INTEGRATED EMI FILTER/ESD PROTECTION FOR LCD DISPLAYS IN MOBILE HANDSETS

New Product Information and Sales Kit

Manufactured by:
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Garden Grove, CA
Telephone: (714) 891-6171

More than solutions – enabling possibilities
INTRODUCTION

CONFIDENTIAL INFORMATION
This new product introduction guide is intended for use only by Microsemi’s sales people and authorized representatives and distributors. This material can be adapted for customer presentations, but the sales strategy and summary [pricing, availability, etc.] is confidential and should not be shown to customers.

DESCRIPTION

LX7207 has 10 lines of integrated low pass filters with ESD protection that filter out EMI as well as protecting the equipment from ESD surge voltages. The device is a 5x5 array flip chip and measures 2.5 x 2.5 x 0.65 mm. It replaces 50 discrete components and thereby provides a significant cost and board space savings. The absence of leadframe and bondwires minimizes inductance and optimizes the high frequency filter performance. LX7207 exceeds the requirements of IEC61000-4-2 (15KV air discharge and 8KV contact discharge).

Although designed for LCD interfaces, LX7207 can also be used to solve EMI filtering and ESD protection needs on data ports and data lines in wireless handsets, PDA’s, MP3 players and mobile accessories. Keypad modules in wireless handsets connect to the baseband processor on the main system board via a flexible PCB. This flexible PCB acts as an antenna by radiating electromagnetic fields and causing EMI/RFI problems both internally and externally. One LX7207 can be used to protect 10 data lines against EMI and ESD, and protecting the baseband processor from ESD strikes that result from the user touching the keypad.

Figure 1 – LX7207
KEY PRODUCT INFORMATION

BLOCK DIAGRAM (One Line shown Only)

KEY FEATURES

- EMI filtering and ESD protection for 10 lines in a single flip chip device
- ESD protection to IEC61000-4-2, level 4 (±8KV contact, ±15KV air)
- >30dB attenuation over 800-1000MHz
- >20dB attenuation over 300MHz- 6GHz
- Replaces 50 discrete components
- Low reverse leakage- Max 1µA at 5V
- TVS working voltage of 5V
**Typical Application**

![Diagram showing LX7207 ESD Protection & EMI Filter in a typical application for LCD controllers and drivers.]

**Applications**
- Protection of LCD displays
- Wireless handsets
- PDA’s
- Portable Information Terminals
- Notebook Computers
- Point of Sales Terminals

**Competitive Analysis**

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Device</th>
<th>TVS Standoff Voltage Max (V)</th>
<th>TVS Reverse Breakdown Voltage Typ (V)</th>
<th>Reverse Leakage Current Max (µA)</th>
<th>Series Resistance (Ohms)</th>
<th>Total Capacitance (Input to GND) Typical (pF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsemi</td>
<td>LX7207</td>
<td>5</td>
<td>8</td>
<td>1µA@5V</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>California Micro Devices</td>
<td>CM1405</td>
<td>5.5(MIN)</td>
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<td><a href="mailto:100nA@3.3V">100nA@3.3V</a></td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>Semtech</td>
<td>SFC2309-200</td>
<td>5</td>
<td>8</td>
<td>0.5µ<a href="mailto:A@3.0V">A@3.0V</a></td>
<td>200</td>
<td>45</td>
</tr>
</tbody>
</table>

**Alternative Microsemi Solutions**

None
SALES STRATEGY

Target designers and manufacturers of hand held and wireless devices, including LCD display modules. Find out if they are using any EMI/ESD protection schemes. If they are using discrete solutions, provide them with samples of our devices and explain the savings in cost and board space that they will achieve by using our integrated solution. LX7207 replaces 50 discrete components. According to iSuppli Corporation’s Passive cost model, the average implementation cost for these 50 discrete components is about $0.82. LX7207 will provide a total cost savings of up to 50% in high volume as compared with the discrete solution. If they are using a competitor’s part, find out the part number and pricing. Promote our part as a second source solution.
**SUMMARY**

### Pricing

<table>
<thead>
<tr>
<th>Device</th>
<th>Package</th>
<th>Industrial (-40 to 125°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LX7207</td>
<td>SP</td>
<td><strong>DC</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.64¢</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.68¢†</td>
</tr>
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</table>

Note: † This price is per part for a reel of 3000 pieces.

### Availability

- **Samples:** Available Now
- **Production:** Available Now

### Options

- **Packages:** SP
- **Temperature:** -40 to 125°C

### Technical Support

- **Datasheet:** See [www.microsemi.com](http://www.microsemi.com) for datasheet.

### Factory Contacts

- **Technical Questions:** Vrej Barkhordarian
  vbarkhordarian@microsemi.com
- **Marketing Manager:**

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