



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)

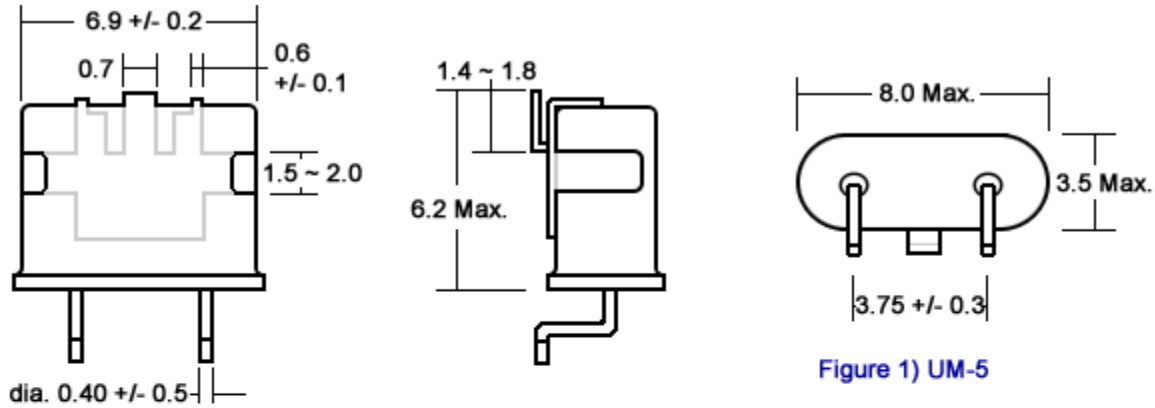


Figure 1) UM-5

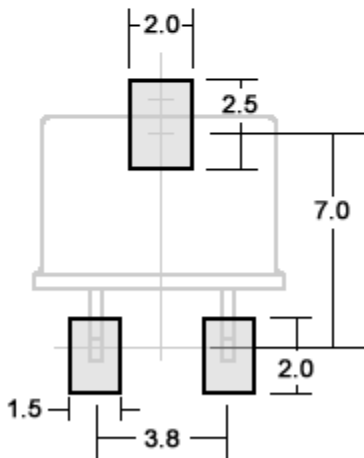
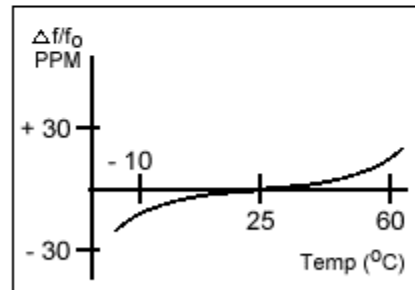


Figure 2) UM-5 Land Pattern - Top View

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.	-
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**

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