Specification for monolithic crystal filter

MQF 40.048-0800/02V1

1. General

1.1. Package:

1.2. Type name: MQF 40.048-0800/02V1

1.3. Number of poles: 4

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 fo: 40.048 MHz

2.2. Pass band

2.2.1. Bandwidth between 1 dB - frequencies: ≥ fo ± 4.0 kHz

2.2.2. Ripple: ≤ 1.0 dB at fo ± 4.0 kHz

2.2.3. Change of group delay between different samples of the same type: ≤ 300 µs (at fo ± 4.0 kHz)

2.2.4. Insertion loss: ≤ 3.0 dB

( measured on smallest attenuation in pass band )

2.3. Stop band

2.3.1. fo + 76 kHz ≥ 60 dB

2.3.2. 39.942 MHz......40.0 MHz ≥ 80 dB

2.3.3. fo +76 kHz........+250 MHz ≥ 60 dB

2.3.4. Spurious responses: ≥ 40 dB
2.4. Terminating impedance (input and output): \( 50 \, \Omega \// 0 \, \text{pF} \)

2.5. **Intermodulation**

2.5.1. Out band - intermodulation
- frequency 1: \( f_0 \pm 30 \, \text{kHz} \)
- frequency 2: \( f_0 \pm 60 \, \text{kHz} \)
- input power level at pin 1 (input): \(-6 \, \text{dBm}\)
- IM: \( \geq 71 \, \text{dB} \) (in relation to pin 3)

2.5.2. Inband - intermodulation
- frequency 1: \( f_0 +1 \, \text{kHz} \)
- frequency 2: \( f_0 -1 \, \text{kHz} \)
- input power level at pin 3 (output): \(0 \, \text{dBm}\)
- IM: \( \geq 50 \, \text{dB} \) (in relation to pin 1)

2.6. Maximum input power level: \( 0 \, \text{dBm} \)
2.7. Maximum input power level: \( +20 \, \text{dBm} \) (without damage)

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): \(10 \, \text{Hz} - 55 \, \text{Hz}\)
- acceleration: \(49.05 \, \text{m/s}^2\)
- duration: \(0.5 \, \text{hours}\)

3.2. Shock according to IEC 68-2-27, test Ea
- number of directions: \(3\)
- peak acceleration: \(490.5 \, \text{m/s}^2\)
- duration of the nominal pulse: \(11 \, \text{ms}\)
- 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: \(30 \, \text{minutes}\)
- cycles: \(10\)

4. **Others**

4.1. Design: case soldered
4.2. Weight: \(< 35 \, \text{g}\)

5. **Marking**
- manufacturer, date code
- MQF 40.048-0800/02V1

_____________________________________________________

Edited by: ___________________________ date: ______________ name: ___________________________