



Data Sheet



Product Category: SMD Quartz Crystal

Series Number	Package	Description	Last Modified
201	UM-1 Gull Wing	SMD Quartz Crystal	Jan. 01 2002

## FEATURES

- 7 MHz to 200 MHz frequency range
- Space saving footprint
- Resistance welded
- Low profile
- Tape and Reel



## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS		CHARACTERISTICS	UNITS
Frequency Range	$f_O$	7.00 ~ 200.000	MHz
Frequency Tolerance	Ref @ +25°C	±10 ~ ±50	PPM
Frequency Stability	Ref @ +25°C	±10 ~ ±50	PPM
Operating Temperature	$T_{OPR}$	-10 ~ +60 (STD)	°C
Storage Temperature	$T_{STG}$	-40 ~ +85 (STD)	°C
Shunt Capacitance	$C_O$	7.0 max.	pF
Load Capacitance	$C_L$ (Customer Specified)	16, 20, 30, Series	pF
Drive Level	$D_L$	10.0 ~ 1000.0	µW
Overtone Order	Fundamental	7 ~ 50	MHz
	3rd Overtone	30 ~ 150	
	5th Overtone	80 ~ 200	

## MODE OF OSCILLATION AND EQUIVALENT SERIES RESISTANCE

FREQUENCY RANGE (MHz)	MODE	MAX ESR Ohm	FREQUENCY RANGE (MHz)	MODE	MAX ESR Ohm
7.0 ~ 9.9	Fundamental	80	30.0 ~ 150.0	3rd Overtone	80
10.0 ~ 15.9	Fundamental	80	80.0 ~ 200.0	5th Overtone	100
16.0 ~ 50.0	Fundamental	30			

**PACKAGE DIMENSIONS (mm)**

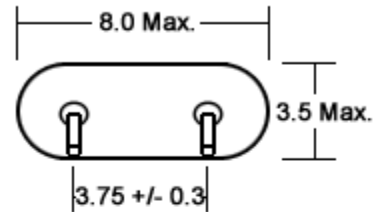
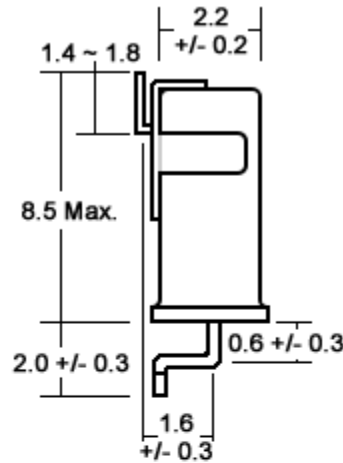
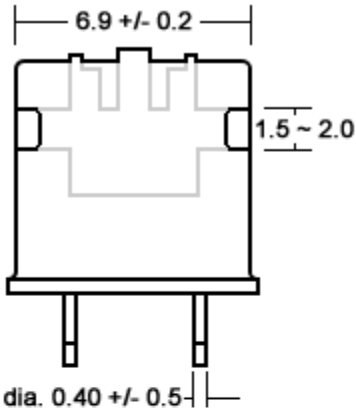


Figure 1) UM-1

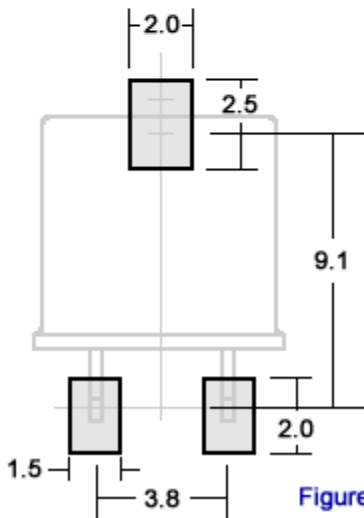
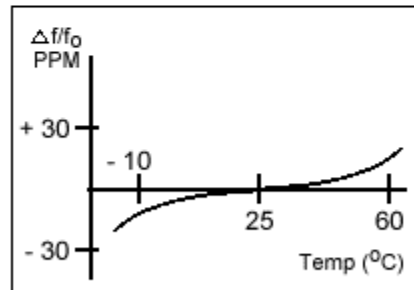


Figure 2) UM-1 Land Pattern - Top View

**FREQUENCY VS TEMPERATURE CURVE**



**PART NUMBER GUIDE**

Series Number	Frequency	Load Capacitance	Tolerance @ +25°C	Tolerance Over Temp (°C)	Operating Temp (°C)
201	-11.228M	-SR	- 20	G	W
Oscilent UM-1 Surface Mount Crystal	Enter desired frequency e.g. 12.0M for 12.000 MHz. See table below for standard frequencies.	See table below for standard load capacitances and enter your required load capacitance. e.g. 20 = 20pF Enter SR for Series	Blank * = ±30 PPM 50 = ±50 PPM 20 = ±20 PPM 15 = ±15 PPM 10 = ±10 PPM	Blank* = ±50 PPM G = ±30 PPM H = ±20 PPM K = ±15 PPM L = ±10 PPM	Blank* = -10~+60 S = -20~+70 T = -30~+80 W = -40~+85

**NOTE:** - Deviations on all parameters available. Please consult Oscilent for details.

**DEFINITIONS:** - Click on the characteristic names above for definitions of that particular characteristic.

**\*STANDARDS:** - "Blank" part number selections indicate standard variables for that particular characteristic.

**\*\*PACKAGING:** - Add -TR for Tape/Reel. Click [here](#) for tape/reel specifications

**STANDARD FREQUENCIES / LOAD CAPACITANCE - FOR GUIDE ONLY / OTHER FREQ/LOADS AVAILABLE**

FREQUENCY (MHz)	LOAD (pF)							
	Series	12	13	16	17	18	20	30
7.3728	Std.	-	-	-	-	-	Std.	-
7.680	-	-	-	-	-	-	Std.	-

8.000	Std.	-	-	-	-	-	Std.	Std.
8.192	Std.	-	-	-	-	-	-	-
9.216	Std.	-	-	-	-	-	Std.	-
9.8304	-Std.	-	-	-	-	-	Std.	-
10.000	-Std.	-	-	-	-	-	-	-
10.738635	Std.	-	-	-	-	-	-	-
11.000	Std.	-	-	-	-	-	-	-
11.046	Std.	-	-	-	-	-	-	-
11.0592	Std.	-	-	-	-	-	Std.	Std.
11.228	Std.	-	-	-	-	-	-	-
11.520	Std.	-	-	-	-	-	-	-
11.98135	Std.	-	-	-	-	-	-	-
12.000	Std.	-	-	-	-	-	Std.	Std.
12.000393	-	-	-	-	-	-	-	-
12.096	Std.	-	-	-	-	-	-	-
12.288	Std.	-	-	-	-	-	Std.	-
13.5168	Std.	-	-	-	-	-	-	-
14.31818	Std.	-	-	-	-	-	Std.	-
14.690	Std.	-	-	-	-	-	-	-
14.7456	Std.	-	-	-	-	-	Std.	-
15.000	Std.	-	-	-	-	-	-	-
16.000	Std.	-	-	-	-	-	Std.	-
16.000312	-	-	-	-	-	-	-	-
18.000	Std.	-	-	-	-	-	Std.	-
18.432	Std.	-	-	-	-	-	Std.	-
19.6608	Std.	-	-	-	-	-	-Std.	-
20.000	Std.	-	-	-	-	-	Std.	-
22.1184	Std.	-	-	-	-	-	-	-
24.000(F)	Std.	-	-	-	-	-	Std.	-
24.00014 (F)	-	-	-	-	-	-	-	-
35.2512 (OT)	-	-	-	-	-	-	-	-
38.00053 (OT)	-	-	-	-	-	-	-	-
40.32 (OT)	-	-	-	-	-	-	-	-
48.00 (OT)	Std.	-	-	-	-	-	-	-
49.86 (OT)	-	-	-	-	-	-	Std.	-
<b>FREQUENCY (MHz)</b>	<b>Series</b>	<b>12</b>	<b>13</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>20</b>	<b>30</b>
<b>LOAD (pF)</b>								
<b>F = Fundamental   OT = 3RD OT</b>								

**NOTE: Other frequencies and load capacitance available. PLEASE SPECIFY IN PART NUMBER GUIDE**

**Oscilent Corporation** - CALL **949.252.0522**

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