PE42446

Document Category: Product Brief

High Isolation UltraCMOS® SP4T RF Switch, 10 MHz–8.5 GHz

Features

- Operating frequency: Up to 8.5 GHz
- High isolation: 61 dB @ 4 GHz
- Low insertion loss: 0.75 dB @ 4 GHz
- High linearity IIP3: 65 dBm @ 3.8GHz
- Fast switching time: 200 nsec
- -40°C to +125°C operating temperature
- Packaging – 24-lead 4×4 mm LGA

Applications

- DPD feedback loop and VSWR monitoring
- 5G massive MIMO active antenna systems
- Analog/hybrid beamforming RF front ends
- 4G/4.5G TD-LTE macro/micro cell/RRH

Product Description

The PE42446 is a HaRP™ technology-enhanced SP4T RF switch designed for use in 4G/5G wireless infrastructure and other high performance RF applications. It is comprised of four symmetric RF ports with very high isolation up to 8.5 GHz. The PE42446 is manufactured on pSemi’s UltraCMOS® process, a patented variation of silicon-on-insulator (SOI) technology. pSemi’s HaRP technology enhancements deliver high isolation, linearity and excellent harmonics performance. It is an innovative feature of the UltraCMOS process, offering the performance of GaAs with the economy and integration of conventional CMOS.
# Revision History

*Table 1  Revision History*

<table>
<thead>
<tr>
<th>Document Revision</th>
<th>Date</th>
<th>Change Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOC-114093-4</td>
<td>November 2023</td>
<td>Changed upper frequency range from 8 GHz to 8.5 GHz.</td>
</tr>
<tr>
<td>DOC-114093-4</td>
<td>December 2023</td>
<td>Updated Features section.</td>
</tr>
</tbody>
</table>
## Ordering Information

Table 2 lists the available ordering codes for the PE42446 as well as available shipping methods.

### Table 2 • Order Codes for PE42446

<table>
<thead>
<tr>
<th>Order Codes</th>
<th>Description</th>
<th>Packaging</th>
<th>Shipping Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE42446A-Z</td>
<td>PE42446 SP4T RF switch</td>
<td>Green 24-lead 4×4 mm LGA</td>
<td>3000 units/T&amp;R</td>
</tr>
<tr>
<td>EK42446-01</td>
<td>PE42446 Evaluation kit</td>
<td>Evaluation kit</td>
<td>1/box</td>
</tr>
</tbody>
</table>

## Document Categories

**Advance Information**

The product is in a formative or design stage. The datasheet contains design target specifications for product development. Specifications and features may change in any manner without notice.

**Preliminary Specification**

The datasheet contains preliminary data. Additional data may be added at a later date. pSemi reserves the right to change specifications at any time without notice in order to supply the best possible product.

**Product Specification**

The datasheet contains final data. In the event pSemi decides to change the specifications, pSemi will notify customers of the intended changes by issuing a CNF (Customer Notification Form).

**Product Brief**

This document contains a shortened version of the datasheet. For the full datasheet, contact sales@psemi.com.

**Sales Contact**

For additional information, contact Sales at sales@psemi.com.

**Disclaimers**

The information in this document is believed to be reliable. However, pSemi assumes no liability for the use of this information. Use shall be entirely at the user’s own risk. No patent rights or licenses to any circuits described in this document are implied or granted to any third party. pSemi’s products are not designed or intended for use in devices or systems intended for surgical implant, or in other applications intended to support or sustain life, or in any application in which the failure of the pSemi product could create a situation in which personal injury or death might occur. pSemi assumes no liability for damages, including consequential or incidental damages, arising out of the use of its products in such applications.

**Patent Statement**

pSemi products are protected under one or more of the following U.S. patents: patents.psemi.com

**Copyright and Trademark**

©2022–2023, pSemi Corporation. All rights reserved. The Peregrine Semiconductor name, Peregrine Semiconductor logo and UltraCMOS are registered trademarks and the pSemi name, pSemi logo, HaRP and DuNE are trademarks of pSemi Corporation in the U.S. and other countries.