

## DETAILED SPECIFICATION FOR QCM SENSOR PART # QCM5140Ti133-060-B

### KEY FEATURES

- 5 MHz
- 14.0 MM SENSOR DIAMETER
- 13.3 / 6.0 MM ELECTRODE DIAMETER
- TITANIUM ELECTRODES
- BALZER TEST JIG COMPATIBLE
- 100% TESTED ELECTRICALLY AND VISUALLY

### DESCRIPTION

For use in film thickness monitors. Very reliable function due to good adhesion of electrodes. Long operational life time. One sided circumference contact back side electrode.

### GENERAL

Item	Parameter	Value
1.0	Sensor design	Plano-Convex
2.0	Angle of cut	AT
3.0	Jig compability	Balzer

### ELECTRICAL

4.1	Nominal frequency	5.000 MHz
4.2	Center frequency	4.960 MHz
4.3	Frequency tolerance	+/- 7 KHz
4.4	Q-value	> 150 000
4.5	Shunt capacitance, C0	Typ. 10 pF

### ELECTRODES

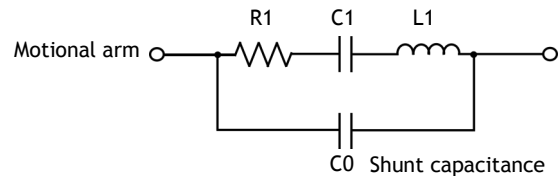
5.1	Front electrode diameter	13.3 mm
5.2	Front electrode material	Ti, Titanium
5.3	Back electrode diameter	6.0 mm
5.4	Back electrode material	Cr/Ag, Chromium / Silver
5.5	One sided contacting	No

### MECHANICAL & DRAWING

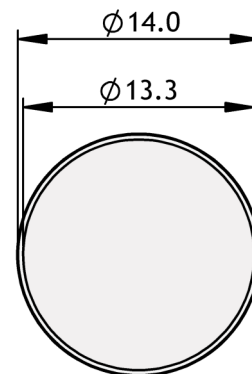
6.1	Nominal blank diameter	14.0 mm
6.2	Crystal axes orientation	No
6.3	Surface appearance	Matte
6.4	Bevel	No



Quartz Crystal  
Electrical equivalent 2pole

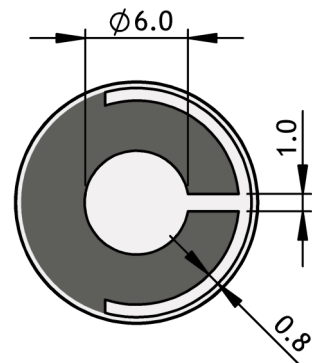


Front electrode



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Back electrode



## DETAILED SPECIFICATION FOR QCM SENSOR PART # QCM5140Ti133-060-B

### MARKING / LABEL

7.1	QR code	Simple info readout with QR app
7.2	Part Number	QCM5140Ti133-60-B
7.3	Nom. frequency	5.000 MHz
7.4	Sensor diameter	14.0 mm
7.5	Electrode material	Ti, Titanium



### PACKAGING & STORAGE

8.1	Sensor package type	Revolving plastic depository with a transparent lid for easy inspection
8.2	Storage quantity	10 covered dust and shock protected storage positions and 1 open position for ejection
8.3	Package protection	Package is protected with a vacuum sealed plastic bag for prolonged storage and shipping
8.4	Storage recommendation	After opening plastic vacuum bag preferably store in dust free dry Air or Nitrogen @ room temperature.
8.5	Cleaning	No cleaning necessary before use. However after prolonged storage in humid air a light cleaning in a ultrasonic bath of either ultraclean water or alcohol without any denaturation can be done to remove adsorbed molecules on the surfaces

### REVISION HISTORY

	Date	Description
9.0	2009.02.06	First issue
9.1	2014.08.15	New detailed datasheet
9.2		
9.3		
9.4		
9.5		

DETAILED SPECIFICATION FOR QCM SENSOR PART # QCM5140Ti133-060-B

PRODUCT PART NUMBER DESIGNATION AND INTERPRETATION. FOR MORE ALTERNATIVES SEE PAGE 3

Item	Product Category	1. Nominal Frequency	2. Sensor Diameter	3a. Coating Multiple layer 3b. Coating Single layer	4. Electrode Diameter Ø Front-Back	5. Jig/Holder Compability
Parameter	QCM	5 MHz	14.0	Ti, Titanium	13.3-6.0mm	Balzer
Code	QCM	5	140	Ti	133-060	B

Part number designation : QCM5140Ti133-60-B

PART NUMBER DESIGNATION OPTIONS (AVAILABLE TYPES)

1. Nom Frequency	Designation	2. Sensor Diameter Ø	Designation	3a. Coating -Multiple layer	Designation
5.00 MHz	5	8.90 mm	089	Chromium/Gold	CrAu
6.00 MHz	6	12.45 mm	125	Silver/Aluminum	AgAl
9.00 MHz	9	14.0 mm	140	Nickel/Silver	NiAg
10.7 MHz	10	25.4 mm	254	Titanium/Gold	TiAu
				Chromium/Gold/SiO2	CrAuSiO2
				Nickel/Silver	NiAg

4. Electrode Diameter Ø Front-Back	Designation	5. Jig/Holder Compability	Designation	3b. Coating -Single layer	Designation
5.1-5.1mm	051-051	Balzer	B	Gold	Au
5.4-5.4 mm	054-054	Sloan/Ulvac	S	Silver	Ag
7.5-5.0mm	075-050	Inficon*	I	Copper	Cu
7.5-7.5mm	075-075	Q Sense	Q	Titanium	Ti
11.5-11.5 mm	115-115	Maxtek 25.4mm	M	Aluminum	Al
12.0-5.0mm	120-050	HC-50	H		
12.8-6.4 mm	128-064	Custom	C		
13.0-6.4 mm	130-064				
13.0-13.0mm	130-130				
13.3-6.0mm	133-060				

\* also compatible with Maxtek, Sycon, Sigma ,Intellimetrics, Fil-Tech, Phelps

Custom made products: In case you need something else that is not listed above, please feel free to ask and we will check our possibilities. Use our contact form under Contact. [www.quartzpro.com](http://www.quartzpro.com)

