Nexperia’s new CB3Q family has been developed for broadband communication, computing and networking applications. Our CB3Q technology offers a charge pump to switch 5 V signals in combination with low supply voltage range.

These low voltage bus interface solutions have a high bandwidth 0.5 GHz bus switch performance with low and flat On-resistance, low power consumption and a low input/output capacitance that minimize capacitive loading and signal distortion on the data bus. Currently, the Nexperia CB3Q family consists of two solutions: a Dual SP4T switch named 74CB3Q3253 and a Quad SPDT switch named 74CB3Q3257.

Key Features
- Wide supply voltage range: from 2.3 V to 3.6V
- Overvoltage-tolerant switch inputs
- Support for mixed-mode voltage operation
- I_{off} circuitry for partial power-down operation

Benefits
- Switches 0 - 5 V signals at 3.3 V supply voltage
- High 0.5 GHz bandwidth for data path
- Low and Flat On-resistance of switch
- Lower power dissipation
- Available in leaded & leadless package

Applications
- Broadband communication
- Computing and networking
- Bus isolation
- Sensor multiplexing
- Memory interleaving
### Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>74CB3Q3253</td>
<td>Dual 1-of-4 FET multiplexer/demultiplexer with charge pump</td>
<td>Dual SP4T switch</td>
</tr>
<tr>
<td>74CB3Q3257</td>
<td>4-bit 1-of-2 FET multiplexer/demultiplexer with charge pump</td>
<td>Quad SPDT switch</td>
</tr>
</tbody>
</table>

### Parametrics

<table>
<thead>
<tr>
<th>V&lt;sub&gt;cc&lt;/sub&gt; Range</th>
<th>R&lt;sub&gt;on&lt;/sub&gt;</th>
<th>C&lt;sub&gt;on (min)&lt;/sub&gt;</th>
<th>Bandwidth</th>
<th>Temperature Range</th>
<th>Static Current (I&lt;sub&gt;cc&lt;/sub&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3 – 3.6 V</td>
<td>4 Ω</td>
<td>3.5 pF</td>
<td>0.5 GHz</td>
<td>−40 °C to +85 °C</td>
<td>0.4 mA (typ.)</td>
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</table>

### Packages

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Name</th>
<th>Package family</th>
<th>Dimensions (L x W x H, in mm)</th>
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</thead>
<tbody>
<tr>
<td>BQ</td>
<td>SOT763-1</td>
<td>DQFN16</td>
<td>3.5 x 1.0 x 0.5, 0.5</td>
</tr>
<tr>
<td>PW</td>
<td>SOT403-1</td>
<td>TSSOP16</td>
<td>6.4 x 5.0 x 1.1, 0.65</td>
</tr>
</tbody>
</table>

### Circuit diagram

#### 74CB3Q3253

- Type: Dual SP4T switch
- SOT763-1 DQFN16
- Dimensions: 3.5 x 1.0 x 0.5, 0.5

#### 74CB3Q3257

- Type: Quad SPDT switch
- SOT403-1 TSSOP16
- Dimensions: 6.4 x 5.0 x 1.1, 0.65
CB3Q technology positioning

Low On-resistance for switching signals from 0 V to 5V with minimized losses

- $T_a = 25^\circ C$
- $I_{SW} = -15 \ mA$

- CBTVD $V_{CC} = 3.3V$
- CBT $V_{CC} = 5V$
- CB3Q $V_{CC} = 3.3V$

High bandwidth products (0.5GHz)

Download the product datasheet: 74CB3Q3253 74CB3Q3257