**Features**

- Lead free
- RoHS compliant*
- 8 T-filters with common ground
- Stable thin-film-on-silicon technology
- Ultra-miniature packages to JEDEC standards

**Applications**

- Bidirectional EMI/RFI filtering on bus lines
- High frequency applications
- Ideal for space-constrained applications

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**General Information**

T-Filters are typically used for bidirectional filtering of EMI and RFI on high speed data lines connecting computer with peripheral. These Silicon-based, Tantalum-Nitride resistors and capacitors feature excellent stability, temperature coefficients and tracking performance. This product series conforms to JEDEC standards.

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**Electrical & Environmental Characteristics**

<table>
<thead>
<tr>
<th>Electrical Characteristics</th>
<th>Symbol</th>
<th>Minimum</th>
<th>Nominal</th>
<th>Maximum</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Range</td>
<td>R</td>
<td>±10 %</td>
<td></td>
<td>100</td>
<td>Ω</td>
</tr>
<tr>
<td>Resistor Tolerance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Rating per Resistor @ 70 °C</td>
<td></td>
<td></td>
<td></td>
<td>0.1</td>
<td>Watt</td>
</tr>
<tr>
<td>Capacitor Range</td>
<td>C</td>
<td>±20 %</td>
<td></td>
<td>250</td>
<td>pF</td>
</tr>
<tr>
<td>Capacitor Tolerance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacitor Breakdown Voltage</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>V</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>V</td>
</tr>
<tr>
<td>ESD</td>
<td>2 K</td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>T_J</td>
<td>-55</td>
<td></td>
<td>+125</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>T_stg</td>
<td>-65</td>
<td></td>
<td>+150</td>
<td>°C</td>
</tr>
<tr>
<td>Power Rating per Package @ 70 °C</td>
<td></td>
<td></td>
<td></td>
<td>1.0</td>
<td>Watt</td>
</tr>
</tbody>
</table>

**Environmental Characteristics**

- ESD: 2 K
- Operating Temperature: T_J = -55 to +125 °C
- Storage Temperature: T_stg = -65 to +150 °C
- Power Rating per Package @ 70 °C: 1.0 Watt

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**Filter Response**

![Filter Response Graph](image)

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.
Thin Film on Silicon 2CFB T-Filter

Mechanical Characteristics

QSOP Package Dimensions

Governing dimensions are in mm. Dimensions in parentheses are in inches and are approximate.

JEDEC Reference Number MO-137.

QSOP Package Power Temperature Derating Curve

Typical Part Marking

Standard RC Values

<table>
<thead>
<tr>
<th>R1 Value (ohms)</th>
<th>C1 Value (pF)</th>
<th>Cap. BV (typ.)</th>
<th>Part Number (Tape &amp; Reel)</th>
<th>Part Number (Tubes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>200</td>
<td>25</td>
<td>2CFB-250/201M-Q20R</td>
<td>2CFB-250/201M-Q20T</td>
</tr>
<tr>
<td>47</td>
<td>33</td>
<td>25</td>
<td>2CFB-470/330M-Q20R</td>
<td>2CFB-470/330M-Q20T</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>25</td>
<td>2CFB-101/101M-Q20R</td>
<td>2CFB-101/101M-Q20T</td>
</tr>
</tbody>
</table>
Thin Film on Silicon 2CFB T-Filter

Dispensing

For large quantities, the product will be dispensed in Tape and Reel (see diagram below).

<table>
<thead>
<tr>
<th>Package</th>
<th>A₀</th>
<th>B₀</th>
<th>K₀</th>
<th>Width</th>
<th>Pitch</th>
<th>No. of Pieces per 13 reel</th>
<th>No. of Pieces per tube</th>
</tr>
</thead>
<tbody>
<tr>
<td>QSOP</td>
<td>6.5 (0.256)</td>
<td>9.0 (0.354)</td>
<td>2.1 (0.083)</td>
<td>16 (0.630)</td>
<td>8 (0.315)</td>
<td>3,500</td>
<td>56</td>
</tr>
</tbody>
</table>

How To Order

2 CFB-250/201 M-Q 20 T LF

Product Class
- Thin-Film-on-Silicon

Product Function
- CFB = T-Filter

Resistance Value Code
- 1st two digits are significant,
- 3rd digit = number of zeros to follow
- to give resistance value in ohms.

Capacitance Code
- 1st two digits are significant,
- 3rd digit = number of zeros to follow
- to give capacitor value in pF.

Standard Grade
- M = ±10 %
- C = ±20 %

Standard Package Style
- Q = QSOP

Pin Count
- Q = 20

Dispensing
- R = Reel
- T = Tube

Terminations
- LF = 100 % Sn (lead free)

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www.bourns.com

Specifications are subject to change without notice.
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