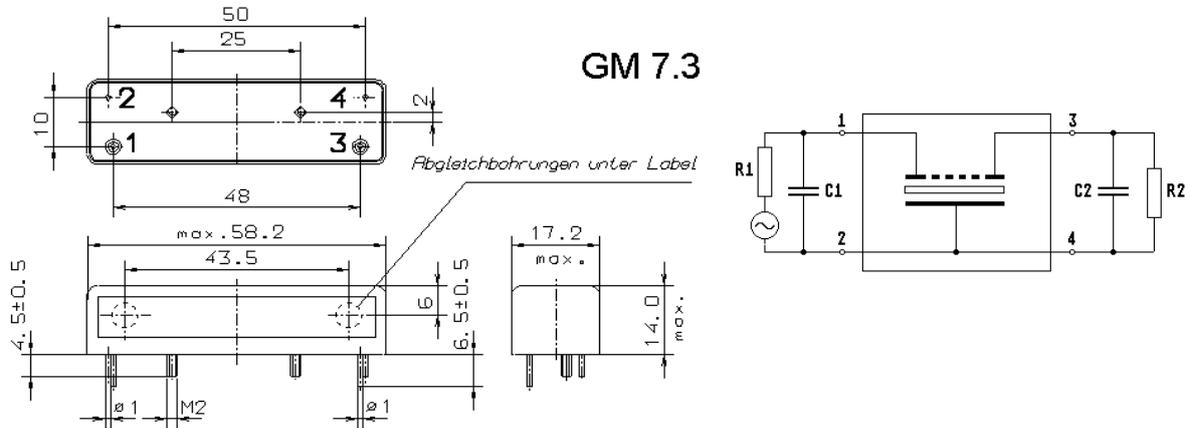


Specification for monolithic crystal filter **MQF 40.048 - 2000/02V1**

**1. General**

1.1. Package:



1.2. Type name:	MQF 40.048-2000/02V1
1.3. Number of poles:	6
1.4. Operable temperature range:	-40°C to +85°C
1.5. Operating temperature range:	-20°C to +70°C
1.6. Storage temperature range:	-55°C to +90°C

**2. Electric values**

2.1. Nominal centre frequency $f_0$ :	40.048 MHz
2.2. <b>Pass band</b>	
2.2.1. Bandwidth between 3 dB - frequencies:	$\geq f_0 \pm 10$ kHz
2.2.2. Ripple at $f_0 \pm 4.0$ kHz:	$\leq 1.5$ dB at 25°C $\leq 2.0$ dB in operating temperature range
2.2.3. Change of group delay between different samples of the same type:	$\leq 300$ $\mu$ s ( at $f_0 \pm 4$ kHz )
2.2.4. Insertion loss:	$\leq 4.0$ dB at 25°C $\leq 4.5$ dB in operating temperature range ( measured on smallest attenuation in pass band )

**2.3. Stop band**

2.3.1. $f_0 \pm 76$ kHz	$\geq 60$ dB
2.3.2. 39.932 MHz.....39.972 MHz	$\geq 70$ dB
2.3.3. $f_0 + 76$ kHz.....+250 MHz	$\geq 60$ dB
2.3.4. Spurious responses:	$\geq 40$ dB
2.4. Terminating impedance ( input and output ):	50 $\Omega$ // 0 pF

## 2.5. Intermodulation

### 2.5.1. Out band - intermodulation

frequency 1:	$f_0 \pm 30$ kHz
frequency 2:	$f_0 \pm 60$ kHz
input power level at pin 1( input ):	-6 dBm
IM:	$\geq 75$ dB ( in relation to pin 3 )

### 2.5.2. Inband - intermodulation

frequency 1:	$f_0 +1$ kHz
frequency 2:	$f_0 -1$ kHz
input power level at pin 3 ( output ):	0 dBm
IM:	$\geq 50$ dB ( in relation to pin 1 )

2.6. Maximum input power level: 0 dBm

2.7. Maximum input power level: 20 dBm ( without damage )

2.8. It is possible to tune the filter after removing the label from the side of the filter:

Input: with square-headed screwdriver 1.15 x 1.15 mm

Output: with screwdriver 1.0 x 1.5 mm

The consequence of this is that guarantee become void for points 2.1 to 2.5 as well as 3.3 and 3.5.

## 3. Environment conditions

3.1. Vibration according to IEC 68-2-6 test FC ( filter case shall be fastened to the vibration table )

- frequency range ( with total amplitude 0.7 mm ):	10 Hz - 55 Hz
- acceleration:	49.05 m/s <sup>2</sup>
- duration:	0.5 hours

3.2. Shock according to IEC 68-2-27, test Ea

- number of directions:	3
- peak acceleration:	490.5 m/s <sup>2</sup>
- duration of the nominal pulse:	11 ms
- number of shocks:	3

3.3. Humidity test Db 40 according to IEC 68-2-30 21 cycles

3.4. Aging: 1000 hours at 70°C  $\pm$  3°C

3.5. Change of temperature according to IEC 68-2-14

- temperatures:	-25°C / 70°C
- exposure time:	30 minutes
- cycles:	10

## 4. Others

4.1. Design: case soldered

4.2. Weight:  $\leq 35$  g

5. **Marking:** manufacturer, date code  
MQF 40.048-2000/02V1

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Edited by: \_\_\_\_\_ date: \_\_\_\_\_ name: \_\_\_\_\_