Specification for crystal filter: **Q F 140.0-5000/07**

1. **General**
   1.1. **Package:**

   ![Diagram](image)

   **GS 17.2**

1.2. **Type name:** QF 140.0-5000/07

1.3. **Number of poles:** 4

1.4. **Operating and storage temperature range:** -40°C to +85°C

2. **Electric values**

2.1. **Nominal centre frequency fo:** 140.0 MHz

2.2. **Pass band**

   2.2.1. **Bandwidth between 3 dB - frequencies:** > fo ± 25 kHz
   2.2.2. **Ripple:** < 2.0 dB at fo ± 20 kHz
   2.2.3. **Insertion loss:** < 5.0 dB
      (measured on smallest attenuation in pass band)

2.3. **Stop band**

   2.3.1. **fo ± 110 kHz** > 40 dB (except spurious)
   2.3.2. **alternate attenuation** > 60 dB (except spurious)

2.4. **Terminating impedance R/C (input and output):** 50 Ω // 0 pF

2.5. **Input power level for reference measurement:** -10 dBm

   2.5.1. **Maximum input power level without destruction:** +5 dBm

3. **Marking:**

   Manufacturer, date code

   QF 140.0-5000/07

4. **Environment conditions:**

   Vectron MIL standard

5. **Filters are Pb-free and 2002/95/EC RoHS compliant**
6. Air reflow temperature conditions

<table>
<thead>
<tr>
<th>conditions</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>average ramp-up rate (30°C to 217°C)</td>
<td>less than 3°C/second</td>
</tr>
<tr>
<td>&gt; 100°C</td>
<td>between 300 and 600 seconds</td>
</tr>
<tr>
<td>&gt; 150°C</td>
<td>between 240 and 500 seconds</td>
</tr>
<tr>
<td>&gt; 217°C</td>
<td>between 30 and 150 seconds</td>
</tr>
<tr>
<td>peak temperature</td>
<td>max. 260°C</td>
</tr>
<tr>
<td>time within 5°C of peak temperature</td>
<td>between 10 and 30 seconds</td>
</tr>
<tr>
<td>cool-down rate (starting at peak temperature to 50°C)</td>
<td>less than 6°C / second</td>
</tr>
<tr>
<td>time from 30°C to peak temperature</td>
<td>no more than 300 seconds</td>
</tr>
</tbody>
</table>

**Chip-mount air reflow profile**

![Diagram showing temperature and time values for air reflow profile](image-url)
7. Taping:

**Maximum 500 pcs. / reel**

**Tape dimension (mm)**

- **Trailer**
  - Cover tape
  - Leader part (400mm min.)
  - Components placed

- **Leader part (400mm min.)**
  - Cover tape

**Tape (all dimensions in mm)**

- \( W = 56.0 \pm 0.3 \) mm
- \( S_o = 52.4 \pm 0.1 \) mm
- \( P_o = 4.0 \pm 0.1 \) mm
- \( P_1 = 20.0 \pm 0.1 \) mm
- \( P_2 = 2.0 \pm 0.15 \) mm
- \( D_o = 1.5 \pm 0.1 / -0 \) mm
- \( D_1 = 2.0 \) mm
- \( E = 1.75 \pm 0.1 \) mm
- \( F = 26.2 \pm 0.15 \) mm
- \( K_o = 6.6 \pm 0.1 \) mm
- \( A_o = 13.2 \pm 0.15 \) mm
- \( B_o = 32.3 \pm 0.1 \) mm
- \( t = 0.4 \pm 0.05 \) mm

**Reel (all dimension in mm)**

- \( A = \phi 330 \text{ max.} \)
- \( C = \phi 13.0 \pm 0.5/-0.2 \)
- \( N = \phi 100 \text{ min.} \)
- \( W_1 = 45.5 \pm 0.25 \) mm
- \( W_2 = 49.5 \pm 0.5 \) mm

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Edited by: ______________________ date: ______________________ name: ______________________