

UM TYPE UM-1

- UM Type Package
- AT-Cut Crystal Design
- Tight Tolerance/Stability
- Wide Temperature Range
- Frequencies to 150.000 MHz Available
- Pb-free and RoHS Compliance



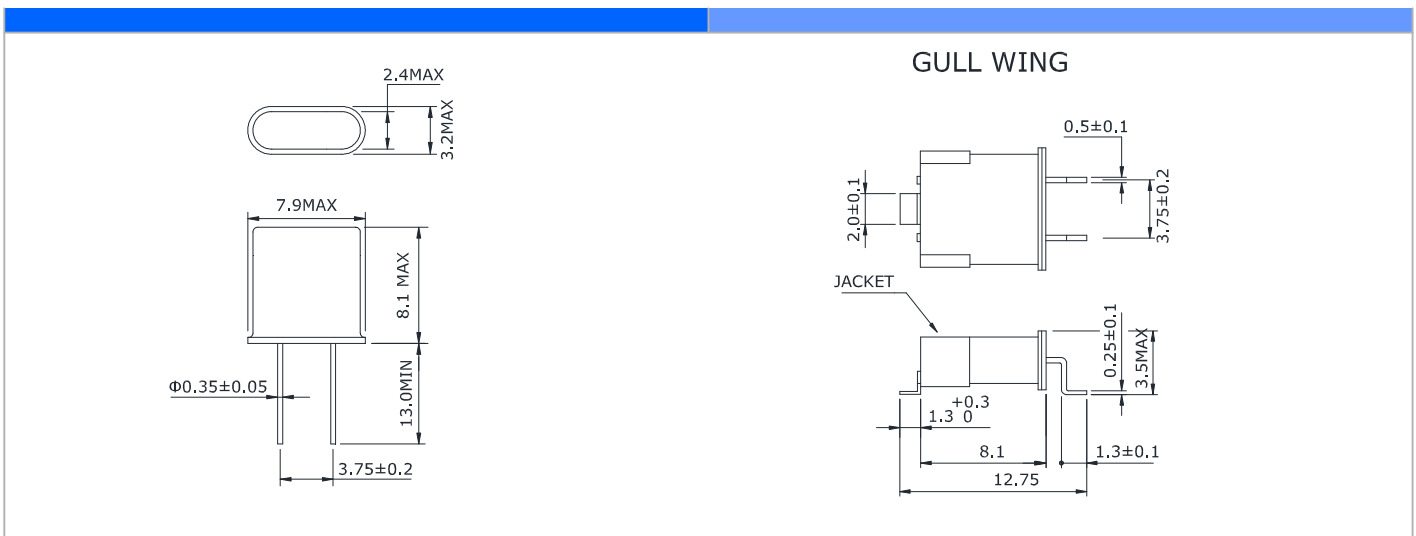
■ ELECTRICAL SPECIFICATIONS

Frequency Range	7.000 to 150.000 MHz
Operating Temperature Range	-20 to +70 °C, -40 to +85 °C, or specify
Storage Temperature Range	-40 to +85 °C
Frequency Tolerance (at 25 °C)	±15, ±30, ±50 ppm(STD), or specify
Frequency Stability Over Operating Temperature Range	±10 to ±50 ppm(-20 to +70 °C) ±20 to ±100 ppm(-40 to +85 °C)
Load Capacitance (CL)	18 pF(STD), Custom CL≥10 pF or Series Resonant
Drive Level	100 μW(1000 μW Max.)
Shunt Capacitance (C0)	7.0 pF Max.
Aging (at 25 °C)	±3 ppm/year Max.
Insulation Resistance	500 MΩ Min. at 100 V _{DC}

■ EQUIVALENT SERIES RESISTANCE(ESR)

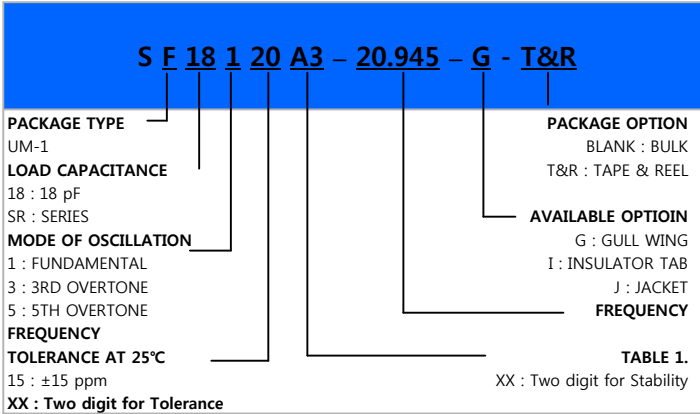
Frequency Range(MHz)	ESR(Ω Max.)	Mode of Oscillation
7.000 ~ 9.999	80	Fundamental
10.000 ~ 15.999	60	Fundamental
16.000 ~ 60.000	30	Fundamental
30.000 ~ 79.999	80	3rd overtone
80.000 ~ 150.000	80	3rd overtone

■ MECHANICAL DIMENSIONS (mm)



■ PART NUMBERING GUIDE

■ TABLE 1.



FREQUENCY STABILITY VS. TEMPERATURE RANGE

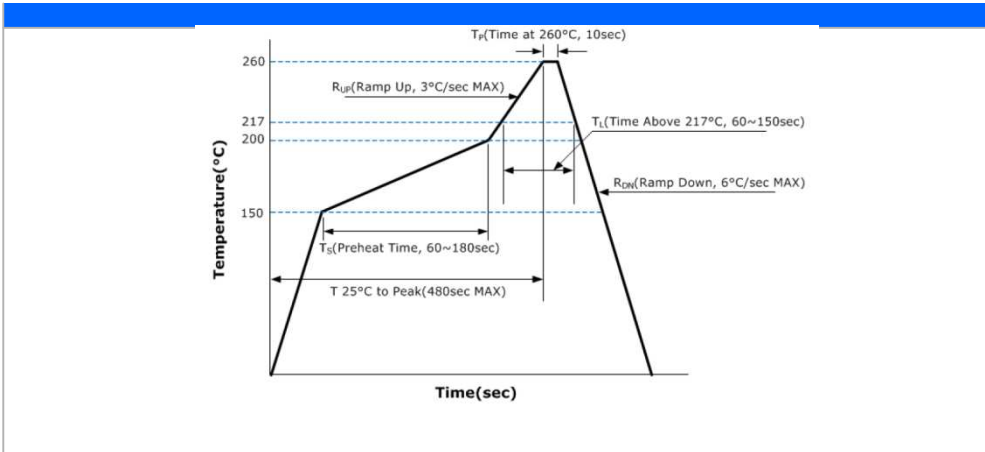
Temp	Stability	±10	±15	±20	±30	±50	±100
		3	4	5	6	7	8
-10~70°C	D	*	*	*	*	*	*
-20~70°C	E	*	*	*	*	*	*
-30~60°C	F	*	*	*	*	*	*
-20~85°C	G		*	*	*	*	*
-30~70°C	H			*	*	*	*
-30~85°C	I				*	*	*
-40~85°C	J				*	*	*
-40~90°C	K				*	*	*
-40~105°C	L				*	*	*
-40~125°C	M						

■ ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-202, Method 213, Condition C
Vibration	MIL-STD-883, Method 2007, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Solderability	MIL-STD-883, Method 2003

■ REFLOW PROFILE

■ MARKING GUIDE



LINE 1 : XX.XXX

LINE 2 : SUNNY

Sunny

Frequency in MHz