Specification for crystal filter:  

**Q F 1 4 0 . 0 - 1 0 0 0 0 / 0 6**

### 1. General

1.1. Package:

![Package Diagram]

- **Type name:** QF 140.0-10000/06
- **Number of poles:** 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 ± 50 kHz

2.2.2. Ripple:

- < 2.0 dB at fo ± 35 kHz

2.2.3. Insertion loss:

- < 5.0 dB  
  (measured on smallest attenuation in pass band)

### 2.3. **Stop band**

2.3.1. fo ± 200 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 140.0-10000/06

### 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**

- Temperature / °C
- Max. 260°C
- 217°C
- Max. 300 s
- 10 ... 30 s
- 30 ... 150 s
- Time / s
7. Taping:

**Maximum 500 pcs. / reel**

Diagram showing the taping process with labels for tape dimensions and reel specifications.

**Tape dimension (mm)**

- **W**: $56.0 \pm 0.3$
- **So**: $52.4 \pm 0.1$
- **Po**: $4.0 \pm 0.1$
- **P1**: $20.0 \pm 0.1$
- **P2**: $2.0 \pm 0.15$
- **Do**: $1.5 \pm 0.1 / -0$
- **D1**: $2.0 \text{ min.}$
- **E**: $1.75 \pm 0.1$
- **F**: $26.2 \pm 0.15$
- **Ko**: $6.6 \pm 0.1$
- **Ao**: $13.2 \pm 0.1$
- **Bo**: $32.3 \pm 0.1$
- **t**: $0.4 \pm 0.05$

**Reel (all dimensions in mm)**

- **A**: \(\phi 330\) max.
- **C**: \(\phi 13.0 +0.5/-0.2\)
- **N**: \(\phi 100\) min.
- **W1**: $45.5 \pm 0.25$
- **W2**: $49.5 \pm 0.5$

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Edited by: __________________________ date: __________________________ name: __________________________