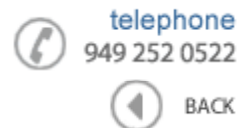


**Data Sheet**

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)

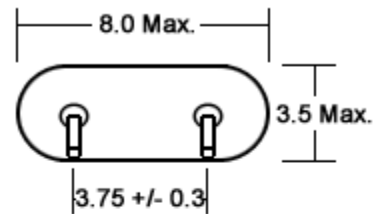
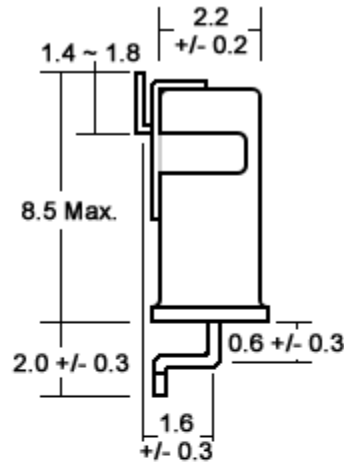
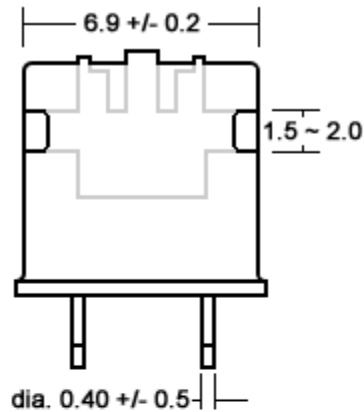


Figure 1) UM-1

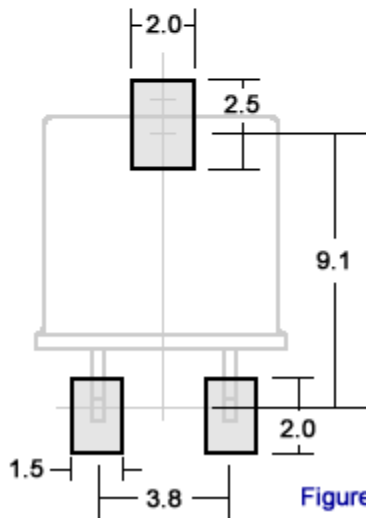
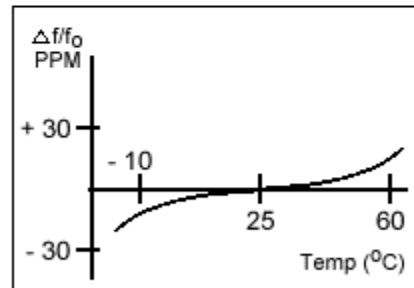


Figure 2) UM-1 Land Pattern - Top View

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.	-
FREQUENCY (MHz)	Series	12	13	16	17	18	20	30
	LOAD (pF)							
F = Fundamental OT = 3RD OT								

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

Oscilent Corporation - CALL **949.252.0522**

Series No.: [201](#)

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