



**Data Sheet**



Product Category: SMD Quartz Crystal

Series Number	Package	Description	Last Modified
202	UM-5 Gull Wing	SMD Quartz Crystal	Jan. 01 2002

**FEATURES**

- 10 MHz to 200 MHz frequency range
- Smaller footprint than Series 201
- Resistance welded
- Low profile
- Tape and reel



**OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS**

PARAMETERS		CHARACTERISTICS	UNITS
Frequency Range	$f_o$	10.00 ~ 225.000	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	10 ~ 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
10.0 ~ 15.9	Fundamental	60	30.0 ~ 150.0	3rd Overtone	80
16.0 ~ 50.0	Fundamental	50	100.0 ~ 200.0	5th Overtone	120

**PACKAGE DIMENSIONS (mm)**

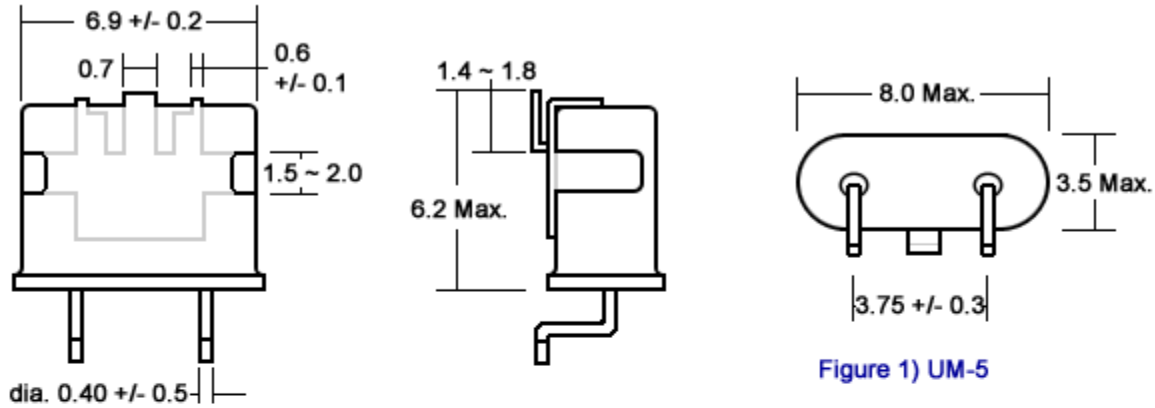


Figure 1) UM-5

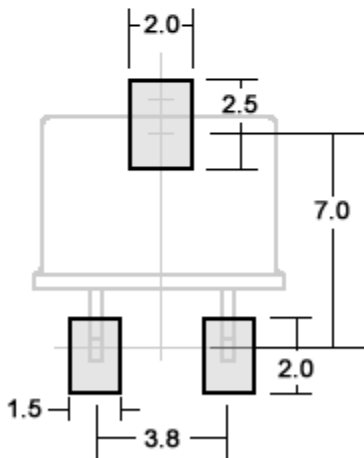
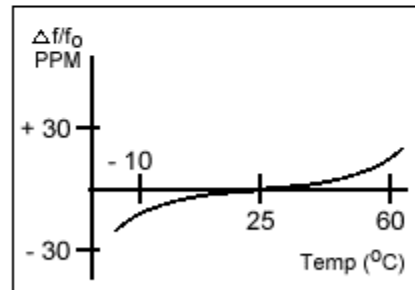


Figure 2) UM-5 Land Pattern - Top View

**FREQUENCY VS TEMPERATURE CURVE**



**PART NUMBER GUIDE**

Series Number	Frequency	Load Capacitance	Tolerance @ +25oC	Tolerance Over Temp (oC )	Operating Temp ( oC )
202	- 10.000M	-20	- 20	G	S
Oscilent UM-5 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
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>								

**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.: 202**

18195 East McDermott Street, Building D, Irvine, CA 92614, USA  
 Fax: 949.252.0599, E-Mail: Sales@Oscilent.com