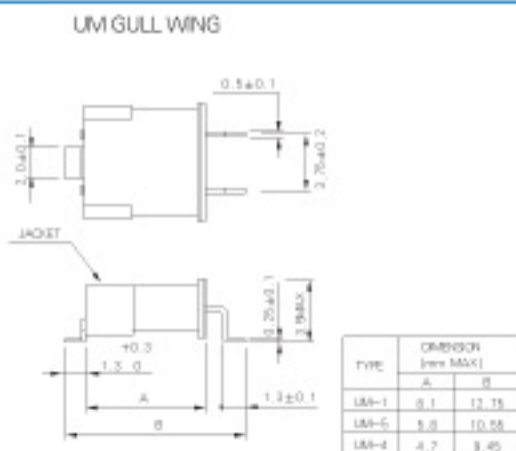
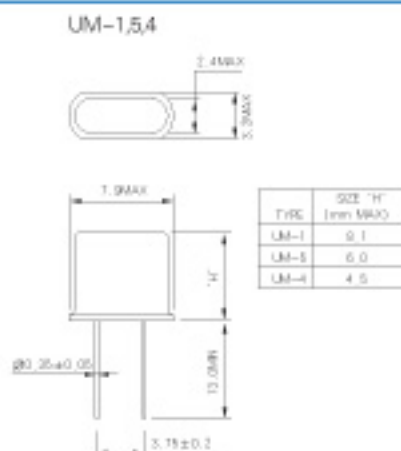


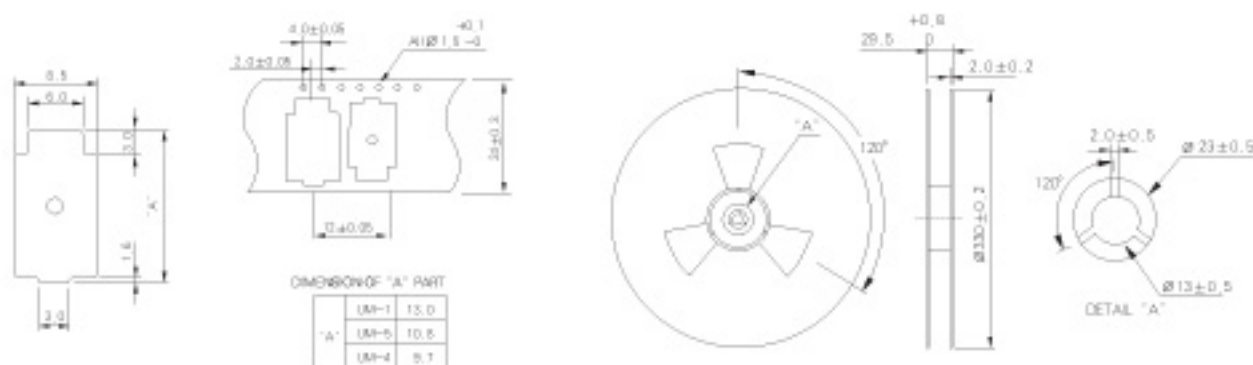
TABLE 1. FREQUENCY STABILITY VS. TEMPERATURE RANGE \* : Available

Temp	Stability	FREQUENCY STABILITY VS. TEMPERATURE RANGE							
		±5	±7.5	±10	±15	±20	±30	±50	±100
-10~60°C	A	*	*	*	*	*	*	*	*
-20~60°C	B		*	*	*	*	*	*	*
0~70°C	C		*	*	*	*	*	*	*
-10~70°C	D		*	*	*	*	*	*	*
-20~70°C	E		*	*	*	*	*	*	*
-30~60°C	F			*	*	*	*	*	*
-20~85°C	G				*	*	*	*	*
-30~70°C	H					*	*	*	*
-30~85°C	I						*	*	*
-40~85°C	J							*	*
-40~90°C	K								*
-40~105°C	L								*

## MECHANICAL DIMENSIONS



## TAPE AND REEL DIMENSIONS



## ENVIRONMENTAL / MECHANICAL SPECIFICATIONS

PARAMETER	SPECIFICATIONS
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ± 5°C for 60 seconds minimum.
Solderability	Sn63 Solder dip at +230°C ± 5°C for 5 seconds/95% coverage.
Shock	Random drop on hard wooden plate 3 times from a height of 75cm.
Vibration	Frequency with an amplitude of 1.52mm sweeping between 10Hz to 55Hz within 1 minute [approximately] for 2 hours minimum on each axis [X, Y and Z] for a total of 6 hours.