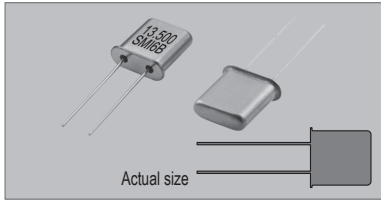
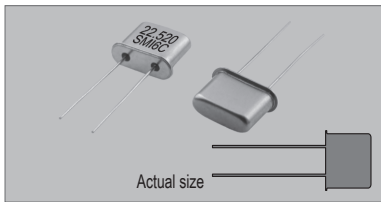


UM-1



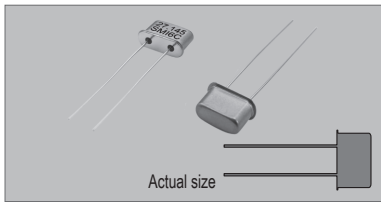
0.354 gm (wt.)

UM-5



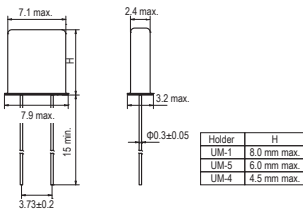
0.295 gm (wt.)

UM-4

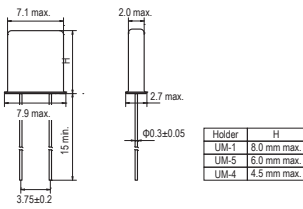


0.254 gm (wt.)

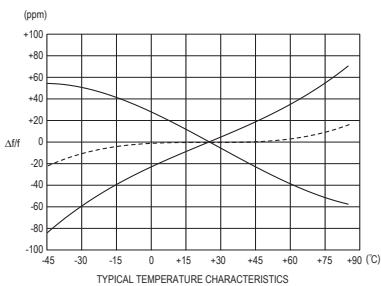
UM-1, UM-5 & UM-4



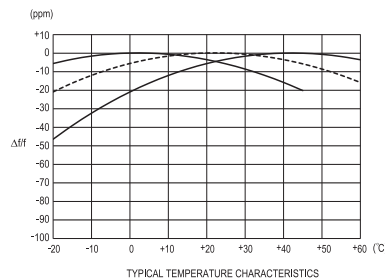
UM-1S, UM-5S & UM-4S



AT-CUT



SL-CUT

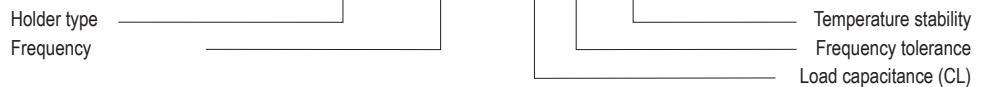


STANDARD SPECIFICATIONS

Item	Symbol	Specifications																																																												
Holder type		UM-1, UM-1S, UM-4, UM-4S, UM-5 & UM-5S																																																												
Frequency range	F	1.000 MHz to 1.200 MHz (UM-1) 6.000 MHz to 200.000 MHz (UM-1 & UM-1S) 10.000 MHz to 200.000 MHz (UM-5 & UM-5S) 20.000 MHz to 200.000 MHz (UM-4 & UM-4S)																																																												
Frequency tolerance (at +25°C ±3°C)	Δf/F	F : ±3 ppm J : ±5 ppm O : ±10 ppm Q : ±15 ppm R : ±20 ppm X : ±50 ppm																																																												
Temperature stability (referred to +25°C) Note : Contact for other temperature stabilities and operating temperature ranges.		CC1ggg : ±100 ppm over -10°C to +60°C TTiii : ± 30 ppm over -20°C to +70°C RRiii : ± 20 ppm over -20°C to +70°C QQiii : ± 15 ppm over -20°C to +70°C OOiii : ± 10 ppm over -20°C to +70°C																																																												
Load capacitance	CL	16 pF, Typical																																																												
Shunt capacitance	C0	7.0 pF max.																																																												
Drive level	P	1 mW max. (10 μW for testing)																																																												
Aging (for first year)	Δf/F	±5 ppm max. at +25°C ±3°C per year (SL-Cut) ±3 ppm max. at +25°C ±3°C per year (AT-Cut)																																																												
Cut		SL-Cut / 1.000 MHz to 1.200 MHz AT-Cut / 6.000 MHz to 200.000 MHz																																																												
Equivalent series resistance	ESR	<table border="1"> <thead> <tr> <th></th> <th>Frequency</th> <th>UM-1 & 1S</th> <th>UM-5 & 5S</th> <th>UM-4 & 4S</th> </tr> </thead> <tbody> <tr> <td>Fundamental</td> <td>1.000 to 1.200 MHz</td> <td>5k Ω max.</td> <td>n.a.</td> <td>n.a.</td> </tr> <tr> <td>Fundamental</td> <td>6.000 MHz+</td> <td>40 Ω max.</td> <td>n.a.</td> <td>n.a.</td> </tr> <tr> <td>Fundamental</td> <td>10.000 MHz+</td> <td>25 Ω max.</td> <td>30 Ω max.</td> <td>n.a.</td> </tr> <tr> <td>Fundamental</td> <td>20.000 MHz+</td> <td>25 Ω max.</td> <td>25 Ω max.</td> <td>30 Ω max.</td> </tr> <tr> <td>3rd overtone</td> <td>24.000 MHz+</td> <td>60 Ω max.</td> <td>80 Ω max.</td> <td>30 Ω max. (fund.)</td> </tr> <tr> <td>3rd overtone</td> <td>30.000 MHz+</td> <td>60 Ω max.</td> <td>60 Ω max.</td> <td>30 Ω max. (fund.)</td> </tr> <tr> <td>3rd overtone</td> <td>60.000 MHz+</td> <td>40 Ω max.</td> <td>40 Ω max.</td> <td>80 Ω max.</td> </tr> <tr> <td>5th overtone</td> <td>80.000 MHz+</td> <td>80 Ω max.</td> <td>100 Ω max.</td> <td>80 Ω max.</td> </tr> <tr> <td>5th overtone</td> <td>90.000 MHz+</td> <td>80 Ω max.</td> <td>100 Ω max.</td> <td>60 Ω max.</td> </tr> <tr> <td>5th overtone</td> <td>100.000 MHz+</td> <td>80 Ω max.</td> <td>100 Ω max.</td> <td>100 Ω max.</td> </tr> <tr> <td>5th overtone</td> <td>120.000 MHz+</td> <td>70 Ω max.</td> <td>80 Ω max.</td> <td>100 Ω max.</td> </tr> </tbody> </table>		Frequency	UM-1 & 1S	UM-5 & 5S	UM-4 & 4S	Fundamental	1.000 to 1.200 MHz	5k Ω max.	n.a.	n.a.	Fundamental	6.000 MHz+	40 Ω max.	n.a.	n.a.	Fundamental	10.000 MHz+	25 Ω max.	30 Ω max.	n.a.	Fundamental	20.000 MHz+	25 Ω max.	25 Ω max.	30 Ω max.	3rd overtone	24.000 MHz+	60 Ω max.	80 Ω max.	30 Ω max. (fund.)	3rd overtone	30.000 MHz+	60 Ω max.	60 Ω max.	30 Ω max. (fund.)	3rd overtone	60.000 MHz+	40 Ω max.	40 Ω max.	80 Ω max.	5th overtone	80.000 MHz+	80 Ω max.	100 Ω max.	80 Ω max.	5th overtone	90.000 MHz+	80 Ω max.	100 Ω max.	60 Ω max.	5th overtone	100.000 MHz+	80 Ω max.	100 Ω max.	100 Ω max.	5th overtone	120.000 MHz+	70 Ω max.	80 Ω max.	100 Ω max.
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PART NUMBERING GUIDE

UM1 / 15.360M - 16 / J / OOiii



Example

SMI Part No.	Holder	Circuit Calibration Condition	Frequency	Frequency Tolerance	Temperature Stability
UM1/15.360M-16/J/OOiii	UM1 = UM-1	Parallel resonance CL = 16pF	15.360 MHz	J = ±5 ppm	OOiii = ±10 ppm
UM5S/20.945M-30/Q/QQiii	UM5S = UM-5S	Parallel resonance CL = 30pF	20.945 MHz	Q = ±15 ppm	QQiii = ±15 ppm
UM4S/21.480M-20/O/RRiii	UM4S = UM-4S	Parallel resonance CL = 20pF	21.480 MHz	O = ±10 ppm	RRiii = ±20 ppm

HOLDER DATA

Item	Holder	UM-1/1S, UM-5/5S & UM-4/4S
Cover		Metal
Base		Metal
Sealing		Resistance
Terminal lead		Alloy (FeNiCo)
Terminal lead plating		Gold
RoHS		Compliant (Pb-free)