FSA8049  
Audio Jack Detection and Configuration, MIC / GND Cross Point Switch

**Features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Detection</td>
<td>Audio Plug GND &amp; MIC Polarity</td>
</tr>
<tr>
<td>VDD</td>
<td>2.5 to 4.4V</td>
</tr>
<tr>
<td>THD (MIC)</td>
<td>0.002% Typical</td>
</tr>
<tr>
<td>ESD (IEC 61000-4-2) (Air Gap)</td>
<td>15kV</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to 85°C</td>
</tr>
<tr>
<td>Package</td>
<td>9-Ball WLCSP 3x3 Array, 0.4mm Terminal Pitch, 250µm Ball</td>
</tr>
<tr>
<td>Top Mark</td>
<td>M3</td>
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</tbody>
</table>

**Applications**

- Cellular Phones, Smart Phones
- MP3 and Portable Multimedia Player

**Description**

The FSA8049 is an audio jack detection switch for 3- or 4-pole accessories. The FSA8049 detects the locations of ground (GND) and microphone (MIC) poles on the audio plug and automatically routes them to the appropriate connections. This allows the end user to plug accessories, such as headsets with different audio pole configurations, into the mobile device and have them operate correctly.

- Detects 3- or 4-pole audio accessories
- Detects polarity of GND and MIC on 4-pole plugs
- Automatically routes GND and MIC to audio jack terminals

**Related Resources**

- For evaluation boards and questions, please contact: Analog.Switch@fairchildsemi.com.

**Typical Application**

![Typical Application Diagram]

**Figure 1. Mobile Phone Example**
Physical Dimensions

Figure 6. 9-Ball, Wafer-Level Chip-Scale Package (WLCSP), 3x3 Array, 0.4mm Pitch, 250µm Ball

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Ordering Information

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<tr>
<th>Part Number</th>
<th>Operating Temperature Range</th>
<th>Top Mark</th>
<th>Package</th>
<th>D</th>
<th>E</th>
<th>X</th>
<th>Y</th>
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<tbody>
<tr>
<td>FSA8049UCX</td>
<td>-40 to +85°C</td>
<td>M3</td>
<td>9-Ball, Wafer-Level Chip-Scale Package (WLCSP), 3x3 Array, 0.4mm Pitch, 250µm Ball</td>
<td>1.16mm</td>
<td>1.16mm</td>
<td>0.18mm</td>
<td>0.18mm</td>
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WLCSP Packing - Embossed Tape
FSA8049UCX

Packaging Description:

WLCSP products are classified under Moisture Sensitive Level 1 and are packed in moisture barrier bag for added protection.

The carrier tape is made from dissipative polystyrene or polycarbonate resin. The cover tape is a multilayer film primarily composed of polyester film, adhesive layer, heat activated sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3000 units per 178 mm diameter reel. Up to three reels are packed in each intermediate box. The reels is made of polystyrene plastic (anti-static coated or intrinsic).

These full reels are individually barcode labeled and placed inside a pizza box made of recyclable corrugated brown paper with a Fairchild logo printing. The reel is packed single reel in the pizza box. And these pizza boxes are placed inside a barcode labeled shipping box which comes in different sizes depending on the number of parts shipped.

ESD Logo Label sample

F63TNR Label sample

Tape Leader and Trailer Configuration

Rev 1, 25102011

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WLCSP Embossed Tape Dimension

Dimensions are in millimeters

<table>
<thead>
<tr>
<th>Package</th>
<th>Ao</th>
<th>Bo</th>
<th>D</th>
<th>D1 min</th>
<th>E</th>
<th>F</th>
<th>Ko</th>
<th>P1 TYP</th>
<th>Po TYP</th>
<th>P2 TYP</th>
<th>P2 +/0.05</th>
<th>T TYP</th>
<th>Tc +/0.005</th>
<th>+/0.3</th>
<th>W TYP</th>
<th>Wc TYP</th>
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<tr>
<td>FSA8049UCX</td>
<td>1.35</td>
<td>1.35</td>
<td>1.55</td>
<td>0.6</td>
<td>1.75</td>
<td>3.5</td>
<td>0.76</td>
<td>4</td>
<td>4</td>
<td>2.0</td>
<td>0.254</td>
<td>0.06</td>
<td>8</td>
<td>5.3</td>
<td></td>
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Notes: Ao, Bo, and Ko dimensions are determined with respect to the EIA/JEDEC RS-481 rotational and lateral movement requirements (see sketches A, B, and C).

20 deg maximum component rotation
Sketch A (Side or Front Sectional View) Component Rotation

0.5 mm maximum
Typical component cavity center line
Sketch C (Top View) Component lateral movement

Shipping Reel Dimension

Dimensions are in millimeters

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<thead>
<tr>
<th>Tape Width</th>
<th>Dia A max</th>
<th>Dim B min</th>
<th>Dia C +/5/-2</th>
<th>Dia D min</th>
<th>Dim N min</th>
<th>Dim W1 +2/-0</th>
<th>Dim W2 max</th>
<th>Dim W3 (LSL - USL)</th>
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<tbody>
<tr>
<td>8</td>
<td>178</td>
<td>1.5</td>
<td>13</td>
<td>20.2</td>
<td>55</td>
<td>8.4</td>
<td>14.4</td>
<td>7.9~10.4</td>
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<th>Definition</th>
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