



# 2025-2026 Product Catalog

Empowering a  
Smarter World

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## Intelligent Electronics for the Connected World

At pSemi, innovation is at the core of our mission. We explore, discover, and invent new ways to make electronics for the connected world smaller, thinner, and better. We design our industry-leading RF and power management products to push the boundaries of performance, leading the way in connectivity, automotive, wireless infrastructure, test and measurement, and a broad variety of performance-based multi-market applications.

We empower our customers by providing solutions that enable them to make state-of-the-art products. Our relentless pursuit of innovation translates into real-world benefits in the devices and experiences we rely on every day. In fact, pSemi's industry-leading technology has been used in countless ways from space exploration to the depths of the ocean.

pSemi products are everywhere, and we're proud to contribute to the advancement of society by being designed into smartphones and laptops, asset-tracking and test equipment, wearables, optical transceivers, next-generation wireless infrastructure, and so much more.

# Design and Application Support

Next-generation RF, mmWave, and power management designs require high-performance products and outstanding support. We work with companies of all sizes throughout the design process, from testing to completion. Our team is committed to providing a complete solution, from engineering excellence and proven manufacturing to global sales and technical support.



## Contact Our Support Team

Our global sales, technical support, quality, and customer service teams are available to support you. Scan the QR code to visit our website's support page to submit a request.



# Download Our S-parameter Viewer Software

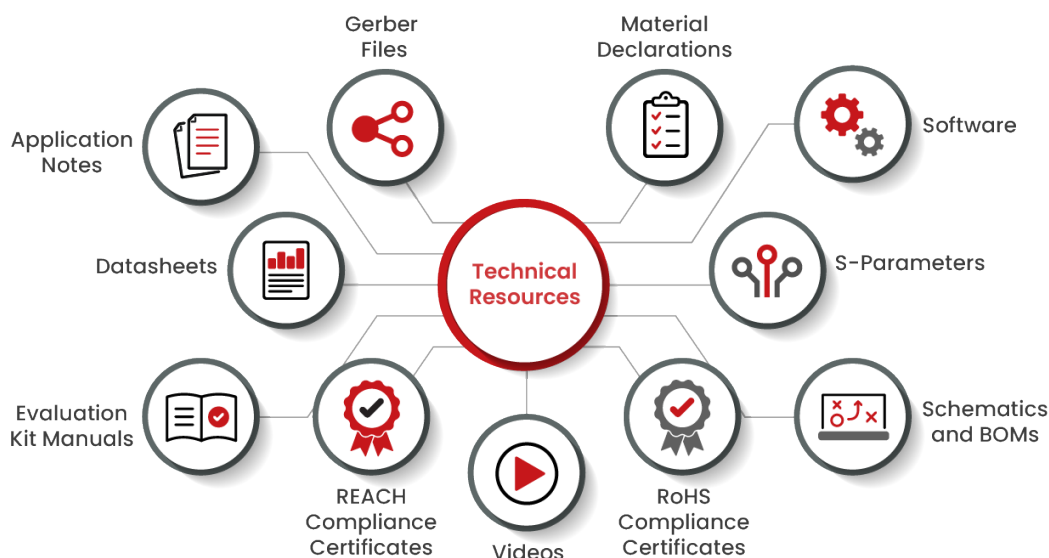
- ✓ View/print multiple S-parameter files in various formats: Smith, polar, magnitude, phase, and phase-vs.-amplitude charts
- ✓ Perform time-domain analysis
- ✓ Build a lookup table of phase/amplitude settings
- ✓ Save pivot tables

Visit our [website](#) to learn more



# Technical Resources

You can find helpful technical resources on our product pages at [psemi.com](#).





**What's Next...**



# New Products

Visit our [website](#)  
to learn more

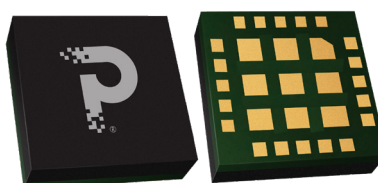


## High-linearity RF Switch

Offering extremely low insertion loss and high linearity with high-input power handling, our RF SOI SP4T switch features broadband frequency coverage from 2.3 to 5 GHz. With an IIP3 of 88.5 dBm, our SP4T switch enables the analog portion of hybrid beamforming in 5G massive multi-input, multi-output (mMIMO) applications.

|     | Product Description  | Part Number          | Operating Frequency (MHz) |      | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | Insertion Loss (dB, typ.) | Isolation (dB, typ.) | V <sub>DD</sub> Range (V) | Switching Time (μs) | ESD HBM (V) | Package (mm) |
|-----|----------------------|----------------------|---------------------------|------|------------|---------------------------|---------------------------|----------------------|---------------------------|---------------------|-------------|--------------|
|     |                      |                      | Min                       | Max  |            |                           |                           |                      |                           |                     |             |              |
| NEW | SP4T, R <sup>1</sup> | PE42448 <sup>2</sup> | 2300                      | 5000 | 88.5       | 39.5                      | 0.6                       | 24                   | 4.5–5.5                   | 7                   | 1000        | 20L 4×4 LGA  |

**Note 1:** Reflective (R). **Note 2:** Visit our website for the latest information.

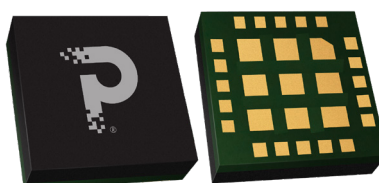


## mmWave RF Switch

Our PE42528 RF SOI SPDT switch delivers the RF performance and reliability to meet challenging mmWave system designs, and test and measurement applications, from 9 kHz to 30 GHz.

|     | Product Description  | Part Number          | Operating Frequency (MHz) |       | IIP3 (dBm) | PO.1dB (dBm) | Insertion Loss (dB) |     | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (ns) | ESD HBM (V)                           | Package (mm) |
|-----|----------------------|----------------------|---------------------------|-------|------------|--------------|---------------------|-----|----------------|-----|---------------------------|---------------------|---------------------------------------|--------------|
|     |                      |                      | Min                       | Max   |            |              | Min                 | Max | Min            | Max |                           |                     |                                       |              |
| NEW | SPDT, R <sup>1</sup> | PE42528 <sup>2</sup> | 0.009                     | 30000 | 49         | 32           | 1.2                 | 1.8 | 42             | 55  | 2.7–3.3                   | 8                   | 600 <sup>3</sup><br>2000 <sup>4</sup> | 20L 3×3 LGA  |

**Note 1:** Reflective (R). **Note 2:** Visit our website for the latest information. **Note 3:** All pins except RF. **Note 4:** RF pins.

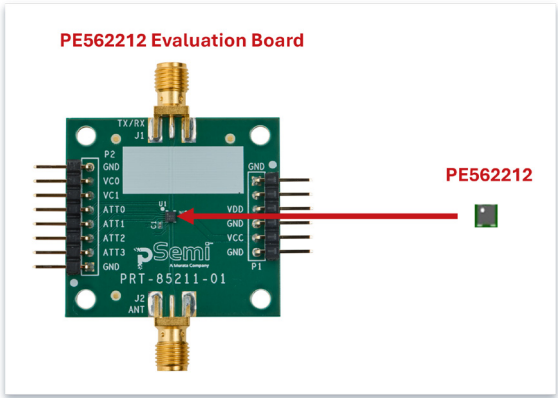


New Products (continued)

2.4 GHz IoT FEM

Our PE562212, built around the fast adoption of the Matter standard, enables connectivity across Thread®, Zigbee®, Bluetooth® BDR/EDR, Bluetooth Low Energy, low-to-medium throughput Wi-Fi® (MCS7), and 2.4 GHz proprietary applications.

|     | Part Number | Operating Frequency (MHz) |        | P1.0dB (dBm) | Tx Gain (dB) | Tx Gain Control (dB) | Tx Gain Step (dB) | Rx NF (dB) | Rx Gain (dB) | Bypass Loss (dB) | Supply Voltage (V) | Package (mm)    |
|-----|-------------|---------------------------|--------|--------------|--------------|----------------------|-------------------|------------|--------------|------------------|--------------------|-----------------|
|     |             | Min                       | Max    |              |              |                      |                   |            |              |                  |                    |                 |
| NEW | PE562212    | 2400                      | 2483.5 | 21           | 23           | 15                   | 1                 | 1.6        | 15.0         | 0.6              | 3.0-3.6            | 14L 1.8×1.8 LGA |

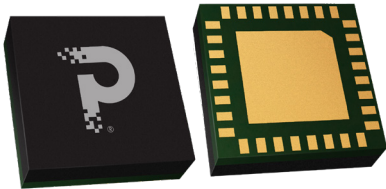


Phase and Amplitude Controller

Our PE44951 is a highly integrated two-way phase shifter with digitally controlled step attenuators for use across the 6.025 to 7.525 GHz frequency range. It is ideal for wireless infrastructure applications, such as mMIMO macro and micro base stations, next-generation 5G solutions, and small-cell applications.

|     | Part Number | Operating Frequency (GHz) |       | Phase (deg) (Range/Step/Bits) | Attenuation (dB) (Range/Step/Bits) | Programming Mode | Package (mm) |
|-----|-------------|---------------------------|-------|-------------------------------|------------------------------------|------------------|--------------|
|     |             | Min                       | Max   |                               |                                    |                  |              |
| NEW | PE44951*    | 6.025                     | 7.525 | 360 / 5.625 / 6               | 15.75 / 0.125 / 7                  | Serial           | 32L 5×5 LGA  |

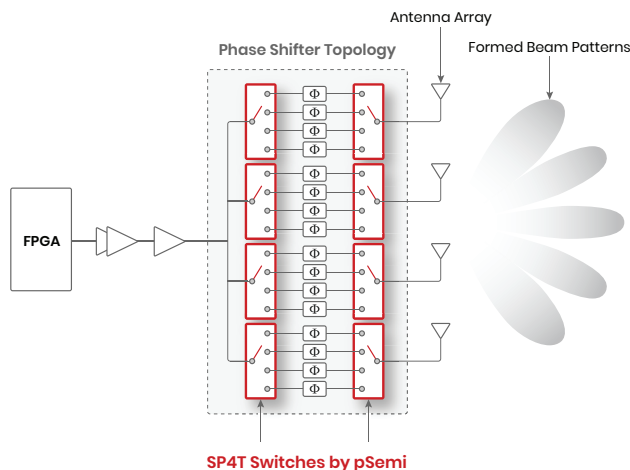
Note: \* Visit our website for the latest information.



## New Products (continued)

### 40 dBm High-power RF Switch

Our PE42447 is a HaRP™ technology-enhanced SP4T RF switch that supports a frequency range from 10 MHz to 8 GHz. It delivers extremely low insertion loss and high linearity with high input power handling capability, making this device ideal for implementing the analog portion of hybrid beamforming of 5G massive MIMO applications. No blocking capacitors are required if DC voltage is not present on the RF ports.

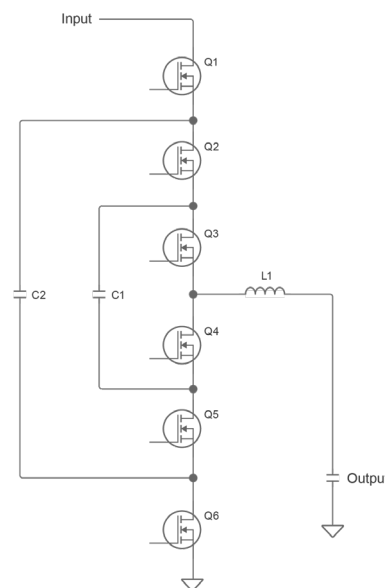


| NEW | Product Description  | Part Number          | Operating Frequency (MHz) |      | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm) | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Settling Time (μs) | ESD HBM (V) | Package (mm) |
|-----|----------------------|----------------------|---------------------------|------|------------|---------------------------|--------------|---------------------|------|----------------|-----|---------------------------|--------------------|-------------|--------------|
|     |                      |                      | Min                       | Max  |            |                           |              | Min                 | Max  | Min            | Max |                           |                    |             |              |
|     | SP4T, R <sup>1</sup> | PE42447 <sup>2</sup> | 10                        | 8000 | 85         | 40                        | 50.3         | 0.32                | 0.62 | 39             | 26  | 4.5–5.5                   | 7                  | 1000        | 20L 4×4 LGA  |

**Note 1:** Reflective (R). **Note 2:** Visit our website for the latest information.

### Multi-level Buck Regulators for Fast Battery Charging

Our PE26xxx product series presents an industry-first, 4- and 3-level buck regulator targeting low-profile ( $\leq 1$  mm) applications, such as battery-powered mobile devices. This revolutionary architecture can be reconfigured to operate in charge pump capacitor divider mode and provides best-in-class efficiency, resulting in fast charging speeds for lithium battery applications. The devices operate from a fixed USB power delivery (USB\_PD) or wireless Rx input in multi-level regulation mode, and from an unregulated USB programmable power supply (USB\_PPS) input in charge pump mode, supporting up to 6A delivery to the battery per device.



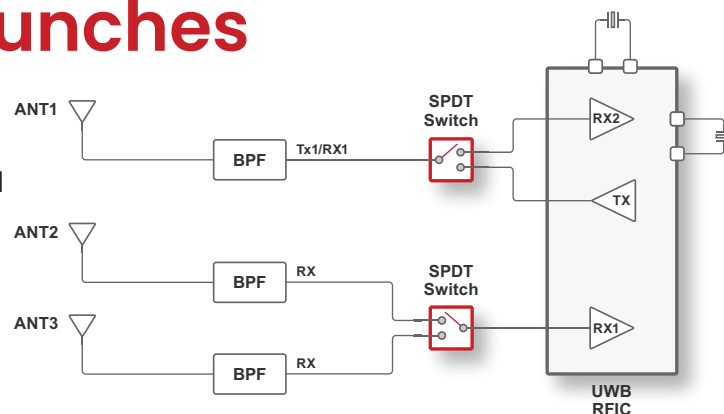


Just Launched...

# Recent Product Launches

## Wideband RF Switch

Our PE423211 is a HaRP™ technology-enhanced SPDT RF switch designed for use in high-performance ISM, WLAN 802.11 ax/be/bn, Bluetooth, and UWB applications. The PE423211 is AEC-Q100 Grade-2 certified and supports frequencies up to 10.6 GHz, including secure car access, telematics, sensing, infotainment, in-cabin monitoring systems (ICMS), and general-purpose switching.



| Product Description | Part Number | Operating Frequency (MHz) |       | Insertion Loss (dB) |     | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Supply Current (nA) | Switching Time (ns) | ESD HBM (V) | Package (mm)   |
|---------------------|-------------|---------------------------|-------|---------------------|-----|----------------|-----|---------------------------|---------------------|---------------------|-------------|----------------|
|                     |             | Min                       | Max   | Min                 | Max | Min            | Max |                           |                     |                     |             |                |
| SPDT, R*            | PE423211    | 300                       | 10600 | 0.4                 | 0.7 | 18             | 27  | 2.7–3.6                   | 90                  | 100                 | 2000        | 6L 1.6×1.6 DFN |

Note: \* Reflective (R).

## mmWave RF Switch

Our PE42548 switch delivers RF performance and reliability to best meet challenging mmWave system designs and test and measurement applications from 9 kHz to 30 GHz in a compact 20-lead 3 × 3 LGA package.

| Product Description  | Part Number | Operating Frequency (MHz) |       | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm) | Insertion Loss (dB) |     | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (ns) | ESD HBM (V)                           | Package (mm) |
|----------------------|-------------|---------------------------|-------|------------|---------------------------|--------------|---------------------|-----|----------------|-----|---------------------------|---------------------|---------------------------------------|--------------|
|                      |             | Min                       | Max   |            |                           |              | Min                 | Max | Min            | Max |                           |                     |                                       |              |
| SP4T, R <sup>1</sup> | PE42548     | 0.009                     | 30000 | 52         | 35                        | 31           | 1.1                 | 2.3 | 33             | 41  | 3.15–3.45                 | 60                  | 600 <sup>2</sup><br>2000 <sup>3</sup> | 20L 3x3 LGA  |

Note 1: Reflective (R). Note 2: All pins except RF. Note 3: RF pins.

## Switch + LNA Module

pSemi's dual-channel switch + LNA module incorporates high-power fail-safe switches and low-noise amplifiers with a bypass function. This receiver front-end module features low noise, excellent linearity, and very low power consumption in a compact size, and is ideally suited to 5G mMIMO applications.

| Part Number | Operating Frequency (MHz) |      | OIP3 (dBm) | P <sub>MAX</sub> Avg (dBm) | Noise Figure (dB) | Isolation (dB, typ) | V <sub>DD</sub> Range (V) | Switching Time (μs)* | Package (mm) |
|-------------|---------------------------|------|------------|----------------------------|-------------------|---------------------|---------------------------|----------------------|--------------|
|             | Min                       | Max  |            |                            |                   |                     |                           |                      |              |
| PE53231     | 3300                      | 4200 | 32         | 43                         | 1.0               | 47                  | 4.75–5.25                 | 0.5                  | 40L 6×6 LGA  |

Note: \* 50% CTRL to 90% or 10% RF.

Recent Product Launches (continued)

Charge Pump Capacitor Divider

Our PE25213 expands pSemi’s portfolio of adiabatic or lossless switching capacitor dividers. The device provides high-efficiency (up to 99%) intermediate power conversion by stepping down the input voltage by ratios of 2 or 3. The PE25213 is ideal for 12V input systems or 2/3 cell battery-powered systems. The device can deliver up to 7A continuous current and up to 10A pulse current with the ability to change the division ratio dynamically.

| Part Number | V <sub>IN</sub> (V) | V <sub>OUT</sub> (V)                    | I <sub>OUT</sub> (A) | Efficiency (%) | Package |
|-------------|---------------------|-----------------------------------------|----------------------|----------------|---------|
| PE25213     | 5.7-15              | V <sub>IN</sub> /2 & V <sub>IN</sub> /3 | 10                   | 99             | WLCSP*  |

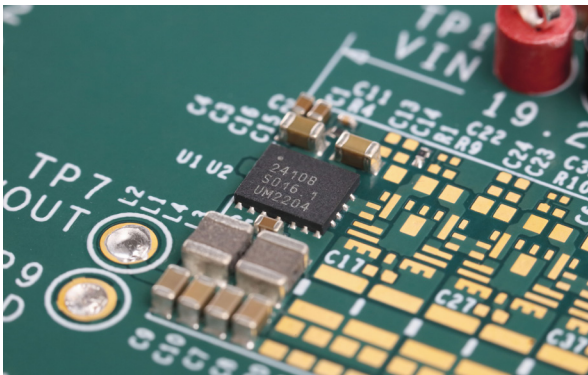
Note: \* Type III PCB-compatible.

Two-stage Buck Regulator

Our PE24111 buck regulator expands the range of 3.3V-input, two-stage regulators targeting high-efficiency, low-profile applications. The two-stage architecture consists of a first-stage charge pump capacitor divider followed by a buck regulator, resulting in smaller, low-profile output inductors. Targeting long-haul optical networks and other low-profile applications, this device is ideal for mounting on the underside of the PCB, directly below the ASIC/FPGA load, for high-current delivery to low-voltage core applications.

| Part Number | V <sub>IN</sub> (V) | V <sub>OUT</sub> (V) | I <sub>OUT</sub> (A) | Efficiency (%)               | Package |
|-------------|---------------------|----------------------|----------------------|------------------------------|---------|
| PE24111*    | 3.0-3.6             | 0.35-0.7             | 20                   | 90 (V <sub>OUT</sub> = 0.5V) | QFN     |

Note: \* Solution height 1.2 mm.





# RF Products

# RF Switch Portfolio

Our broadband and general-purpose RF switches deliver an industry-leading combination of insertion loss, isolation, linearity, and settling time, while routing RF signals to the selected RF port. Our RF switch portfolio on pages 12 and 13 is sorted by product description and maximum operating frequency.

Visit our [website](#)  
to learn more



| Product Description <sup>1</sup> | Part Number           | Operating Frequency (MHz) |       | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm)      | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V) | Package (mm)   | Product Notes                     |
|----------------------------------|-----------------------|---------------------------|-------|------------|---------------------------|-------------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|-------------|----------------|-----------------------------------|
|                                  |                       | Min                       | Max   |            |                           |                   | Min                 | Max  | Min            | Max |                           |                                  |             |                |                                   |
| SPST, OR                         | PE613010              | 100                       | 3000  | 70         | –                         | 32                | 0.20                | 0.80 | 4              | 11  | 2.3–5.5                   | 7                                | 2000        | 10L 2×2 QFN    | Tuning control                    |
| SPDT, A/OR                       | PE42020               | 0 Hz                      | 8000  | 62         | 37                        | 38                | 0.6                 | 1.1  | 34             | 56  | 11–15 <sup>3</sup>        | 10                               | 1000        | 20L 4×4 QFN    | True DC                           |
| SPDT, A                          | PE42721               | 5                         | 2200  | 60         | 18                        | 27                | 0.4                 | 0.65 | 53             | 85  | 2.3–5.5                   | 1                                | 2000        | 12L 3×3 QFN    | 75Ω switch                        |
| SPDT, A                          | PE42742 <sup>4</sup>  | 5                         | 2200  | 53         | 33                        | 32 <sup>5</sup>   | 0.45                | 1.7  | 53.6           | 94  | 2.7–3.3                   | 3                                | 3500        | 20L 4×4 QFN    | 75Ω switch                        |
| SPDT, A                          | PE42750 <sup>4</sup>  | 5                         | 2200  | 47.5       | 26                        | 23.5 <sup>6</sup> | 0.7                 | 1.7  | 57             | 84  | 2.7–3.6                   | 2                                | 2000        | 12L 3×3 QFN    | 75Ω switch                        |
| SPDT, A                          | PE4256                | 5                         | 3000  | 55         | 24                        | 31                | 0.50                | 1.1  | 52             | 80  | 2.7–3.3                   | 2                                | 1000        | 20L 4×4 QFN    | Low insertion loss                |
| SPDT, A                          | PE4257                | 10                        | 3000  | 55         | 33                        | 31                | 0.75                | 1.2  | 44             | 64  | 2.7–3.3                   | 2                                | 1000        | 20L 4×4 QFN    | High isolation                    |
| SPDT, A                          | PE4251                | 10                        | 4000  | 59         | 27                        | 30.5              | 0.55                | 1.0  | 37             | 62  | 3.0–5.5                   | 0.15                             | 4000        | 8L MSOP        | High iso, low IL                  |
| SPDT, A                          | PE42420 <sup>7</sup>  | 20                        | 6000  | 65         | 23                        | 28                | 0.95                | 1.6  | 50             | 69  | 2.7–5.5                   | 0.3                              | 4000        | 20L 4×4 LGA    | High iso, low IL                  |
| SPDT, A                          | PE42423               | 100                       | 8500  | 65         | 39                        | 39.5              | 0.8                 | 1.1  | 35             | 51  | 2.3–5.5                   | 0.5                              | 3000        | 16L 3×3 QFN    | High iso, low IL                  |
| SPDT, A                          | PE42553               | 0.009                     | 8000  | 66         | 36                        | 39                | 0.6                 | 0.85 | 36             | 90  | 2.3–5.5                   | 5.5                              | 4000        | 16L 3×3 QFN    | Broadband                         |
| SPDT, A                          | PE42520               | 0.009                     | 13000 | 66         | 36                        | 39                | 0.6                 | 2.0  | 18             | 90  | 2.3–5.5                   | 5.5                              | 4000        | 16L 3×3 QFN    | Broadband                         |
| SPDT, A                          | PE42521               | 0.009                     | 13000 | 65         | 36                        | 38                | 0.6                 | 1.85 | 17             | 90  | 2.3–5.5                   | 0.5                              | 3000        | 16L 3×3 QFN    | Broadband                         |
| SPDT, A                          | PE42522               | 0.009                     | 26500 | 59         | 30                        | 33                | 0.7                 | 5.3  | 20             | 80  | 2.3–5.5                   | 3                                | 3500        | 29L 4×4 LGA    | Broadband                         |
| SPDT, R                          | PE42722               | 5                         | 1794  | –          | 87.5 <sup>8</sup>         | 88 <sup>8</sup>   | 0.2                 | 0.85 | 29             | 50  | 2.3–5.5                   | 15                               | 1500        | 32L 5×5 QFN    | 75Ω switch                        |
| SPDT, R                          | PE42723               | 5                         | 1794  | –          | 86 <sup>8</sup>           | 87 <sup>8</sup>   | 0.1                 | 0.4  | 34             | 54  | 2.3–5.5                   | 35                               | 3000        | 12L 3×3 QFN    | 75Ω switch                        |
| SPDT, R                          | PE42724               | 5                         | 1794  | –          | 86 <sup>8</sup>           | 87 <sup>8</sup>   | 0.1                 | 0.4  | 19             | 39  | 2.3–5.5                   | 35                               | 2000        | 12L 3×3 QFN    | 75Ω switch                        |
| SPDT, R                          | PE42726               | 5                         | 1794  | –          | 86 <sup>8</sup>           | 87 <sup>8</sup>   | 0.1                 | 0.4  | 21             | 39  | 2.3–5.5                   | 38                               | 2000        | 12L 3×3 QFN    | 75Ω switch                        |
| SPDT, R                          | PE42820               | 30                        | 2700  | 85         | 45.5                      | 45.5              | 0.3                 | 0.7  | 24             | 35  | 2.3–5.5                   | 15                               | 1500        | 32L 5×5 QFN    | High linearity                    |
| SPDT, R                          | PE42359 <sup>7</sup>  | 10                        | 3000  | 55         | 34                        | 33.5 <sup>6</sup> | 0.35                | 1.1  | 14             | 35  | 1.8–3.3                   | 2                                | 2000        | 6L SC70        | Automotive                        |
| SPDT, R                          | PE4239                | 10                        | 3000  | 45         | 30                        | 27                | 0.7                 | 0.9  | 23             | 32  | 2.7–3.3                   | 0.3                              | 1000        | 6L SC70        | Low insertion loss                |
| SPDT, R                          | PE42421               | 10                        | 3000  | 55         | 35                        | 30.5              | 0.35                | 0.5  | 20             | 30  | 1.8–3.3                   | 1.5                              | 2000        | 6L SC70        | Low insertion loss                |
| SPDT, R                          | PE4250                | 10                        | 3000  | 59         | 27                        | 30.5              | 0.6                 | 0.75 | 40             | 51  | 3.0–5.5                   | 0.15                             | 4000        | 8L MSOP        | High iso, low IL                  |
| SPDT, R                          | PE4259                | 10                        | 3000  | 55         | 34                        | 33.5              | 0.35                | 0.5  | 20             | 30  | 1.8–3.3                   | 1.5                              | 2000        | 6L SC70        | Low insertion loss                |
| SPDT, R                          | PE4245                | 10                        | 4000  | 45         | 30                        | 27                | 0.6                 | 0.7  | 32             | 42  | 2.7–3.3                   | 0.2                              | 1000        | 6L 3×3 DFN     | Low insertion loss                |
| SPDT, R                          | PE423422 <sup>7</sup> | 100                       | 6000  | 73.5       | 32                        | 34                | 0.25                | 0.9  | 16             | 41  | 2.3–5.5                   | 2                                | 1000        | 12L 2×2 QFN    | Automotive                        |
| SPDT, R                          | PE42422               | 5                         | 6000  | 81         | 34                        | 34                | 0.23                | 0.9  | 17             | 68  | 2.3–5.5                   | 2                                | 4000        | 12L 2×2 QFN    | High linearity                    |
| SPDT, R                          | PE42426               | 5                         | 6000  | 83         | 38                        | 40                | 0.3                 | 0.75 | 20             | 33  | 2.3–5.5                   | 35                               | 3000        | 12L 3×3 QFN    | High linearity                    |
| SPDT, R                          | PE42427               | 5                         | 6000  | 75         | 34                        | 34                | 0.23                | 0.9  | 17             | 68  | 2.3–5.5                   | 2                                | 4000        | 12L 2×2 QFN    | Low insertion loss                |
| SPDT, R                          | PE42823               | 700                       | 6000  | 70         | 43                        | 46                | 0.25                | 0.53 | 23             | 59  | 2.3–5.5                   | 0.84                             | 4500        | 16L 3×3 QFN    | High linearity                    |
| SPDT, R                          | PE42424 <sup>7</sup>  | 100                       | 8500  | 60         | 39                        | 39.5              | 0.8                 | 1.08 | 35             | 51  | 2.3–5.5                   | 0.145                            | 2500        | 6L 1.5×1.5 DFN | High iso, low IL, FS <sup>9</sup> |

**Note 1:** Absorptive (A), Reflective (R) or Open Reflective (OR). **Note 2:** 50% CTRL to 90% or 10% RF. **Note 3:** Requires external negative voltage (V<sub>SS</sub>, –11V to –15V) for operation. **Note 4:** Unpowered state: PE42742: RFC–RFI ON; PE42750: All ports terminated. **Note 5:** Peak power with LTE modulation. **Note 6:** P1dB levels measured in 50Ω system. **Note 7:** Operating temperature up to +125 °C. **Note 8:** dBmV levels. **Note 9:** Fast switching (FS). **Note 10:** Visit our website for the latest information. **Note 11:** Extended temperature (ET) range, –55 °C to +125 °C. **Note 12:** Settling time.

## RF Switch Portfolio (continued)

|     | Product Description <sup>1</sup> | Part Number            | Operating Frequency (MHz) |       | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm)    | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V) | Package (mm)   | Product Notes                                 |
|-----|----------------------------------|------------------------|---------------------------|-------|------------|---------------------------|-----------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|-------------|----------------|-----------------------------------------------|
|     |                                  |                        | Min                       | Max   |            |                           |                 | Min                 | Max  | Min            | Max |                           |                                  |             |                |                                               |
| NEW | SPDT, R                          | PE423211 <sup>10</sup> | 300                       | 10600 | –          | 25                        | 24 <sup>6</sup> | 0.4                 | 0.7  | 18             | 27  | 2.7–3.6                   | 0.1                              | 2000        | 6L 1.6×1.6 DFN | Automotive                                    |
|     | SPDT, R                          | PE42528                | 0.009                     | 30000 | 49         | 29                        | 32              | 1.2                 | 1.8  | 42             | 55  | 2.7–3.3                   | 0.008                            | 1000        | 20L 3×3 LGA    | Broadband                                     |
|     | SPDT, R                          | PE42524                | 10                        | 40000 | 52         | 27                        | 32.5            | 0.6                 | 5.5  | 33             | 84  | 3.1–3.15                  | 0.225                            | 2000        | Flip Chip      | Broadband                                     |
|     | SPDT, R                          | PE42525                | 0.009                     | 60000 | 48         | 29                        | 35              | 0.9                 | 2.7  | 36             | 80  | 2.7–3.3                   | 0.008                            | 1000        | Flip Chip      | Broadband, FS <sup>9</sup>                    |
|     | SPDT, R                          | PE426525               | 0.009                     | 60000 | 48         | 27                        | 35              | 0.9                 | 2.7  | 36             | 80  | 2.7–3.3                   | 0.008                            | 1000        | Flip Chip      | Broadband, FS <sup>9</sup> , ET <sup>11</sup> |
|     | SP3T, R                          | PE42430                | 100                       | 3000  | 66         | 30                        | 30              | 0.45                | 0.55 | 30             | 40  | 3.0–5.5                   | 0.5                              | 4500        | 8L 1.5×1.5 DFN | High iso, low IL                              |
|     | SP4T, A                          | PE42442                | 30                        | 6000  | 58         | 33                        | 33              | 0.85                | 2.35 | 32             | 67  | 2.3–5.5                   | 0.255                            | 2000        | 24L 4×4 QFN    | High isolation                                |
|     | SP4T, A                          | PE42441                | 10                        | 8000  | 58         | 31                        | 31              | 0.8                 | 1.2  | 31             | 45  | 3.0–3.55                  | 5                                | 2000        | 32L 5×5 LGA    | High iso, low IL                              |
|     | SP4T, A                          | PE42445                | 10                        | 8500  | 65.5       | 34                        | 37              | 0.57                | 1    | 46             | 72  | 2.3–5.5                   | 0.2                              | 2000        | 20L 3×3 LGA    | High iso, low IL                              |
|     | SP4T, A                          | PE42446                | 10                        | 8500  | 65.5       | 34                        | 36.8            | 0.6                 | 1.27 | 38             | 82  | 2.3–5.5                   | 0.2                              | 2000        | 24L 4×4 LGA    | High iso, low IL                              |
|     | SP4T, A                          | PE42540                | 0.00001                   | 8000  | 58         | 30                        | 33              | 0.7                 | 1.2  | 27             | 84  | 3.0–3.6                   | 5                                | 2000        | 32L 5×5 LGA    | Broadband                                     |
|     | SP4T, A                          | PE42542                | 0.009                     | 18000 | 58         | 30                        | 33              | 0.7                 | 3.9  | 27             | 90  | 2.3–5.5                   | 3                                | 2500        | 29L 4×4 LGA    | Broadband                                     |
|     | SP4T, A                          | PE42543                | 0.009                     | 18000 | 59         | 30                        | 33              | 0.7                 | 4.1  | 29             | 90  | 2.3–5.5                   | 0.5                              | 2000        | 29L 4×4 LGA    | Broadband                                     |
|     | SP4T, OR                         | PE613050               | 5                         | 3000  | 80         | –                         | 35.1            | 0.20                | 0.55 | 17             | 28  | 2.3–5.5                   | 2                                | 2000        | 12L 2×2 QFN    | Tuning control                                |
| NEW | SP4T, R                          | PE423641 <sup>7</sup>  | 50                        | 3000  | 68         | 35                        | 37              | 0.5                 | 0.95 | 22             | 32  | 2.65–3.3                  | 1                                | 2000        | 16L 3×3 QFN    | Automotive                                    |
|     | SP4T, R                          | PE42440                | 50                        | 3000  | 67         | 33                        | 41.5            | 0.45                | 0.85 | 22             | 34  | 2.7–3.3                   | 2                                | 2000        | 16L 3×3 QFN    | Low insertion loss                            |
|     | SP4T, R                          | PE42641                | 100                       | 3000  | 68         | 38                        | –               | 0.45                | 0.55 | 27.5           | 35  | 2.65–2.85                 | 2                                | 2000        | 16L 3×3 QFN    | Low insertion loss                            |
|     | SP4T, R                          | PE42443                | 1800                      | 5000  | 85         | 50 <sup>5</sup>           | 50.5            | 0.33                | 0.74 | 26             | 33  | 4.5–5.5                   | 0.82                             | 1000        | 20L 4×4 LGA    | High power & lin.                             |
|     | SP4T, R                          | PE42444                | 1800                      | 5000  | 85         | 51 <sup>5</sup>           | 50.3            | 0.32                | 0.62 | 26             | 39  | 4.5–5.5                   | 0.86                             | 1000        | 20L 4×4 LGA    | High power & lin.                             |
|     | SP4T, R                          | PE42448                | 2300                      | 5000  | 88.5       | 39.5                      | –               | –                   | –    | –              | –   | 4.5–5.5                   | 7                                | 1000        | 20L 4×4 LGA    | High power & lin.                             |
|     | SP4T, R                          | PE42447 <sup>10</sup>  | 10                        | 8000  | 85         | 40                        | 50.3            | 0.32                | 0.62 | 26             | 39  | 4.5–5.5                   | 7 <sup>12</sup>                  | 1000        | 20L 4×4 LGA    | High power & lin.                             |
|     | SP4T, R                          | PE42548 <sup>10</sup>  | 0.009                     | 30000 | 52         | 35                        | 31              | 1.1                 | 2.3  | 33             | 41  | 3.15–3.45                 | 0.06                             | 2000        | 20L 3×3 LGA    | Broadband                                     |
|     | SP4T, R                          | PE42546                | 0.009                     | 52000 | 52–53      | 29                        | 27              | 1.1                 | 3.7  | 23             | 41  | 3.15–3.45                 | 0.06                             | 2000        | 20L 3×3 LGA    | Broadband                                     |
|     | SP4T, R                          | PE42545                | 0.009                     | 67000 | 50–52      | 30                        | 28              | 1                   | 4.5  | 22.5           | 46  | 3.15–3.45                 | 0.075                            | 2000        | Flip Chip      | Broadband                                     |
|     | SP5T, A                          | PE42451                | 450                       | 5000  | 58         | 33                        | 35              | 1.6                 | 2.5  | 43             | 68  | 2.7–3.3                   | 0.2                              | 3500        | 24L 4×4 QFN    | High isolation                                |
|     | SP5T, A                          | PE42452                | 450                       | 4000  | 57         | 33                        | 35              | 0.95                | 1.6  | 44             | 61  | 2.3–5.5                   | 0.265                            | 1500        | 24L 4×4 QFN    | High isolation                                |
|     | SP6T, A                          | PE42462 <sup>7</sup>   | 10                        | 8000  | 60         | 33                        | 37.5            | 0.7                 | 1.6  | 30             | 68  | 2.3–5.5                   | 0.21                             | 1000        | 24L 4x4 QFN    | Broadband, high isolation                     |
|     | SP6T, A                          | PE42562 <sup>7</sup>   | 0.009                     | 8000  | 60         | 33                        | 37.5            | 0.7                 | 1.6  | 30             | 68  | 2.3–5.5                   | 0.210                            | 1000        | 24L 4x4 QFN    | Broadband, low IL                             |
|     | SP6T, A                          | PE426462               | 10                        | 8000  | 60         | 31                        | 37.5            | 0.7                 | 1.6  | 30             | 68  | 2.3–5.5                   | 0.210                            | 1000        | 24L 4x4 QFN    | Broadband, ET <sup>11</sup>                   |
| NEW | SPDT, A                          | PE4256                 | 5                         | 3000  | 55         | 24                        | 31              | 0.50                | 1.10 | 52             | 80  | 2.7–3.3                   | 2                                | 1000        | 20L 4×4 QFN    | Low insertion loss                            |
|     | SP8T, A                          | PE42482 <sup>7</sup>   | 10                        | 8000  | 60         | 33                        | 37.5            | 0.7                 | 1.6  | 30             | 85  | 2.3–5.5                   | 0.227                            | 1000        | 24L 4x4 QFN    | Broadband, high isolation                     |
|     | SP8T, A                          | PE42582 <sup>7</sup>   | 0.009                     | 8000  | 60         | 33                        | 37.5            | 0.7                 | 1.6  | 30             | 85  | 2.3–5.5                   | 0.227                            | 1000        | 24L 4x4 QFN    | Broadband, low IL                             |
|     | SP8T, A                          | PE426482               | 10                        | 8000  | 60         | 31                        | 37.5            | 0.7                 | 1.6  | 30             | 85  | 2.3–5.5                   | 0.227                            | 1000        | 24L 4x4 QFN    | Broadband, ET <sup>11</sup>                   |
|     | SPI2T, A                         | PE42412 <sup>7</sup>   | 10                        | 8000  | 60         | 35                        | 37.5            | 0.7                 | 2.4  | 22             | 69  | 2.3–5.5                   | 0.232                            | 1000        | 32L 5x5 QFN    | Broadband, high isolation                     |
|     | SPI2T, A                         | PE42512 <sup>7</sup>   | 0.009                     | 8000  | 60         | 33                        | 37.5            | 0.7                 | 2.4  | 22             | 69  | 2.3–5.5                   | 0.232                            | 1000        | 32L 5x5 QFN    | Broadband, low IL                             |
|     | SP(3/5)T, R                      | PE42850                | 30                        | 1000  | 42         | 42.5                      | 45.5            | 0.25                | 0.35 | 30             | 36  | 2.3–5.5                   | 15                               | 1500        | 32L 5×5 QFN    | High linearity                                |

**Note 1:** Absorptive (A), Reflective (R) or Open Reflective (OR). **Note 2:** 50% CTRL to 90% or 10% RF. **Note 3:** Requires external negative voltage (V<sub>SS</sub>, –1IV to –15V) for operation. **Note 4:** Unpowered state: PE42742: RFC–RFI ON; PE42750: All ports terminated. **Note 5:** Peak power with LTE modulation. **Note 6:** PIdB levels measured in 50Ω system. **Note 7:** Operating temperature up to +125 °C. **Note 8:** dBmV levels. **Note 9:** Fast switching (FS). **Note 10:** Visit our website for the latest information. **Note 11:** Extended temperature (ET) range, –55 °C to +125 °C. **Note 12:** Settling time.

# RF Switches by Application

## High-linearity RF Switches

Our high-linearity switches use HaRP™ technology to deliver unmatched linearity and excellent harmonics performance with best-in-class ESD and reliability for a wide variety of switching applications.

Visit our [website](#) to learn more



|     | Product Description <sup>1</sup> | Part Number          | Operating Frequency (MHz) |      | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm) | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V) | Package (mm) |
|-----|----------------------------------|----------------------|---------------------------|------|------------|---------------------------|--------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|-------------|--------------|
|     |                                  |                      | Min                       | Max  |            |                           |              | Min                 | Max  | Min            | Max |                           |                                  |             |              |
|     | SPDT, R                          | PE42422              | 5                         | 6000 | 81         | 34                        | 34           | 0.23                | 0.9  | 17             | 68  | 2.3–5.5                   | 2                                | 4000        | 12L 2×2 QFN  |
|     | SPDT, R                          | PE42426              | 5                         | 6000 | 83         | 38                        | 40           | 0.3                 | 0.75 | 20             | 33  | 2.3–5.5                   | 35                               | 3000        | 12L 3×3 QFN  |
|     | SPDT, R                          | PE42427              | 5                         | 6000 | 75         | 34                        | 34           | 0.23                | 0.9  | 17             | 68  | 2.3–5.5                   | 2                                | 4000        | 12L 2×2 QFN  |
|     | SP4T, R                          | PE42443              | 1800                      | 5000 | 85         | 50 <sup>3</sup>           | 50           | 0.33                | 0.74 | 26             | 33  | 4.5–5.5                   | 0.82                             | 1000        | 20L 4×4 LGA  |
|     | SP4T, R                          | PE42444              | 1800                      | 5000 | 85         | 50 <sup>3</sup>           | 50           | 0.32                | 0.68 | 25             | 38  | 4.5–5.5                   | 0.86                             | 1000        | 20L 4×4 LGA  |
| NEW | SP4T, R                          | PE42447 <sup>4</sup> | 2300                      | 5000 | 85         | 40                        | 50.3         | 0.32                | 0.62 | 39             | 26  | 4.5–5.5                   | 7 <sup>5</sup>                   | 1000        | 20L 4x4 LGA  |
| NEW | SP4T, R                          | PE42448              | 2300                      | 5000 | 88.5       | 39.5                      | -            | -                   | -    | -              | -   | 4.5–5.5                   | 7                                | 1000        | 20L 4x4 LGA  |

**Note 1:** Reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF. **Note 3:** Peak power with LTE modulation. **Note 4:** Visit our website for the latest information. **Note 5:** Settling time.

## High-isolation RF Switches

Our high-isolation switches feature exceptional port-to-port isolation, insertion loss, and switching time from SPDT to SP12T configurations, ideal for filter bank switching and wireless signal routing applications supporting frequencies up to 8.5 GHz.

| Product Description <sup>1</sup> | Part Number          | Operating Frequency (MHz) |      | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm)    | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V) | Package (mm)   |
|----------------------------------|----------------------|---------------------------|------|------------|---------------------------|-----------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|-------------|----------------|
|                                  |                      | Min                       | Max  |            |                           |                 | Min                 | Max  | Min            | Max |                           |                                  |             |                |
| SPDT, A                          | PE42420 <sup>3</sup> | 20                        | 6000 | 65         | 30                        | 28              | 0.95                | 1.6  | 50             | 69  | 2.7–5.5                   | 0.3                              | 4000        | 20L 4×4 LGA    |
| SPDT, A                          | PE42423              | 100                       | 8500 | 65         | 39                        | 39.5            | 0.8                 | 1.10 | 35             | 51  | 2.3–5.5                   | 0.5                              | 3000        | 16L 3×3 QFN    |
| SPDT, A                          | PE4257               | 10                        | 3000 | 55         | 33                        | 31              | 0.75                | 1.2  | 44             | 64  | 2.7–3.3                   | 2                                | 1000        | 20L 4×4 QFN    |
| SPDT, R                          | PE42424 <sup>3</sup> | 100                       | 8500 | 60         | 41                        | 41 <sup>4</sup> | 0.8                 | 0.95 | 45             | 47  | 2.3–5.5                   | 0.145                            | 2500        | 6L 1.5×1.5 DFN |
| SP4T, A                          | PE42442 <sup>3</sup> | 30                        | 6000 | 58         | 33                        | 33              | 0.85                | 2.35 | 32             | 67  | 2.3–5.5                   | 0.255                            | 2000        | 24L 4×4 QFN    |
| SP4T, A                          | PE42445              | 10                        | 8500 | 65.5       | 34                        | 37              | 0.57                | 1    | 46             | 72  | 2.3–5.5                   | 0.2                              | 2000        | 20L 3×3 LGA    |
| SP4T, A                          | PE42446              | 10                        | 8500 | 65.5       | 34                        | 36.8            | 0.6                 | 1.27 | 38             | 82  | 2.3–5.5                   | 0.2                              | 2000        | 24L 4×4 LGA    |
| SP5T, A                          | PE42451              | 450                       | 4000 | 58         | 33                        | 35              | 1.6                 | 2.25 | 50             | 68  | 2.7–3.3                   | 0.200                            | 3500        | 24L 4×4 QFN    |
| SP5T, A                          | PE42452 <sup>3</sup> | 450                       | 4000 | 57         | 33                        | 35              | 0.95                | 1.6  | 44             | 61  | 2.3–5.5                   | 0.265                            | 1500        | 24L 4×4 QFN    |
| SP6T, A                          | PE42462 <sup>3</sup> | 10                        | 8000 | 60         | 33                        | 37.5            | 0.7                 | 1.6  | 30             | 68  | 2.3–5.5                   | 0.210                            | 1000        | 24L 4x4 QFN    |
| SP8T, A                          | PE42482 <sup>3</sup> | 10                        | 8000 | 60         | 33                        | 37.5            | 0.7                 | 1.6  | 30             | 85  | 2.3–5.5                   | 0.227                            | 1000        | 24L 4x4 QFN    |
| SP12T, A                         | PE42412 <sup>3</sup> | 10                        | 8000 | 60         | 35                        | 37.5            | 0.7                 | 2.4  | 22             | 69  | 2.3–5.5                   | 0.232                            | 1000        | 32L 5x5 QFN    |

**Note 1:** Absorptive (A) or Reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF. **Note 3:** Operating temperature up to +105 °C. **Note 4:** PldB levels.

## Low Insertion Loss RF Switches

Our low insertion loss switches use HaRP™ technology to reduce gate lag and insertion loss drift, delivering industry-leading insertion loss and RF performance to wireless infrastructure, broadband, and test and measurement applications.

| Product Description <sup>1</sup> | Part Number | Operating Frequency (MHz) |      | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm) | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V) | Package (mm)   |
|----------------------------------|-------------|---------------------------|------|------------|---------------------------|--------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|-------------|----------------|
|                                  |             | Min                       | Max  |            |                           |              | Min                 | Max  | Min            | Max |                           |                                  |             |                |
| SPDT, A                          | PE4251      | 10                        | 4000 | 59         | 27                        | 30.5         | 0.55                | 1.0  | 37             | 62  | 3.0–3.6                   | 0.15                             | 4000        | 8L MSOP        |
| SPDT, A                          | PE4256      | 5                         | 3000 | 55         | 24                        | 31           | 0.50                | 1.10 | 52             | 80  | 2.7–3.3                   | 2                                | 1000        | 20L 4×4 QFN    |
| SPDT, R                          | PE4239      | 10                        | 3000 | 45         | 30                        | 27           | 0.7                 | 0.9  | 23             | 32  | 2.7–3.3                   | 0.3                              | 1500        | 6L SC70        |
| SPDT, R                          | PE42421     | 10                        | 3000 | 55         | 35                        | 30.5         | 0.35                | 0.5  | 20             | 30  | 1.8–3.3                   | 1.5                              | 2000        | 6L SC70        |
| SPDT, R                          | PE4245      | 10                        | 4000 | 45         | 30                        | 27           | 0.6                 | 0.7  | 32             | 42  | 2.7–3.3                   | 0.2                              | 1500        | 6L 3×3 DFN     |
| SPDT, R                          | PE4250      | 10                        | 3000 | 59         | 27                        | 30.5         | 0.6                 | 0.75 | 40             | 51  | 3.0–3.6                   | 0.15                             | 4000        | 8L MSOP        |
| SPDT, R                          | PE4259      | 10                        | 3000 | 55         | 34                        | 34           | 0.35                | 0.5  | 20             | 30  | 1.8–3.3                   | 1.5                              | 2000        | 6L SC70        |
| SP3T, R                          | PE42430     | 100                       | 3000 | 66         | 30                        | 30           | 0.45                | 0.55 | 30             | 40  | 3.0–5.5                   | 0.5                              | 4500        | 8L 1.5×1.5 DFN |
| SP4T, R                          | PE42440     | 50                        | 3000 | 67         | 33                        | 41.5         | 0.45                | 0.85 | 22             | 34  | 2.7–3.3                   | 2                                | 2000        | 16L 3×3 QFN    |
| SP4T, A                          | PE42441     | 10                        | 8000 | 58         | 31                        | 31           | 0.8                 | 1.2  | 31             | 45  | 3.0–3.55                  | 5                                | 2000        | 32L 5×5 LGA    |
| SP4T, R                          | PE42641     | 100                       | 3000 | 68         | 38                        | –            | 0.45                | 0.55 | 27.5           | 35  | 2.65–2.85                 | 2                                | 2000        | 16L 3×3 QFN    |

**Note 1:** Absorptive (A) or Reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF.

## 75Ω Broadband Switches

Our high-performance 75Ω switches simplify your next RF design by providing ruggedness, high isolation, low insertion loss, and high linearity switch solutions for a wide range of CATV and broadband RF applications.

| Product Description <sup>1</sup> | Part Number          | Operating Frequency (MHz) |      | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm)      | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V) | Package (mm) |
|----------------------------------|----------------------|---------------------------|------|------------|---------------------------|-------------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|-------------|--------------|
|                                  |                      | Min                       | Max  |            |                           |                   | Min                 | Max  | Min            | Max |                           |                                  |             |              |
| SPDT, A                          | PE42721              | 5                         | 2200 | 60         | 18                        | 27                | 0.4                 | 0.65 | 53             | 85  | 2.3–5.5                   | 1                                | 2000        | 12L 3x3 QFN  |
| SPDT, A                          | PE42742 <sup>3</sup> | 5                         | 2200 | 53         | 33                        | 32 <sup>4</sup>   | 0.45                | 1.7  | 53.6           | 94  | 2.3–5.5                   | 3                                | 3500        | 20L 4x4 QFN  |
| SPDT, A                          | PE42750 <sup>3</sup> | 5                         | 2200 | 47.5       | 27.8                      | 23.5 <sup>4</sup> | 0.7                 | 1.7  | 57             | 84  | 2.7–3.6                   | 2                                | 2000        | 12L 3x3 QFN  |
| SPDT, A                          | PE4280               | 5                         | 2200 | 50         | 25.8                      | 26 <sup>4</sup>   | 0.5                 | 1.1  | 47             | 72  | 2.7–3.3                   | 2                                | 1000        | 20L 4x4 QFN  |
| SPDT, R                          | PE42722              | 5                         | 1794 | –          | 33                        | 41                | 0.2                 | 0.85 | 29             | 50  | 2.3–5.5                   | 15                               | 1500        | 32L 5x5 QFN  |
| SPDT, R                          | PE42723              | 5                         | 1794 | –          | 39                        | 38                | 0.1                 | 0.4  | 34             | 54  | 2.3–5.5                   | 35                               | 3000        | 12L 3x3 QFN  |
| SPDT, R                          | PE42724              | 5                         | 1794 | –          | 39                        | 38                | 0.1                 | 0.4  | 19             | 39  | 2.3–5.5                   | 35                               | 2000        | 12L 3x3 QFN  |
| SPDT, R                          | PE42726              | 5                         | 1794 | –          | 39                        | 38                | 0.1                 | 0.4  | 19             | 39  | 2.3–5.5                   | 38                               | 2000        | 12L 3x3 QFN  |

**Note 1:** Absorptive (A) or Reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF. **Note 3:** Unpowered state: PE42742: RFC–RF1 ON; PE42750: All ports terminated.

**Note 4:** P1dB levels.

50Ω Broadband RF Switches

Our broadband 50Ω RF switches offer patented technology enhancements that reduce gate lag and insertion loss drift, while increasing linearity and isolation over an extended frequency range up to 67 GHz.

|     | Product Description <sup>1</sup> | Part Number          | Operating Frequency (MHz) |       | IIP3/IIP2 (dBm) | P <sub>MAX</sub> CW (dBm) | P0.1dB (dBm) | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V)                           | Package (mm) |
|-----|----------------------------------|----------------------|---------------------------|-------|-----------------|---------------------------|--------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|---------------------------------------|--------------|
|     |                                  |                      | Min                       | Max   |                 |                           |              | Min                 | Max  | Min            | Max |                           |                                  |                                       |              |
|     | SPDT, A                          | PE42520              | 0.009                     | 13000 | 66/120          | 36                        | 39           | 0.6                 | 2.0  | 18             | 90  | 2.3-5.5                   | 5.5                              | 4000                                  | 16L 3×3 QFN  |
|     | SPDT, A                          | PE42521              | 0.009                     | 13000 | 65 / 120        | 36                        | 38           | 0.6                 | 1.85 | 17             | 90  | 2.3-5.5                   | 0.5                              | 3000                                  | 16L 3×3 QFN  |
|     | SPDT, A                          | PE42522              | 0.009                     | 26500 | 59 / 121        | 30                        | 33           | 0.7                 | 5.3  | 20             | 80  | 2.3-5.5                   | 3                                | 3500                                  | 29L 4×4 LGA  |
|     | SPDT, A                          | PE42553              | 0.009                     | 8000  | 66 / 120        | 36                        | 39           | 0.6                 | 0.85 | 36             | 90  | 2.3-5.5                   | 5.5                              | 4000                                  | 16L 3×3 QFN  |
| NEW | SPDT, R                          | PE42528 <sup>3</sup> | 0.009                     | 30000 | 48 / 112        | 32                        | 35           | 1.2                 | 1.8  | 42             | 55  | 2.7-3.3                   | 0.008                            | 1000                                  | 20L 3×3 LGA  |
|     | SPDT, R                          | PE42524              | 10                        | 40000 | 52 / –          | 27                        | 32.5         | 0.6                 | 5.5  | 33             | 84  | 3.1-3.15                  | 0.225                            | 2000                                  | Flip Chip    |
|     | SPDT, R                          | PE42525              | 0.009                     | 60000 | 48 / 112        | 32                        | 35           | 0.9                 | 2.7  | 36             | 80  | 2.7-3.3                   | 0.008                            | 1000                                  | Flip Chip    |
|     | SP4T, A                          | PE42540              | .00001                    | 8000  | 58 / 100        | 30                        | 33           | 0.7                 | 1.2  | 27             | 84  | 3.0-3.6                   | 5                                | 2000                                  | 32L 5×5 LGA  |
|     | SP4T, A                          | PE42542              | 0.009                     | 18000 | 58 / 118        | 30                        | 33           | 0.7                 | 3.9  | 27             | 90  | 2.3-5.5                   | 3                                | 3500                                  | 29L 4×4 LGA  |
|     | SP4T, A                          | PE42543              | 0.009                     | 18000 | 59 / 113        | 30                        | 33           | 0.7                 | 4.1  | 29             | 90  | 2.3-5.5                   | 0.5                              | 2500                                  | 29L 4×4 LGA  |
|     | SP4T, R                          | PE42545              | 0.009                     | 67000 | 49              | 30                        | 28           | 1                   | 6.6  | 22.5           | 46  | 3.15-3.45                 | 0.06                             | 2000                                  | Flip Chip    |
|     | SP4T, R                          | PE42546              | 0.009                     | 52000 | 48              | 29                        | 27           | 1.1                 | 3.8  | 23             | 41  | 3.15-3.45                 | 0.06                             | 2000                                  | 20L 3×3 LGA  |
|     | SP4T, R                          | PE42548              | 0.009                     | 30000 | 52              | 29                        | 27           | 1.1                 | 2.3  | 33             | 41  | 3.15-3.45                 | 0.06                             | 600 <sup>4</sup><br>2000 <sup>5</sup> | 20L 3×2 LGA  |
|     | SP6T, A                          | PE42562              | 0.009                     | 8000  | 60 / 105        | 33                        | 37.5         | 0.7                 | 1.6  | 30             | 68  | 2.3-5.5                   | 0.210                            | 1000                                  | 24L 4x4 QFN  |
|     | SP8T, A                          | PE42582              | 0.009                     | 8000  | 60 / 105        | 33                        | 37.5         | 0.7                 | 1.6  | 30             | 85  | 2.3-5.5                   | 0.227                            | 1000                                  | 24L 4x4 QFN  |
|     | SP12T, A                         | PE42512              | 0.009                     | 8000  | 60 / 105        | 33                        | 37.5         | 0.7                 | 2.4  | 22             | 69  | 2.3-5.5                   | 0.232                            | 1000                                  | 32L 5x5 QFN  |

Note 1: Absorptive (A) or Reflective (R).    Note 2: 50% CTRL to 90% or 10% RF.    Note 3: Visit our website for the latest information.    Note 4: All pins except RF.    Note 5: RF pins.

50Ω High-power Switches

Our 50Ω high-power RF switches deliver a turnkey design and small footprint with extremely low-power consumption, excellent harmonic performance, and high power handling.

| Product Description <sup>1</sup> | Part Number          | Operating Frequency (MHz) |      | IIP3 (dBm) | P <sub>MAX</sub> CW (dBm) | PO.1dB (dBm) | Insertion Loss (dB) |      | Isolation (dB) |     | V <sub>DD</sub> Range (V) | Switching Time (μs) <sup>2</sup> | ESD HBM (V) | Package (mm) |
|----------------------------------|----------------------|---------------------------|------|------------|---------------------------|--------------|---------------------|------|----------------|-----|---------------------------|----------------------------------|-------------|--------------|
|                                  |                      | Min                       | Max  |            |                           |              | Min                 | Max  | Min            | Max |                           |                                  |             |              |
| SPDT, A                          | PE42822              | 700                       | 3800 | 65         | 32                        | 39.5         | 0.6                 | 0.8  | 44             | 47  | 2.3-5.5                   | 0.5                              | 3000        | 16L 3×3 QFN  |
| SPDT, R                          | PE42820              | 30                        | 2700 | 85         | 43                        | 45.5         | 0.3                 | 0.7  | 24             | 35  | 2.3-5.5                   | 15                               | 1500        | 32L 5×5 QFN  |
| SPDT, R                          | PE42823 <sup>3</sup> | 700                       | 6000 | 70         | 38.5                      | 46           | 0.25                | 0.53 | 23             | 59  | 2.3-5.5                   | 0.85                             | 4500        | 16L 3×3 QFN  |
| SP(3/5)T, R                      | PE42850              | 30                        | 1000 | 42         | 42.5                      | 45.5         | 0.25                | 0.35 | 30             | 36  | 2.3-5.5                   | 15                               | 1500        | 32L 5×5 QFN  |
| SP4T, R                          | PE42443              | 1800                      | 5000 | 85         | 50 <sup>4</sup>           | 50           | 0.33                | .074 | 26             | 33  | 4.5-5.5                   | 0.82                             | 1000        | 20L 4×4 LGA  |
| SP4T, R                          | PE42444              | 1800                      | 5000 | 85         | 50 <sup>4</sup>           | 50           | .032                | .068 | 25             | 38  | 4.5-5.5                   | 0.86                             | 1000        | 20L 4×4 LGA  |

Note 1: Absorptive (A) or Reflective (R).    Note 2: 50% CTRL to 90% or 10% RF.    Note 3: RX protection switch.    Note 4: Peak power with 10 dB PAPR modulated waveform.

Using 50Ω Switches in 75Ω Systems

Many of our 50Ω switches can be used in 75Ω systems. Scan the QR code to learn more.



## Antenna Tuning Switches

Our antenna tuning switches offer industry-leading RF power handling and ruggedness with best-in-class linearity in a small form factor.

| Product Description* | Part Number | Operating Frequency (MHz) |      | $R_{ON}$ ( $\Omega$ ) | $C_{OFF}$ (pF) | IMD3 (dBm) | Peak RF Voltage (V <sub>pk</sub> ) | Package (mm) |
|----------------------|-------------|---------------------------|------|-----------------------|----------------|------------|------------------------------------|--------------|
|                      |             | Min                       | Max  |                       |                |            |                                    |              |
| SPST, OR             | PE613010    | 10                        | 3000 | 1.20                  | 0.40           | -115       | 25                                 | 10L 2x2 QFN  |
| SP4T, OR             | PE613050    | 5                         | 3000 | 1.60                  | 0.14           | -120       | 18                                 | 12L 2x2 QFN  |

**Note:** \* Open Reflective (OR).

## Automotive Switches

Our AEC-Q100 Grade 2-certified automotive switches support operating temperatures up to +105 °C and a wide range of wireless applications, such as automotive infotainment and traffic safety.

| Product Description <sup>1</sup> | Part Number           | Operating Frequency (MHz) |       | IIP3/IIP2 (dBm) | $P_{MAX}$ CW (dBm) | P0.1dB (dBm)    | Insertion Loss (dB) |      | Isolation (dB) |     | $V_{DD}$ Range (V) | Switching Time ( $\mu$ s) <sup>2</sup> | ESD HBM (V) | Package (mm)   |
|----------------------------------|-----------------------|---------------------------|-------|-----------------|--------------------|-----------------|---------------------|------|----------------|-----|--------------------|----------------------------------------|-------------|----------------|
|                                  |                       | Min                       | Max   |                 |                    |                 | Min                 | Max  | Min            | Max |                    |                                        |             |                |
| <b>NEW</b> SPDT, R               | PE423211 <sup>3</sup> | 300                       | 10600 | –               | 25                 | 25 <sup>4</sup> | 0.3                 | 0.7  | 18             | 27  | 2.7–3.6            | 0.1                                    | 2000        | 6L 1.6×1.6 DFN |
| SPDT, R                          | PE423422              | 100                       | 6000  | 73.5 / 115      | 32                 | 34              | 0.25                | 0.9  | 16             | 41  | 2.3–5.5            | 2                                      | 1000        | 12L 2×2 QFN    |
| SPDT, R                          | PE42359               | 10                        | 3000  | 55 / –          | 34                 | 33.5            | 0.35                | 1.1  | 14             | 35  | 1.8–3.3            | 2                                      | 2000        | 6L SC70        |
| SP4T, R                          | PE423641              | 50                        | 3000  | 68 / 115        | 35                 | 37              | 0.5                 | 0.95 | 22             | 32  | 2.65–3.3           | 1                                      | 2000        | 16L 3×3 QFN    |

**Note 1:** Reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF. **Note 3:** Visit our website for the latest information. **Note 4:** P1dB levels.

## Extended Temperature RF Switches

Our 50 $\Omega$  extended temperature switches are ideal for applications that require wide temperature range support from –55 °C to +125 °C, such as harsh industrial applications.

| Product Description <sup>1</sup> | Part Number | Operating Frequency (MHz) |       | IIP3/IIP2 (dBm) | $P_{MAX}$ CW (dBm) | P0.1dB (dBm) | Insertion Loss (dB) |     | Isolation (dB) |     | $V_{DD}$ Range (V) | Switching Time ( $\mu$ s) <sup>2</sup> | ESD HBM (V) | Package (mm) |
|----------------------------------|-------------|---------------------------|-------|-----------------|--------------------|--------------|---------------------|-----|----------------|-----|--------------------|----------------------------------------|-------------|--------------|
|                                  |             | Min                       | Max   |                 |                    |              | Min                 | Max | Min            | Max |                    |                                        |             |              |
| SPDT, R                          | PE426525    | 0.009                     | 60000 | 48 / 112        | 27                 | 35           | 0.9                 | 2.7 | 36             | 80  | 2.7–3.3            | 0.008                                  | 1000        | Flip Chip    |
| SP6T, A                          | PE426462    | 10                        | 8000  | 60 / 105        | 31                 | 37.5         | 0.7                 | 1.6 | 30             | 68  | 2.3–5.5            | 0.210                                  | 1000        | 24L 4x4 QFN  |
| SP8T, A                          | PE426482    | 10                        | 8000  | 60 / 105        | 31                 | 37.5         | 0.7                 | 1.6 | 30             | 85  | 2.3–5.5            | 0.227                                  | 1000        | 24L 4x4 QFN  |
| SP12T, A                         | PE426412    | 10                        | 8000  | 60 / 105        | 31                 | 37.5         | 0.7                 | 2.4 | 22             | 69  | 2.3–5.5            | 0.232                                  | 1000        | 32L 5x5 QFN  |

**Note 1:** Absorptive (A) or Reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF.

# Attenuators

## 75Ω Broadband RF Digital Step Attenuators

Our 75Ω broadband RF digital step attenuators (DSAs) feature attenuation steps of 0.5 dB to 31.5 dB and low distortion for CATV and multi-carrier applications.

Visit our [website](#)  
to learn more



| Part Number         | Attenuation (dB)<br>(Range/<br>Min. Step Size) | Programming Mode               | Operating Frequency (MHz) |      | Insertion Loss (dB) |     | IIP3 (dBm) | Attenuation Accuracy (dB @ 1 GHz) | Switching Time (μs) | ESD HBM (V) | Package (mm) | Product Notes |
|---------------------|------------------------------------------------|--------------------------------|---------------------------|------|---------------------|-----|------------|-----------------------------------|---------------------|-------------|--------------|---------------|
|                     |                                                |                                | Min                       | Max  | Min                 | Max |            |                                   |                     |             |              |               |
| PE4314 <sup>1</sup> | 0–31.5 / 0.5                                   | Parallel <sup>2</sup> , Serial | 1                         | 2500 | 1                   | 1.5 | 58         | ±(0.15 + 3% of setting)           | 370                 | 1500        | 20L 4×4 QFN  | 6-bit         |
| PE43665             | 0–31.5 / 0.5                                   | Parallel <sup>2</sup> , Serial | 1                         | 2000 | 1.4                 | 1.8 | 52         | ±(0.15 + 4% of setting)           | 1                   | 500         | 20L 4×4 QFN  | 6-bit         |

**Note 1:** External  $V_{SS}$  option. **Note 2:** Parallel modes: latched and direct.

## Glitchless RF Digital Step Attenuators

Our 50Ω glitchless RF DSAs feature glitchless attenuation state transitions and an extended operating temperature range to +105 °C, ideal for many broadband applications.

| Part Number          | Attenuation (dB)<br>(Range/<br>Min. Step Size) | Programming Mode                             | Operating Frequency (MHz) |      | Insertion Loss (dB) |      | IIP3 (dBm) | Attenuation Accuracy (dB @ 2.2 GHz) | Switching Time (ns) | ESD HBM (V) | Package (mm) | Product Notes |
|----------------------|------------------------------------------------|----------------------------------------------|---------------------------|------|---------------------|------|------------|-------------------------------------|---------------------|-------------|--------------|---------------|
|                      |                                                |                                              | Min                       | Max  | Min                 | Max  |            |                                     |                     |             |              |               |
| PE43711              | 0–31.75 / 0.25                                 | Parallel <sup>1</sup> , Serial               | 0.009                     | 6000 | 1.3                 | 2.4  | 57         | ±(0.15 + 1.5% of setting)           | 275                 | 3000        | 24L 4×4 QFN  | 7-bit         |
| PE43712              | 0–31.75 / 0.25                                 | Parallel <sup>1</sup> , Ser-Add <sup>2</sup> | 0.009                     | 6000 | 1.3                 | 2.45 | 57         | ±(0.20 + 1.5% of setting)           | 275                 | 3000        | 32L 5×5 QFN  | 7-bit         |
| PE43713 <sup>3</sup> | 0–31.75 / 0.25                                 | Parallel <sup>1</sup> , Ser-Add <sup>2</sup> | 0.009                     | 6000 | 1.3                 | 2.45 | 57         | ±(0.20 + 1.5% of setting)           | 275                 | 3000        | 32L 5×5 QFN  | 7-bit         |

**Note 1:** Parallel modes: latched and direct. **Note 2:** Serial-addressable mode. **Note 3:** External  $V_{SS}$  option.

## General-purpose RF Digital Step Attenuators

Our 50Ω general-purpose RF DSAs feature high linearity, fast switching time with wide bandwidth, and best-in-class attenuation accuracy with fine attenuation steps.

| Part Number            | Attenuation (dB)<br>(Range/<br>Min. Step Size) | Programming Mode                             | Operating Frequency (MHz) |       | Insertion Loss (dB) |      | IIP3 (dBm) | Attenuation Accuracy (dB @ 1 GHz)                  | Switching Time (μs) | ESD HBM (V) | Package (mm) | Product Notes |
|------------------------|------------------------------------------------|----------------------------------------------|---------------------------|-------|---------------------|------|------------|----------------------------------------------------|---------------------|-------------|--------------|---------------|
|                        |                                                |                                              | Min                       | Max   | Min                 | Max  |            |                                                    |                     |             |              |               |
| PE43205 <sup>1</sup>   | 0–18 / 6                                       | Parallel                                     | 35                        | 6000  | 0.5                 | 1.05 | 61         | +0.10                                              | 0.031               | 2000        | 12L 3×3 QFN  | 2-bit         |
| PE43620                | 0–18 / 6, 12, and 18                           | Parallel <sup>3</sup>                        | 50                        | 3000  | 0.6                 | 0.7  | 61         | ±(–0.25/+0.40 of setting)                          | 0.03                | 2000        | 12L 3×3 QFN  | 2-bit         |
| PE43650                | 0–15.5 / 0.5                                   | Parallel <sup>3</sup> , Serial               | 0.009                     | 6000  | 2.4                 | 2.9  | 58         | ±(0.3/+0.30 of setting)                            | 4                   | 500         | 24L 4×4 QFN  | 5-bit         |
| PE4312 <sup>1,2</sup>  | 0–31.5 / 0.5                                   | Parallel <sup>3</sup> , Serial               | 1                         | 4000  | 1.3                 | 2.1  | 59         | ±(0.15 + 2% of setting)                            | 0.5                 | 1500        | 20L 4×4 QFN  | 6-bit         |
| PE43508 <sup>1,2</sup> | 0–31.5 / 0.5                                   | Par <sup>3</sup> , Ser, Ser-Add <sup>4</sup> | 0.009                     | 55000 | 2.2                 | 5.9  | 50         | +(1.00+4.5% of setting) / –1 @ 13 GHz              | 0.33                | 1000        | Flip Chip    | 6-bit         |
| PE43610 <sup>1,2</sup> | 0–31.5 / 0.5                                   | Par <sup>3</sup> , Ser, Ser-Add <sup>4</sup> | 0.009                     | 13000 | 1.6                 | 3    | 50         | +(1.00+4.5% of setting) / –1 @ 13 GHz              | 0.33                | 1000        | 24L 4×4 LGA  | 6-bit         |
| PE43614 <sup>1,2</sup> | 0–31.5 / 0.5                                   | Par <sup>3</sup> , Ser, Ser-Add <sup>4</sup> | 0.009                     | 45000 | 3                   | 5.8  | 50         | +(1.00+4.5% of setting) / –1 @ 13 GHz              | 0.33                | 1000        | 24L 4×4 LGA  | 6-bit         |
| PE43704 <sup>2</sup>   | 0–31.75 / 0.25                                 | Par <sup>3</sup> , Ser, Ser-Add <sup>4</sup> | 0.009                     | 8000  | 1.3                 | 2.9  | 61         | +(0.15 + 4.5% of setting) / –(0.1 + 2% of setting) | 1.1                 | 1500        | 32L 5×5 QFN  | 7-bit         |
| PE43705 <sup>1,2</sup> | 0–31.75 / 0.25                                 | Par <sup>3</sup> , Ser, Ser-Add <sup>4</sup> | 50                        | 8000  | 1.3                 | 2.4  | 58         | +(0.15 + 1.5% of setting) / –(0.1 + 1% of setting) | 1                   | 1500        | 32L 5×5 QFN  | 7-bit         |

**Note 1:** Operating temperature up to +105 °C. **Note 2:** Glitch-safe: negative glitch only. **Note 3:** Parallel modes: latched and direct. **Note 4:** Serial-addressable mode.

# Phase and Amplitude Control

## Phase Shifter

Our 50Ω digital phase shifter offers an ideal solution for optimizing transmission phase with its low RMS phase and amplitude error levels, and dual parallel and serial programming options.

Visit our [website](#)  
to learn more



| Part Number | Operating Frequency (GHz) |     | Bits | Range (deg) | Resolution (deg) | Insertion Loss (dB) | RMS Phase Error (deg) | RMS Amplitude Error (dB) | Settling Time (ns) | V <sub>DD</sub> Range (V) | ESD HBM (V) | Package (mm) |
|-------------|---------------------------|-----|------|-------------|------------------|---------------------|-----------------------|--------------------------|--------------------|---------------------------|-------------|--------------|
|             | Min                       | Max |      |             |                  |                     |                       |                          |                    |                           |             |              |
| PE44820*    | 1.7                       | 2.2 | 8    | 358.6       | 1.4              | 6                   | 1.0                   | 0.1                      | 365                | 2.3–5.5                   | 500         | 32L 5×5 QFN  |

**Note:** \* With extended frequency support from 1–3 GHz.

## Monolithic Phase and Amplitude Controllers

Our 50Ω MPACs provide an integrated solution for analog beamforming and Doherty power amplifier optimization applications, and offer the reliable phase and amplitude control of two independent RF paths.

|            | Part Number | Operating Frequency (GHz) |       | Phase (deg)<br>(Range/Step/Bits) | Attenuation (dB)<br>(Range/Step/Bits) | Programming Mode | Insertion Loss (dB) | IIP3 (dBm) | P0.1dB (dBm) | V <sub>DD</sub> Range (V) | I <sub>DD</sub> (μA) | ESD HBM (V) | Package (mm) |
|------------|-------------|---------------------------|-------|----------------------------------|---------------------------------------|------------------|---------------------|------------|--------------|---------------------------|----------------------|-------------|--------------|
|            |             | Min                       | Max   |                                  |                                       |                  |                     |            |              |                           |                      |             |              |
| <b>NEW</b> | PE44951*    | 6.025                     | 7.525 | 360 / 5.6 / 6                    | 15.75 / 0.125 / 7                     | Serial           | 8.2                 | 56         | 25.5         | 2.3–5.5                   | 200                  | 1000        | 32L 5×5 LGA  |
|            | PE46120     | 1.8                       | 2.2   | –87.2 / 2.8 / 5                  | 7.5 / 0.5 / 4                         | Serial           | 6.9                 | 60         | 35           | 2.3–5.5                   | 350                  | 1000        | 32L 6×6 QFN  |
|            | PE46130     | 2.3                       | 2.7   | –87.2 / 2.8 / 5                  | 7.5 / 0.5 / 4                         | Serial           | 7.2                 | 70         | 35           | 2.3–5.5                   | 350                  | 1500        | 32L 6×6 QFN  |
|            | PE46140     | 3.4                       | 3.8   | –87.2 / 2.8 / 5                  | 7.5 / 0.5 / 4                         | Serial           | 6.5                 | 60         | 35           | 2.3–5.5                   | 350                  | 1500        | 32L 6×6 QFN  |

**Note:** \* Visit our website for the latest information.

## Digital Tunable Capacitors

Our DTCs continue a tradition of innovation, high performance, and ease-of-use by offering wideband tuning coverage, minimum loss, excellent linearity, and fast switching speed.

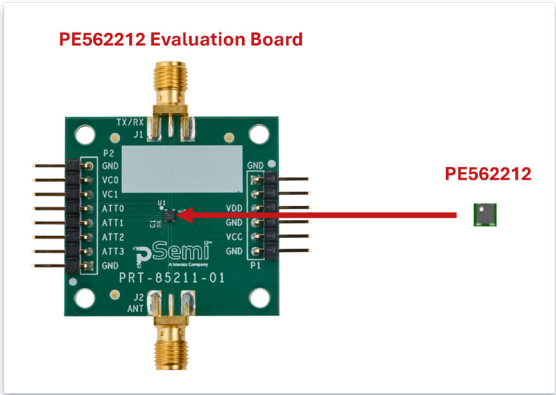
| Part Number | Part Number | Operating Frequency (MHz) |      | Shunt Capacitance (pF) |      | Tuning Ratio (Shunt) | Quality Factor (Shunt, 1 GHz) |                  | Peak Operating Voltage (V <sub>PK</sub> ) | V <sub>DD</sub> Range (V) | ESD HBM (V) | Package (mm) |
|-------------|-------------|---------------------------|------|------------------------|------|----------------------|-------------------------------|------------------|-------------------------------------------|---------------------------|-------------|--------------|
|             |             | Min                       | Max  | Min                    | Max  |                      | C <sub>MIN</sub>              | C <sub>MAX</sub> |                                           |                           |             |              |
| PE64102     | SPI         | 100                       | 3000 | 1.88                   | 14   | 7.4:1                | 50                            | 28               | 6                                         | 2.3–3.6                   | 2000        | 12L 2×2 QFN  |
| PE64904     | SPI         | 100                       | 3000 | 1.10                   | 5.10 | 4.6:1                | 35                            | 10               | 30                                        | 2.3–3.6                   | 1500        | 10L 2×2 QFN  |
| PE64906     | SPI         | 100                       | 3000 | 0.90                   | 4.60 | 5.1:1                | 40                            | 40               | 30                                        | 2.3–4.8                   | 2000        | 10L 2×2 QFN  |
| PE64907     | SPI         | 100                       | 3000 | 0.85                   | 2.40 | 2.82:1               | 41                            | 37               | 30                                        | 2.3–4.8                   | 2000        | 10L 2×2 QFN  |
| PE64909     | SPI         | 100                       | 3000 | 0.60                   | 2.35 | 3.9:1                | 40                            | 40               | 30                                        | 2.3–4.8                   | 2000        | 10L 2×2 QFN  |

# Front-end Modules

## 2.4 GHz IoT FEM

Our PE562212, built to support the fast adoption of the Matter standard, enables connectivity across Thread, Zigbee, Bluetooth BDR/EDR, Bluetooth Low Energy, low-to-medium throughput Wi-Fi (MCS7), and 2.4 GHz proprietary applications.

|     | Part Number | Operating Frequency (MHz) |        | P1.0dB (dBm) | Tx Gain (dB) | Tx Gain Control (dB) | Tx Gain Step (dB) | Rx NF (dB) | Rx Gain (dB) | Bypass Loss (dB) | Supply Voltage (v) | Package (mm)        |
|-----|-------------|---------------------------|--------|--------------|--------------|----------------------|-------------------|------------|--------------|------------------|--------------------|---------------------|
|     |             | Min                       | Max    |              |              |                      |                   |            |              |                  |                    |                     |
| NEW | PE562212    | 2400                      | 2483.5 | 21           | 23           | 15                   | 1                 | 1.6        | 15.0         | 0.6              | 3.0-3.6            | 14-lead 1.8x1.8 LGA |



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## Switch + LNA Module

pSemi's dual-channel switch + LNA module incorporates high-power, fail-safe switches and low-noise amplifiers with a bypass function. This receiver front-end module features low noise, excellent linearity, and very low power consumption in a compact size and is ideally suited to 5G mMIMO applications.

| Part Number | Operating Frequency (MHz) |      | OIP3 (dBm) | P <sub>MAX</sub> Avg (dBm) | Noise Figure (dB) | Isolation (dB, typ) | V <sub>DD</sub> Range (v) | Switching Time (µs) | Package (mm) |
|-------------|---------------------------|------|------------|----------------------------|-------------------|---------------------|---------------------------|---------------------|--------------|
|             | Min                       | Max  |            |                            |                   |                     |                           |                     |              |
| PE53231     | 3300                      | 4200 | 32         | 43                         | 1.0               | 47                  | 4.75-5.25                 | 0.5*                | 40L 6x6 LGA  |

Note: \* 50% CTRL to 90% or 10% RF.

# Mixers and Limiters

## Power Limiters

With both limiting and reflecting modes, our power limiters are highly integrated and smaller than PIN diode solutions; they feature an adjustable threshold control, high-power handling, and fast response and recovery times.

Visit our [website](#) to learn more



| Part Number | Operating Frequency (MHz) |      | Adjustable Power Limiting Threshold (dBm) | Max Power Handling (dBm) |    | IIP3 (dBm) | Control Voltage Range (V)* | ESD HBM (V) | Package (mm) | Product Notes |
|-------------|---------------------------|------|-------------------------------------------|--------------------------|----|------------|----------------------------|-------------|--------------|---------------|
|             | Min                       | Max  |                                           | Pulsed                   | CW |            |                            |             |              |               |
| PE45361     | 10                        | 8000 | 7–13                                      | 50                       | 36 | 37         | 0 to 0.3                   | 7000        | 12L 3×3 QFN  | Low Threshold |
| PE45450     | 0.008                     | 6000 | 25–35                                     | 47                       | 40 | 70         | –2.5 to –0.5               | 8000        | 12L 3×3 QFN  | Broadband     |

**Note:** \* Limiting mode.

## Up-Down Converter

Our dual-channel mmWave up-down converter is a highly integrated, ultra-wideband solution that delivers low power consumption, optimal I/Q balance, and minimal LO leakage to active antenna designs.

| Part Number | Operating Frequency (GHz) |      | Package (mm) | Product Note  |
|-------------|---------------------------|------|--------------|---------------|
|             | Min                       | Max  |              |               |
| PE128300    | 24.25                     | 29.5 | Flip Chip    | n258 and n257 |

## Prescaler

Our prescaler offers low-phase noise performance and low-power consumption with high-frequency support up to 13.5 GHz for a wide variety of compact high-performance applications.

| Part Number | Divide Ratio | Operating Frequency (MHz) |       | ESD HBM (V) | Package (mm) |
|-------------|--------------|---------------------------|-------|-------------|--------------|
|             |              | Min                       | Max   |             |              |
| PE35400     | Divide by 4  | 3000                      | 13500 | 250         | Die          |

## Mixers

Our UltraCMOS mixers apply quad FET array cores to deliver high linearity and isolation, low conversion loss, and easier implementation than GaAs-based FET arrays.

| Part Number             | Operating Frequency (MHz) |           |              | LO Drive (dBm) | Conv Loss (dB) | Isolation (dB, typ) |       | IIP3 (dBm) | ESD HBM (V) | Package (mm) |
|-------------------------|---------------------------|-----------|--------------|----------------|----------------|---------------------|-------|------------|-------------|--------------|
|                         | LO                        | RF        | IF, Nom      |                |                | LO–RF               | LO–IF |            |             |              |
| PE4140 <sup>1,2</sup>   | 0.01–6000                 | 0.01–6000 | 0.01–6000    | 0 to +20       | 6.5–7.5        | 25–40               | 25–40 | 32         | 100         | 6L 3×3 DFN   |
| PE4141 <sup>1,2,3</sup> | 0.01–1000                 | 0.01–1000 | 0.01–1000    | 0 to +20       | 7.0–8.0        | 40                  | 40    | 33         | 100         | 8L MSOP      |
| PE4151 <sup>1,3</sup>   | 245–410                   | 136–520   | 44.85–109.65 | –10 to –6      | 6.5–8.5        | 43                  | 40    | 26         | 1000        | 10L MSOP     |
| PE4152 <sup>1</sup>     | 245–831                   | 136–941   | 109.65       | –10 to +23     | 6.5–7.5        | 30–60               | 22–58 | 26         | 1000        | 20L 4×4 QFN  |

**Note 1:** Fully differential DC coupled ports. External baluns required. **Note 2:** Quad MOSFET array. **Note 3:** Low magnetic.



# Power Management

# Power Management Products

pSemi is a market leader in the development of innovative power conversion products based on switching capacitor power conversion targeting low-profile, high-efficiency applications.

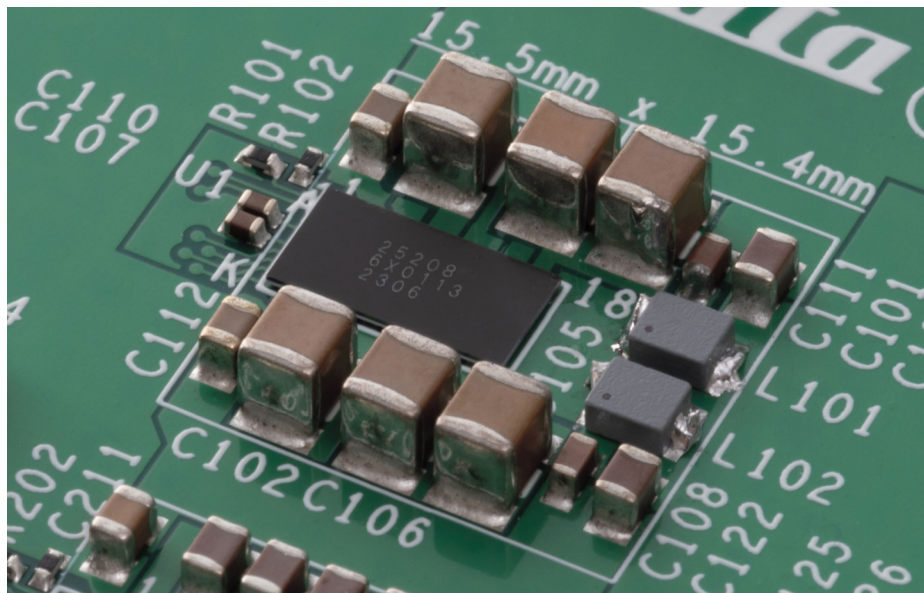
Our power product portfolios include charge pump capacitor dividers, two-stage buck regulators, two-stage boost regulators (LED backlight drivers), and multi-level converters.

## Charge Pump Capacitor Dividers

pSemi's patented, adiabatic charge pump technology reduces capacitive redistribution losses during switching transitions, resulting in industry best-in-class efficiency (up to 99% peak), and solution size reduction. These devices are available in a range of step-down ratios in the 15W to 160W power range.

| Part Number | $V_{IN}$ (V) | $V_{OUT}$ (V)           | $I_{OUT}$ (A) | Efficiency (%) | Package |
|-------------|--------------|-------------------------|---------------|----------------|---------|
| PE25200     | 5.5-10       | $V_{IN}/2$ & $V_{IN}/3$ | 10            | 97             | WLCSP   |
| PE25203     | 5.7-15       | $V_{IN}/2$ & $V_{IN}/3$ | 4             | 99             | WLCSP*  |
| PE25213     | 5.7-15       | $V_{IN}/2$ & $V_{IN}/3$ | 10            | 99             | WLCSP*  |
| PE25204     | 18-60        | $V_{IN}/4$              | 6             | 96.8           | WLCSP   |
| PE25208     | 18-60        | $V_{IN}/2$ & $V_{IN}/3$ | 8             | 98.2           | WLCSP*  |
| MYC0409     | 20-60        | $V_{IN}/4$              | 6             | 96.5           | LGA     |

**Note:** \* Type III PCB-compatible.



Power Management Products (continued)

Two-stage Buck Regulators

Our unique two-stage, step-down architecture provides best-in-class efficiency performance for low-profile applications (< 1.2 mm). These devices come in 3.3V and 12V input ranges with an optional I<sup>2</sup>C interface.

| Part Number      | V <sub>IN</sub> (V) | V <sub>OUT</sub> (V) | I <sub>OUT</sub> (A) | Efficiency (%)                              | Package |
|------------------|---------------------|----------------------|----------------------|---------------------------------------------|---------|
| PE24108          | 3.0-3.6             | 0.4-1.0              | 10                   | 88.5 (V <sub>OUT</sub> = 0.5V) <sup>1</sup> | QFN     |
| PE24110          | 3.0-3.6             | 0.35-0.7             | 12                   | 89 (V <sub>OUT</sub> = 0.5V) <sup>1</sup>   | QFN     |
| PE24111          | 3.0-3.6             | 0.35-0.7             | 20                   | 90 (V <sub>OUT</sub> = 0.5V) <sup>1</sup>   | QFN     |
| MYTNA1R86RELA2RA | 6-14.4              | 0.7-1.8              | 6                    | 90 (V <sub>OUT</sub> = 1.2V) <sup>2</sup>   | LGA     |
| MYTNC1R86RELA2RA | 6-14.4              | 0.7-1.8              | 6                    | 90 (V <sub>OUT</sub> = 1.2V) <sup>2</sup>   | LGA     |

Note 1: Low-profile solutions ≤ 1.2 mm.    Note 2: Low-profile solutions ≤ 2.0 mm.

Two-stage Boost Regulators (LED Backlight Drivers)

Our range of LED backlight drivers is based on a two-stage step-up to achieve the highest efficiency (up to 96%) to increase application battery runtime. The architecture results in very low-profile solutions (< 0.7 mm) for the latest low-profile display panels. These devices are available for 1-cell, 2-cell, and 3-cell battery input voltages with up to 15-bit resolution via I<sup>2</sup>C or PWM control.

| Part Number <sup>1</sup> | V <sub>IN</sub> (V) | V <sub>OUT</sub> (V) | Strings | I <sub>OUT</sub> per String (mA) | Dynamic Range (Bits) | Efficiency (%) | Package |
|--------------------------|---------------------|----------------------|---------|----------------------------------|----------------------|----------------|---------|
| ARC1C0605                | 2.5-5.5             | 30                   | 6       | 25                               | 12                   | 95             | WLCSP   |
| ARC1C0608                | 2.5-5.5             | 30                   | 6       | 25                               | 12                   | 95             | WLCSP   |
| ARC3C0845W               | 4.5-15              | 45                   | 8       | 43                               | 15                   | 95             | WLCSP   |
| PE23108 <sup>2</sup>     | 4.5-15              | 42                   | 8       | 33                               | 15                   | 96             | WLCSP   |

Note 1: Low-profile solutions ≤ 1 mm.    Note 2: Type III PCB-compatible.

# UltraCMOS® Technology

## Silicon-on-Insulator Innovation

UltraCMOS technology—a patented, advanced form of silicon-on-insulator (SOI)—enables pSemi to offer a market-leading combination of large- and small-signal performance.

With its outstanding RF and microwave properties, SOI provides an ideal substrate for integration. When paired with high-volume CMOS—the most widely-used semiconductor technology—the result is a reliable, repeatable technology platform that offers superior performance compared to other mixed-signal processes.

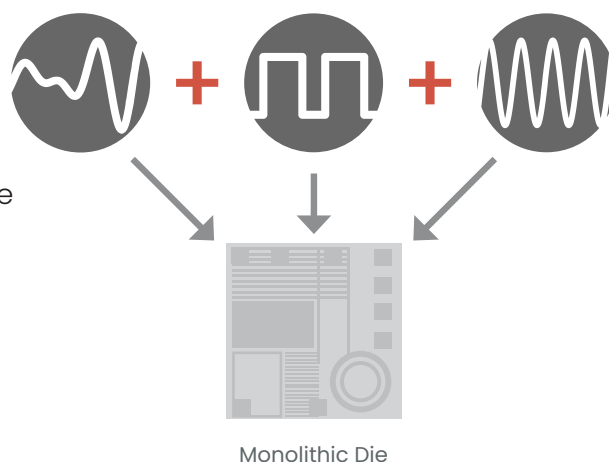
Our UltraCMOS products allow engineers the flexibility to prioritize attributes—like small form factor, low power consumption, high reliability, radiation tolerance, high ESD ratings, programmability, affordability, and reduced board area—based on use case.

## Intelligent Integration

Our UltraCMOS products feature intelligent integration—the ability to integrate RF, digital, and analog components on a single die.

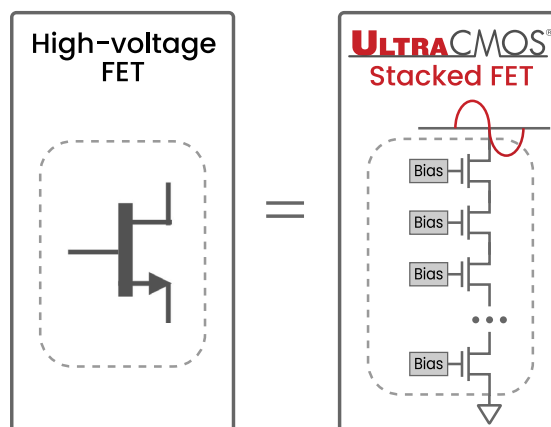
With intelligent integration, a single chip can integrate features such as RF amplifiers, analog DC tracking, digital logic control, high-performance switching, phase shifters, and digital step attenuators.

- ✓ **Flexibility**      ✓ **Reliability**
- ✓ **Configurability**      ✓ **Repeatability**
- ✓ **Smaller Footprint**      ✓ **Ease-of-Use**



## HaRP™ Technology

Our UltraCMOS technology uses stacked field-effect transistors (FETs) manufactured on an insulating substrate, providing the ability to pass high-power RF signals. The HaRP invention allows for very linear FETs that, when stacked together, provide excellent linearity performance.



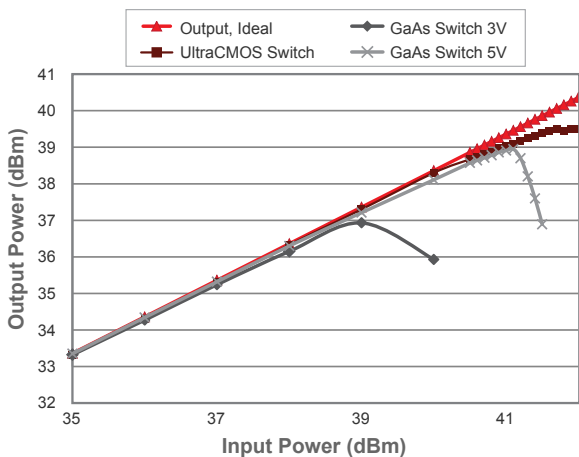
# High-performance RF Products

## Design Choice and Flexibility

RF complexity is growing exponentially as more wireless devices compete for spectrum across more frequency bands, and our products continue to achieve several SOI industry firsts that offer RF engineers the widest range of high-performance RF choices.

### Linearity Figure of Merit: P0.1dB

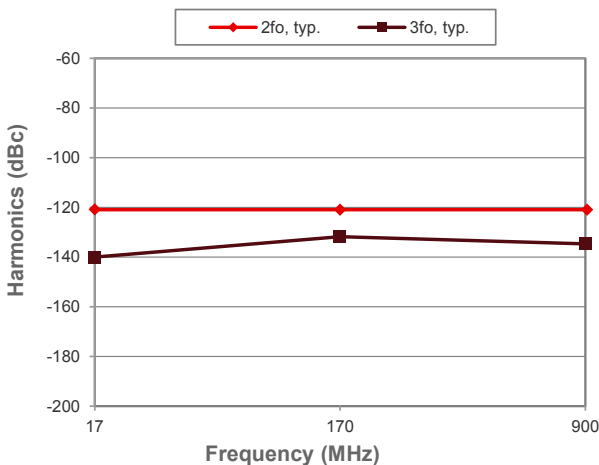
Our UltraCMOS switch exhibits close-to-ideal linearity behavior up to the input 0.1 dB compression point (P0.1 dB), which remains constant over power supply voltages.



Our UltraCMOS switches do not compress in the same manner as switches on other technology processes, so a traditional P1dB measurement cannot be performed. Instead, the P0.1 dB compression point is used as the figure of merit to reflect each switch’s true linearity performance.

### Industry-leading Linearity Performance

PE42723 second and third harmonics ( $P_{IN} = 65 \text{ dBmV}$ )



Our PE42723 SPDT RF switch for DOCSIS 4.0/3.1 features unmatched linearity performance enabled by our UltraCMOS technology, the only technology capable of addressing the linearity challenges of the future.

# Quality and Reliability

Our ISO9001:2015 and AS9100D-certified quality systems, advanced designs, progressive process technology, and excellent product performance enable us to consistently deliver high-quality, reliable products to our customers.

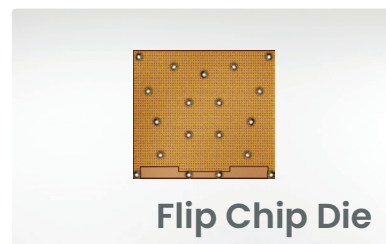
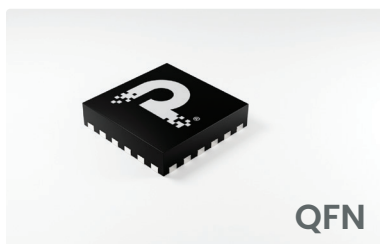
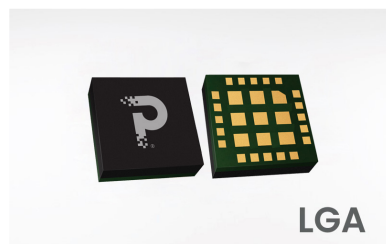
## pSemi Quality Policy

pSemi is committed to providing quality products and services that meet or exceed customers' requirements the first time, every time, by:

- ✓ Fully understanding our customers' requirements and expectations
- ✓ Providing products that use proven designs and manufacturing processes
- ✓ Developing a highly trained workforce that is motivated, empowered, and fully accountable
- ✓ Establishing strong relationships with world-class suppliers
- ✓ Continually improving the efficiency and effectiveness of our business processes and quality management systems

## Packaging

pSemi offers a variety of RoHS-compliant commercial packaging options, as shown below.





9369 Carroll Park Drive  
San Diego, CA 92121 USA  
+1-858-731-9400  
Sales@psemi.com

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