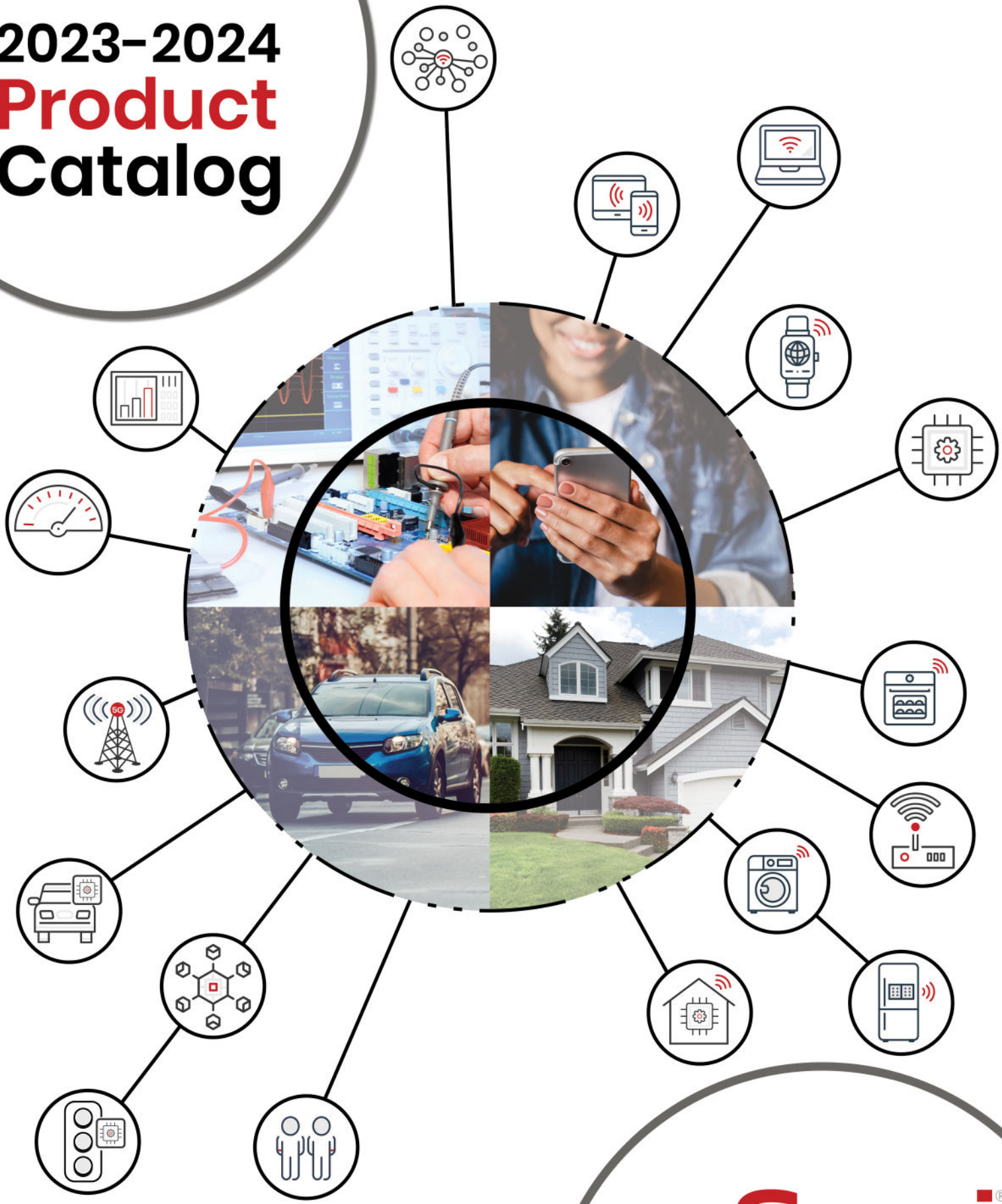
2023–2024 Product Catalog



pSemi®
A Murata Company

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Intelligent Electronics

for the Connected World

At pSemi, we design and manufacture innovative semiconductor solutions. We take what "can't be done" and transform it into an industry first. Whether it is a cutting-edge design technique, a transformative architecture or a novel technology platform, our team explores new ways to make electronics smaller, thinner, faster and more efficient.

Our RF, power management and sensor products are designed into devices that are used by millions of people worldwide. You'll find our integrated circuits in your smartphone, your cable modem, your laptop and your neighborhood's new 5G base station.

Headquartered in San Diego, we have offices on three continents and a worldwide sales team to support our customers. Our offices are located in major global tech hubs to support our growing team of talented electrical engineers.

Design & Application Support

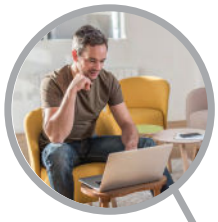
Next-generation RF and mmWave designs require high-performance products and outstanding support. Our team is committed to providing a complete solution, from engineering excellence and proven manufacturing to global sales and technical support.

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.

You can find helpful product resources at psemi.com.

- Application Notes
- Datasheets
- Evaluation Kit Manuals
- Gerber Files
- Material Declarations
- REACH Compliance Certificates
- RoHS Compliance Certificates
- S-Parameters
- Schematics and BOMs
- Software
- Videos



1000+ filed & pending patents

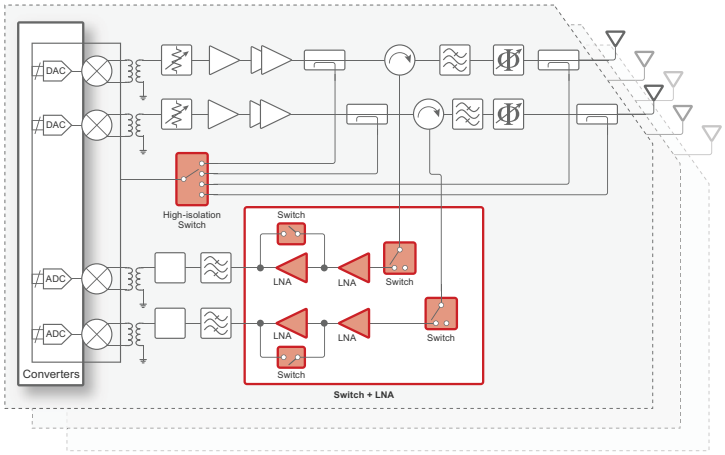
years of innovation

10 billion+ chips

New & Upcoming Products

High-isolation RF Switches

Our new high-isolation SP4T switches, offered in the industry's smallest form factor, provide high channel isolation and feature best-in-class performance and industry-leading broadband frequency coverage up to 8 GHz for seamless integration into 4G and 5G base stations and mMIMO architecture.



	Product Description[1]	Part Number	Product Highlight	Operating Frequency (MHz)		IIP3 (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	Package
				Min	Max			Min	Max	Min	Max			
New	SP4T, A	PE42445	High-isolation	10	8000	60	37	0.7	1	52	64	2.3–3.5	0.25	20L 3×3 LGA
New	SP4T, A	PE42446	High-isolation	10	8000	60	37	0.7	1	52	64	2.3–3.5	0.25	24L 4×4 LGA

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

Switch + LNA Modules

pSemi's dual-channel switch + LNA modules incorporate high-power fail-safe switches and low-noise amplifiers with bypass function. These receiver front-end modules feature low noise, excellent linearity and very low power consumption in compact size and are ideally suited to 5G mMIMO applications.

	Product Description	Part Number	Product Highlight	Operating Frequency (MHz)		OIP3 (dBm)	Pmax CW (dBm)	Insertion Loss (dB, typ)	Isolation (dB, typ)	V_{DD} Range (V)	Switching Time (µs)*	Package
New	Switch LNA	PE53230	Dual-channel	3300	3800	32	40	0.5	47	4.75–5.25	0.5	40L 6×6 LGA
New	Switch LNA	PE53231	Dual-channel	3500	4000	32	40	0.5	47	4.75–5.25	0.5	40L 6×6 LGA

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

Packaged Beamforming Front End

PE188210 is the packaged version of our beamformer die integrating power amplifiers, low-noise amplifiers, phase shifters and switches to provide design flexibility for 5G base stations, indoor and outdoor customer premises equipment, and point-to-point communication systems.

	Product Description	Part Number	Product Highlight	Operating Frequency (GHz)		Package
				Min	Max	
New! Aug. '23	8-Channel	**PE188210**	n257 mmWave FEM	26.5	29.5	168L 5.5×5.5 LGA

Packaged Up-Down Converter

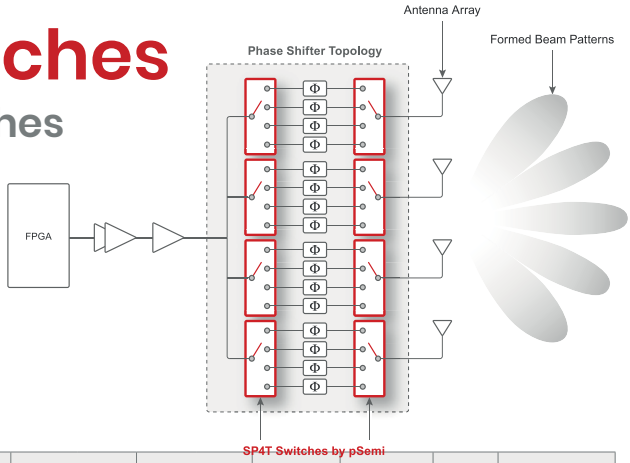
PE128310 is the packaged version of our dual-channel up-down converter supporting n258. It integrates frequency multipliers, quadrature mixers, amplifiers and switches into a package that can be paired with up to 16 pSemi beamforming RFICs, or 128 total beamformer channels, to support mMIMO, hybrid beamforming and other active antenna configurations.

	Product Description	Part Number	Product Highlight	Operating Frequency (GHz)		Package
				Min	Max	
New! Sept. '23	Dual-channel Up-Down Converter	**PE128310**	n258 and n257	24.25	29.5	48L 5.3×5.3 LGA

Recent Product Launches

High-power, High-linearity RF Switches

These recently released high-power, high-linearity SP4T switches deliver industry-leading RF performance across the n41, n77, n78 and n79 bands and have selectable phase shifts that enable the analog beam control used in hybrid beamforming architectures.



	Product Description[1]	Part Number	Product Highlight	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
				Min	Max				Min	Max	Min	Max				
New	SP4T, R	PE42443[3]	High-power High-linearity	1800	5000	85	50[4]	50	0.33	0.74	26	33	4.5–5.5	0.82	1000	20L 4×4 LGA
New	SP4T, R	PE42444[3]	High-power High-linearity	1800	5000	85	50[4]	50	0.32	0.68	25	38	4.5–5.5	0.86	1000	20L 4×4 LGA

Note 1: Reflective (R).
Note 2: 50% CTRL to 90% or 10% RF.
Note 3: The PE42444 supports positive supply voltages, while the PE42443 supports both positive and negative supply voltages.
Note 4: Peak power with LTE modulation.

Broadband RF Switches

These recently released broadband switches deliver RF performance, reliability and size in multiple product configurations to best meet challenging mmWave system designs from 9 kHz to 67 GHz as well as test and measurement applications.

	Product Description[1]	Part Number	Product Highlight	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
				Min	Max				Min	Max	Min	Max				
New	SP4T, R	PE42545	Broadband	0.009	67000	49	30	28	1	4.5	22.5	46	3.15–3.45	60[10]	2000	Flip Chip
New	SP4T, R	PE42546	Broadband	0.009	52000	48	29	27	1.1	3.8	23	41	3.15–3.45	60[10]	2000	20L 3×3 LGA

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

Complete 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.

Visit our website to learn more

Product Description[1]	Part Number	Product Highlight	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
			Min	Max				Min	Max	Min	Max				
SPST, OR	PE613010	Tuning Control	100	3000	70	–	38	0.20	0.80	4	11	2.3–5.5	7	2000	10L 2×2 QFN
SPDT, A/OR	PE42020	True DC	0 Hz	8000	62	36	38	0.6	1.1	34	56	11–15[3]	10	1000	20L 4×4 QFN
SPDT, A	PE42420[4]	High-isolation	20	6000	65	30	33	0.95	1.6	50	69	2.7–5.5	0.3	4000	20L 4×4 LGA
SPDT, A	PE42423	High-isolation	100	6000	65	36	39.5	0.8	0.95	41	51	2.3–5.5	0.5	3000	16L 3×3 QFN
SPDT, A	PE4251	Low Insertion Loss	10	4000	59	27	30.5	0.55	1.0	37	62	3.0–3.6	0.15	4000	8L MSOP
SPDT, A	PE42520	Broadband	0.009	13000	66	36	39	0.6	2.0	18	90	2.3–5.5	5.5	4000	16L 3×3 QFN
SPDT, A	PE42521	Broadband	0.009	13000	65	36	38	0.6	1.85	17	90	2.3–5.5	0.5	3000	16L 3×3 QFN
SPDT, A	PE42522	Broadband	0.009	26500	59	30	33	0.7	5.3	20	80	2.3–5.5	3	3500	29L 4×4 LGA
SPDT, A	PE42553	Broadband	0.009	8000	66	36	39	0.6	0.85	36	90	2.3–5.5	5.5	4000	16L 3×3 QFN
SPDT, A	PE4257	High-isolation	10	3000	55	33	31	0.75	1.2	44	64	2.7–3.3	2	1000	20L 4×4 QFN
SPDT, A	PE42721	75Ω Broadband	5	2200	60	18	27	0.4	0.65	53	85	2.3–5.5	1	2000	12L 3×3 QFN
SPDT, A	PE42742[8]	75Ω Broadband	5	2200	53	33	32[9]	0.45	1.7	53.6	94	2.3–5.5	3	3500	20L 4×4 QFN
SPDT, A	PE42750[8]	75Ω Broadband	5	2200	47.5	27.8	23.5[9]	0.7	1.7	57	84	2.7-3.6	2	2000	12L 3×3 QFN
SPDT, A	PE4280	75Ω Broadband	5	2200	50	25.8	26[8]	0.5	1.1	47	72	2.7-3.3	2	1000	20L 4×4 QFN
SPDT, A	PE42822	High-power	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	PE423422[4]	Automotive	100	6000	73.5	32	34	0.25	0.9	16	41	2.3–5.5	2	1000	12L 2×2 QFN
SPDT, R	PE42359[4]	Automotive	10	3000	55	34	33.5	0.35	1.1	14	35	1.8–3.3	2	2000	6L SC70
SPDT, R	PE4239	Low Insertion Loss	10	3000	45	30	27	0.7	0.9	23	32	2.7-3.3	0.3	1500	6L SC70
SPDT, R	PE42421	Low Insertion Loss	10	3000	55	34	30.5	0.35	0.5	20	30	1.8–3.3	1.5	2000	6L SC70
SPDT, R	PE42422	High-linearity	5	6000	81	32	34	0.23	0.9	17	68	2.3–5.5	2	4000	12L 2×2 QFN
SPDT, R	PE42424[4]	High-isolation, FS[5]	100	8500	60	30	41	0.8	0.95	45	47	2.3–5.5	0.145	2500	6L 1.5×1.5 DFN
SPDT, R	PE42426	High-linearity	5	6000	83	33	40	0.3	0.75	20	33	2.3–5.5	35	3000	12L 3×3 QFN
SPDT, R	PE42427	Low Insertion Loss	5	6000	75	32	34	0.23	0.9	17	68	2.3–5.5	2	4000	12L 2×2 QFN
SPDT, R	PE4245	Low Insertion Loss	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	Low Insertion Loss	10	3000	59	27	30.5	0.6	0.75	40	51	3.0–3.6	0.15	4000	8L MSOP
SPDT, R	PE42524	Wideband	10	40000	52	27	32.5	0.6	5.5	33	84	–	0.225	2000	Flip Chip
SPDT, R	PE42525	Wideband, FS5	0.009	60000	48	29	35	0.9	2.7	36	80	–	0.008	1000	Flip Chip
SPDT, R	PE4259	Low Insertion Loss	10	3000	55	34	34	0.35	0.5	20	30	1.8–3.3	1.5	2000	6L SC70
SPDT, R	PE426525	Wideband, FS[5], ET[6]	0.009	60000	48	27	35	0.9	2.7	36	80	–	0.008	1000	Flip Chip
SPDT, R	PE42722	75Ω Broadband	5	1794	–	33	41	0.2	0.85	29	50	2.3-5.5	15	1500	32L 5×5 QFN

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_{SS}, –11V to –15V) for operation. See datasheet for details.
Note 4: Operating temperature up to +105 °C.
Note 5: Fast switching (FS).
Note 6: Extended temperature (ET) range, –55 °C to +125 °C.
Note 7: Dual differential single pole double throw (DDSPDT).
Note 8: Unpowered state: PE42742: RFC–RF1 ON; PE42750: All ports terminated.
Note 9: P1dB levels.
Note 10: Measured in ns.
Note 11: Peak power with LTE modulation.

Complete Switch Portfolio (continued)

	Product Description[1]	Part Number	Product Highlight	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
				Min	Max				Min	Max	Min	Max				
	SPDT, R	PE42723	75Ω Broadband	5	1794	-	39	38	0.1	0.4	34	54	2.3–5.5	35	3000	12L 3×3 QFN
	SPDT, R	PE42724	75Ω Broadband	5	1794	-	39	38	0.1	0.4	19	39	2.3–5.5	35	2000	12L 3×3 QFN
	SPDT, R	PE42726	75Ω Broadband	5	1794	-	39	38	0.1	0.4	19	39	2.3–5.5	38	2000	12L 3×3 QFN
	SPDT, R	PE42820	High-power	30	2700	85	43	45.5	0.3	0.7	24	35	2.3–5.5	15	1500	32L 5×5 QFN
	SPDT, R	PE42821	High-power	100	2700	82	43	45.5	0.4	0.8	24	35	2.3–5.5	7	1500	32L 5×5 QFN
	SPDT, R	PE42823	High-power 7W	700	6000	70	38.5	46	0.25	0.53	23	59	2.3–5.5	0.85	4500	16L 3×3 QFN
	SP3T, R	PE42430	Low Insertion Loss	100	3000	66	27	30	0.45	0.55	30	40	3.0–5.5	0.5	4500	8L 1.5×1.5 DFN
	SP4T, A	PE42441	Low Insertion Loss	10	8000	58	30	31	0.8	1.2	31	45	3.0–3.55	5	2000	32L 5×5 LGA
	SP4T, A	PE42442	High-isolation	30	6000	58	33	35	0.85	2.35	32	67	2.3–5.5	0.255	2000	24L 4×4 QFN
New	SP4T, A	PE42445	High-isolation	10	8000	60	–	37	0.7	1	52	64	2.3–3.5	0.25	–	20L 3×3 LGA
New	SP4T, A	PE42446	High-isolation	10	8000	60	–	37	0.7	1	52	64	2.3–3.5	0.25	–	24L 4×4 LGA
	SP4T, A	PE42540	Broadband	0.00001	8000	58	30	33	0.7	1.2	27	84	3.0–3.6	5	2000	32L 5×5 LGA
	SP4T, A	PE42542	Broadband	0.009	18000	58	30	33	0.7	3.9	27	90	2.3–5.5	3	3500	29L 4×4 LGA
	SP4T, A	PE42543	Broadband	0.009	18000	59	30	33	0.7	4.1	29	90	2.3–5.5	0.5	2500	29L 4×4 LGA
	SP4T, OR	PE613050	Tuning Control	5	3000	72	–	–	0.20	0.55	17	28	2.3–5.5	2	2000	12L 2×2 QFN
	SP4T, R	PE423641[4]	Automotive	50	3000	68	35	37	0.5	0.95	22	32	2.65–3.3	1	2000	16L 3×3 QFN
	SP4T, R	PE42440	Low Insertion Loss	50	3000	67	33	41.5	0.45	0.85	22	34	2.7–3.3	2	2000	16L 3×3 QFN
New	SP4T, R	PE42443	High-power High-linearity	1800	5000	85	50[11]	50	0.33	0.74	26	33	4.5–5.5	0.82	1000	20L 4×4 LGA
New	SP4T, R	PE42444	High-power High-linearity	1800	5000	85	50[11]	50	0.32	0.68	25	38	4.5–5.5	0.86	1000	20L 4×4 LGA
New	SP4T, R	PE42545	Broadband	0.009	67000	49	30	28	1	4.5	22.5	46	3.15–3.45	60[10]	2000	Flip Chip
New	SP4T, R	PE42546	Broadband	0.009	52000	48	29	27	1.1	3.8	23	41	3.15–3.45	60[10]	2000	20L 3×3 LGA
	SP4T, R	PE42641	Low Insertion Loss	100	3000	68	35	–	0.45	0.55	27.5	35	2.65–2.85	2	2000	16L 3×3 QFN
	SP5T, A	PE42451	High-isolation	450	4000	58	33	35	1.6	2.25	50	68	2.7–3.3	0.2	3500	24L 4×4 QFN
	SP5T, A	PE42452	High-isolation	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[4]	Broadband, High ISO	10	8000	60	33	37.5	0.7	1.6	30	68	2.3–5.5	0.21	1000	24L 4x4 QFN
	SPDT, A	PE4256	Low Insertion Loss	5	3000	55	24	31	0.50	1.10	52	80	2.7–3.3	2	1000	20L 4×4 QFN
	SP6T, A	PE42562[4]	Broadband, Low IL	0.009	8000	60	33	37.5	0.7	1.6	30	68	2.3–5.5	0.210	1000	24L 4x4 QFN
	SP6T, A	PE426462	Broadband, ET[6]	10	8000	60	31	37.5	0.7	1.6	30	68	2.3–5.5	0.210	1000	24L 4x4 QFN
	SP8T, A	PE42482[4]	Broadband, High ISO	10	8000	60	33	37.5	0.7	1.6	30	85	2.3–5.5	0.227	1000	24L 4x4 QFN
	SP8T, A	PE42582[4]	Broadband, Low IL	0.009	8000	60	33	37.5	0.7	1.6	30	85	2.3–5.5	0.227	1000	24L 4x4 QFN
	SP8T, A	PE426482	Broadband, ET[6]	10	8000	60	31	37.5	0.7	1.6	30	85	2.3–5.5	0.227	1000	24L 4x4 QFN
	SP12T, A	PE42412[4]	Broadband, High ISO	10	8000	60	33	37.5	0.7	2.4	22	69	2.3–5.5	0.232	1000	32L 5x5 QFN
	SP12T, A	PE42512[4]	Broadband, Low IL	0.009	8000	60	33	37.5	0.7	2.4	22	69	2.3–5.5	0.232	1000	32L 5x5 QFN
	SP12T, A	PE426412	Broadband, ET[6]	10	8000	60	31	37.5	0.7	2.4	22	69	2.3–5.5	0.232	1000	32L 5x5 QFN
	SP(3/5)T, R	PE42850	High-power	30	1000	42	42.5	45.5	0.25	0.35	30	36	2.3–5.5	15	1500	32L 5×5 QFN
	SP(3/5)T, R	PE42851	High-power	100	1000	42	42.5	45.5	0.25	0.4	30	36	2.3–5.5	6	1500	32L 5×5 QFN

Switches by Application

Visit our website to learn more

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.

	Product Description[1]	Part Number	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
			Min	Max				Min	Max	Min	Max				
	SPDT, R	PE42422	5	6000	81	32	34	0.23	0.9	17	68	2.3–5.5	2	4000	12L 2×2 QFN
	SPDT, R	PE42426	5	6000	83	33	40	0.3	0.75	20	33	2.3–5.5	35	3000	12L 3×3 QFN
	SPDT, R	PE42427	5	6000	75	32	34	0.23	0.9	17	68	2.3–5.5	2	4000	12L 2×2 QFN
New	SP4T, R	PE42443	1800	5000	85	50[3]	50	0.33	0.74	26	33	4.5–5.5	0.82	1000	20L 4×4 LGA
New	SP4T, R	PE42444	1800	5000	85	50[3]	50	0.32	0.68	25	38	4.5–5.5	0.86	1000	20L 4×4 LGA

Note 1: Reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF. **Note 3:** Peak power with LTE modulation.

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 bandwidths up to 8.5 GHz.

	Product Description[1]	Part Number	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
			Min	Max				Min	Max	Min	Max				
	SPDT, A	PE42420[3]	20	6000	65	30	33	0.95	1.6	50	69	2.7–5.5	0.3	4000	20L 4×4 LGA
	SPDT, A	PE42423	100	6000	65	36	39.5	0.8	0.95	41	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[3]	100	8500	60	30	41	0.8	0.95	45	47	2.3–5.5	0.145	2500	6L 1.5×1.5 DFN
	SP4T, A	PE42442[3]	30	6000	58	33	35	0.85	2.35	32	67	2.3–5.5	0.255	2000	24L 4×4 QFN
New	SP4T, A	PE42445	10	8000	60	–	37	0.7	1	52	64	2.3–3.5	0.25	–	20L 3×3 LGA
New	SP4T, A	PE42446	10	8000	60	–	37	0.7	1	52	64	2.3–3.5	0.25	–	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[3]	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[3]	10	8000	60	33	37.5	0.7	1.6	30	68	2.3–5.5	0.210	1000	24L 4×4 QFN
	SP8T, A	PE42482[3]	10	8000	60	33	37.5	0.7	1.6	30	85	2.3–5.5	0.227	1000	24L 4×4 QFN
	SP12T, A	PE42412[3]	10	8000	60	33	37.5	0.7	2.4	22	69	2.3–5.5	0.232	1000	32L 5×5 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.

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[1]	Part Number	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
		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	34	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	27	30	0.45	0.55	30	40	3.0–5.5	0.500	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	30	31	0.8	1.2	31	45	3.0–3.55	5	2000	32L 5×5 LGA
SP4T, R	PE42641	100	3000	68	35	–	0.45	0.55	27.5	35	2.65–2.85	2	2000	16L 3×3 QFN

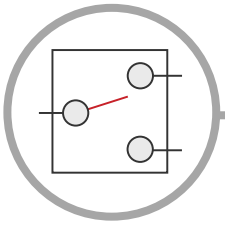
Note 1: Absorptive (A) or reflective (R). **Note 2:** 50% CTRL to 90% or 10% RF.

75Ω Wired Broadband Switches[1]

Our high-performance 75Ω switches simplify your next RF design by providing excellent isolation, low insertion loss and a CMOS/TTL-compatible control to address the needs of wired broadband applications.

Product Description[2]	Part Number	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
		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[4]	5	2200	53	33	32[5]	0.45	1.7	53.6	94	2.3–5.5	3	3500	20L 4x4 QFN
SPDT, A	PE42750[4]	5	2200	47.5	27.8	23.5[5]	0.7	1.7	57	84	2.7–3.6	2	2000	12L 3x3 QFN
SPDT, A	PE4280	5	2200	50	25.8	26[5]	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: General-purpose, reflective 50Ω switches can also be used in a 75Ω environment.
Note 2: Absorptive (A) or reflective (R).
Note 3: 50% CTRL to 90% or 10% RF.
Note 4: Unpowered state: PE42742: RFC–RF1 ON; PE42750: All ports terminated.
Note 5: P1dB levels.



Using 50Ω Switches in 75Ω Systems

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

pSemi A Murata Company

50Ω Broadband RF Switches

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

Product Description[1]	Part Number	Operating Frequency (MHz)		IIP3/IIP2 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[3]	ESD HBM (V)	Package
		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
SPDT, R	PE42524	10	40000	52 / –	27	32.5	0.6	5.5	33	84	-	0.225	2000	Flip Chip
SPDT, R	PE42525	0.009	60000	48 / 112	0.9	35	0.9	2.7	36	80	-	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	60[3]	2000	Flip Chip
SP4T, R	PE42546	0.009	52000	48	29	27	1.1	3.8	23	41	3.15-3.45	60[3]	2000	20L 3×3 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:** Measured in ns.

50Ω High-power Switches

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

Product Description[1]	Part Number	Operating Frequency (MHz)		IIP3 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
		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	PE42821	100	2700	82	43	45.5	0.4	0.8	24	35	2.3–5.5	7	1500	32L 5×5 QFN
SPDT, R	PE42823[3]	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
SP(3/5)T, R	PE42851	100	1000	42	42.5	45.5	0.25	0.4	30	36	2.3–5.5	6	1500	32L 5×5 QFN
New SP4T, R	PE42443	1800	5000	85	50[4]	50	0.33	.074	26	33	4.5–5.5	0.82	1000	20L 4×4 LGA
New SP4T, R	PE42444	1800	5000	85	50[4]	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 LTE modulation.

Antenna Tuning Switches

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

Product Description*	Part Number	Operating Frequency (MHz)		RON (Ω)	COFF (pF)	IMD3 (dBm)	Peak RF Voltage (Vpk)	Package
		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 applications.

Product Description[1]	Part Number	Operating Frequency (MHz)		IIP3/IIP2 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[2]	ESD HBM (V)	Package
		Min	Max				Min	Max	Min	Max				
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.

Extended Temperature RF Switches

Our 50Ω 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[1]	Part Number	Operating Frequency (MHz)		IIP3/IIP2 (dBm)	Pmax CW (dBm)	P0.1dB (dBm)	Insertion Loss (dB)		Isolation (dB)		V_{DD} Range (V)	Switching Time (µs)[3]	ESD HBM (V)	Package
		Min	Max				Min	Max	Min	Max				
SPDT, R	PE426525	0.009	60000	48 / 112	27	35	0.9	2.7	36	80	-	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

Visit our website to learn more

Wired Broadband RF Digital Step Attenuators

Our 75Ω wired 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.

Product Description	Part Number	Attenuation (dB) (Range/ 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
				Min	Max	Min	Max					
6-bit	PE4314[1]	0–31.5 / 0.5	Parallel[2], 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[2], Serial	1	2000	1.4	1.8	52	±(0.15 + 4% of setting)	1	500	20L 4×4 QFN

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 wireless applications.

Product Description	Part Number	Attenuation (dB) (Range/ 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
				Min	Max	Min	Max					
7-bit	PE43711	0–31.75 / 0.25	Parallel[1], 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[1], Ser-Add[2]	0.009	6000	1.3	2.45	57	±(0.20 + 1.5% of setting)	275	3000	32L 5×5 QFN
7-bit	PE43713[3]	0–31.75 / 0.25	Parallel[1], Ser-Add[2]	0.009	6000	1.3	2.45	57	±(0.20 + 1.5% of setting)	275	3000	32L 5×5 QFN

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.

Product Description	Part Number	Attenuation (dB) (Range/ 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
				Min	Max	Min	Max					
2-bit	PE43205[1]	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[3]	50	3000	0.6	0.7	61	±(–0.25/+0.40 of setting)	0.03	2000	12L 3×3 QFN
5-bit	PE43650	0–15.5 / 0.5	Parallel[3], Serial	0.009	6000	2.4	2.9	58	±(0.3/+0.30 of setting)	4	500	24L 4×4 QFN
6-bit	PE4312[1,2]	0–31.5 / 0.5	Parallel[3], Serial	1	4000	1.3	2.1	59	±(0.15 + 2% of setting)	0.5	1500	20L 4×4 QFN
6-bit	PE43508[1,2]	0–31.5 / 0.5	Par[3], Ser, Ser-Add[4]	0.009	55000	2.2	5.9	50	+(1.00+4.5% of setting) / -1	0.330	1000	Flip Chip
6-bit	PE43610[1,2]	0–31.5 / 0.5	Par[3], Ser, Ser-Add[4]	0.009	13000	1.6	3	50	+(1.00+4.5% of setting) / -1	0.330	1000	24L 4×4 LGA
6-bit	PE43614[1,2]	0–31.5 / 0.5	Par[3], Ser, Ser-Add[4]	0.009	45000	3	5.8	50	+(1.00+4.5% of setting) / -1	0.330	1000	24L 4×4 LGA
7-bit	PE43670	0–31.75 / 0.25	Parallel[3], Ser-Add[4]	0.009	4000	1.9	2.4	59	±(0.2/+0.15 of setting)	4	500	32L 5×5 QFN
7-bit	PE43704[2]	0–31.75 / 0.25	Par[3], Ser, Ser-Add[4]	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[1,2]	0–31.75 / 0.25	Par[3], Ser, Ser-Add[4]	50	8000	1.3	2.4	58	+(0.15 + 1.5% of setting) –(0.1 + 1% of setting)	1	1500	32L 5×5 QFN

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 & Amplitude Control

Visit our website to learn more

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.

Part Number	Operating Frequency (GHz)		Bit #	Range (°)	Resolution (°)	Insertion Loss (dB)	RMS Phase Error (°)	RMS Amplitude Error (dB)	Settling Time (ns)	V_{DD} Range (V)	ESD HBM (V)	Package
	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 & Amplitude Controllers (MPACs)

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

Part Number	Phase (°) (Range/ Steps) 5 bits	Attenuation (dB) (Range/Steps) 4 bits	Programming Mode	Operating Frequency (GHz)		Insertion Loss (dB)	IIP3 (dBm)	P0.1dB (dBm)	V_{DD} Range (V)	I_{DD} (mA)	ESD HBM (V)	Package
				Min	Max							
PE46120	–87.2 / 2.8	7.5 / 0.5	Serial	1.8	2.2	6.9	60	35	2.3–5.5	350	1000	32L 6×6 QFN
PE46130	–87.2 / 2.8	7.5 / 0.5	Serial	2.3	2.7	7.2	70	35	2.3–5.5	350	1500	32L 6×6 QFN
PE46140	–87.2 / 2.8	7.5 / 0.5	Serial	3.4	3.8	6.5	60	35	2.3–5.5	350	1500	32L 6×6 QFN

Digital Tunable Capacitors (DTCs)

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

Part Number	Interface	Operating Frequency (MHz)		Min Shunt Capacitance (pF)	Max Shunt Capacitance (pF)	Tuning Ratio (Shunt)	Quality Factor (Shunt, 1 GHz)		Peak Operating Voltage (V_{PK})	V_{DD} Range (V)	ESD HBM (V)	Package
		Min	Max				Cmin	Cmax				
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

Tx/Rx Modules

Beamforming Front Ends

Visit our website to learn more

Our beamforming front-end solutions integrate power amplifiers, low-noise amplifiers, phase shifters and switches into a single die or IC that provide optimal signal strength for up to 1024-element antenna arrays.

	Product Description	Part Number	Product Highlight	Operating Frequency (GHz)		Package
				Min	Max	
	8-Channel	PE188200	n257 mmWave FEM	26.5	29.5	Flip Chip
New! Aug. '23	8-Channel	PE188210	n257 mmWave FEM	26.5	29.5	168L 5.5×5.5 LGA

Integrated Products

Switch + LNA Modules

pSemi's dual-channel switch + LNA modules incorporate high-power fail-safe switches and low-noise amplifiers with bypass function. These receiver front-end modules feature low noise, excellent linearity and very low power consumption in compact size and are ideally suited to 5G mMIMO applications.

	Product Description	Part Number	Product Highlight	Operating Frequency (MHz)		OIP3 (dBm)	Pmax CW (dBm)	Insertion Loss (dB, typ)	Isolation (dB, typ)	V_{DD} Range (V)	Switching Time (µs)[1]	Package
New	Switch LNA	PE53230	Dual-channel	3300	3800	32	40	0.5	47	4.75–5.25	0.5	40L 6×6 LGA
New	Switch LNA	PE53231	Dual-channel	3500	4000	32	40	0.5	47	4.75–5.25	0.5	40L 6×6 LGA

Note 1: 50% CTRL to 90% or 10% RF.

Mixers & Limiters

Power Limiters

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.

Part Number	Description	Operating Frequency	Adjustable Power Limiting Threshold (dBm)	Max Power Handling (dBm)		IIP3 (dBm)	Control Voltage Range (V)*	ESD HBM (V)	Package
				Pulsed	CW				
PE45361	Limiting, Reflecting	10 MHz–8 GHz	7–13	50	36	37	0 to 0.3	7000	12L 3×3 QFN
PE45450	Limiting, Reflecting	9 kHz–6 GHz	25–35	47	40	70	–2.5 to –0.5	8000	12L 3×3 QFN

Note: * Limiting mode.

Mixers & Limiters (continued)

Up-Down Converters

Our mmWave up-down converters are highly integrated, ultra-wideband solutions that deliver low power consumption, optimal I/Q balance and minimal LO leakage to active antenna designs.

Visit our website to learn more

	Product Description	Part Number	Product Highlight	Operating Frequency (GHz)		Package
				Min	Max	
	Dual-channel Up-Down Converter	PE128300	n258 and n257	24.25	29.5	Flip Chip
New! Sept. '23	Dual-channel Up-Down Converter	**PE128310**	n258 and n257	24.25	29.5	48L 5.3×5.3 LGA

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	Description	Divide Ratio	Operating Frequency (MHz)		ESD HBM (V)	Package
			Min	Max		
PE35400	Low Power	Divide by 4	3000	13500	250	Die

Mixers

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

Part Number	Operating Frequency (MHz)			LO Drive (dBm)	Conv Loss (dB)	Isolation (dB, typ)		IIP3 (dBm)	ESD HBM (V)	Package
	LO	RF	IF, Nom			LO–RF	LO–IF			
PE4140[1,2]	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[1,2,3]	0.01–1000	0.01–1000	0.01–1000	0 to +20	7.0–8.0	40	40	33	100	8L MSOP
PE4151[1,3]	245–410	136–520	44.85–109.65	–10 to –6	6.5–8.5	43	40	26	1000	10L MSOP
PE4152[1]	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.

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.

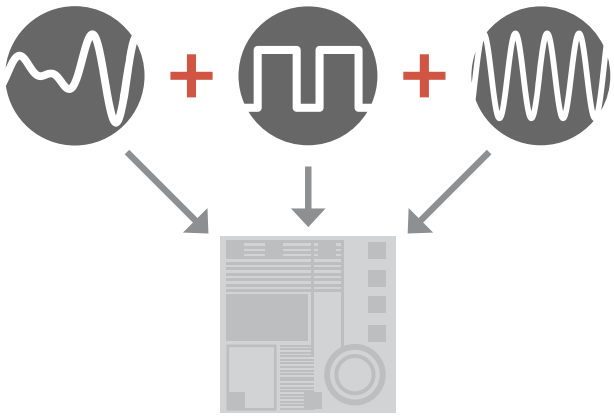
With its outstanding RF and microwave properties, SOI provides an ideal substrate for integration. When paired with high-volume CMOS — the most widely-used semiconductor technology — the result is a reliable, repeatable technology platform that offers superior performance compared to other mixed-signal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

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, reduced board area — based on use case.

Intelligent Integration

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.

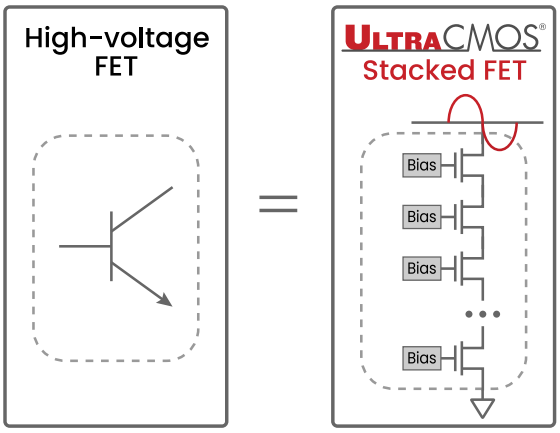


One Monolithic Die

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

HaRP™ Technology

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 linear performance.



High-performance RF Products

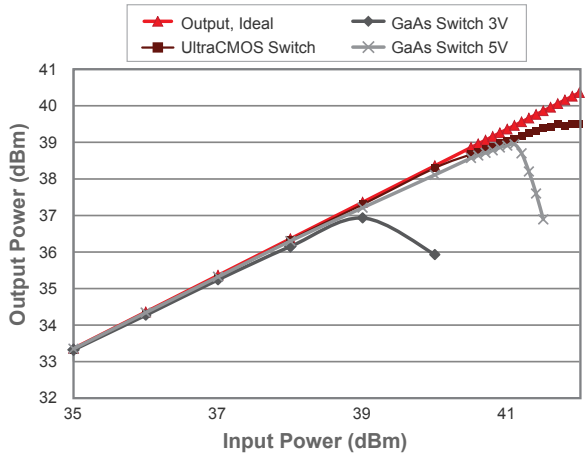
Design Choice & Flexibility

RF complexity is growing exponentially as more wireless devices compete for signals throughout 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.

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, reduced board area—based on use case.

Linearity Figure of Merit: P0.1dB

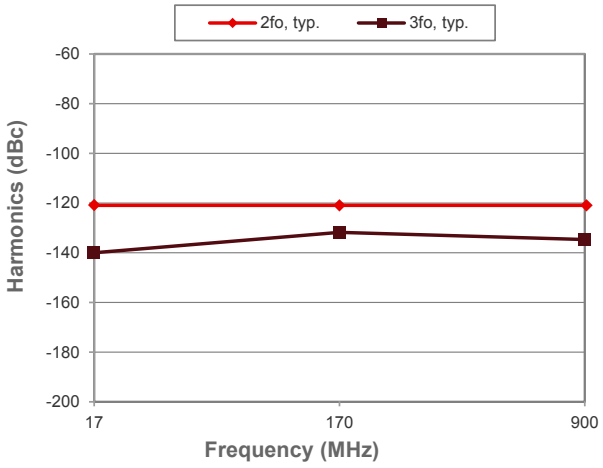
An UltraCMOS switch exhibits close to ideal linearity behavior up to the input 0.1dB compression point (P0.1dB), which remains invariant over power supply voltages.



UltraCMOS switches do not compress in the same manner as switches on other technology processes, and a traditional P1dB measurement cannot be performed. Because UltraCMOS switch linearity is defined by the power handling capabilities of each switch, the P0.1dB compression point (derived from P_{MAX}) is used as the figure of merit to reflect each switch's true linearity performance.

Industry-leading Linearity Performance

PE42723 second and third harmonics (PIN = 65 dBmV)



The PE42723 SPDT RF switch for DOCSIS 3.1/3.0 features unmatched linearity performance enabled by UltraCMOS technology, the only technology capable of addressing the linearity challenges of the future.

Quality & Reliability

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

- Fully understanding customers' requirements and expectations
- Providing products utilizing 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 business processes and quality management systems

Our systems and processes allow us to consistently deliver high-quality, reliable products to our customers.

- **ISO9001:2015**
- **AS9100D**
- **IATF16949:2016**

Packaging

pSemi offers a variety of RoHS-compliant commercial packaging options.

Actual Size

6L SC70
1.3 × 2.0 × 1.0

Actual Size

8L 1.5×1.5 DFN
1.5 × 1.5 × 0.50

Actual Size

10L 2×2 QFN
2.0 × 2.0 × 0.45

Actual Size

12L 2×2 QFN
2.0 × 2.0 × 0.60

Actual Size

8L MSOP
3.0 × 3.0 × 1.1

Actual Size

10L MSOP
3.0 × 3.0 × 0.86

Actual Size

6L DFN
3.0 × 3.0 × 0.9

Actual Size

12L 3×3 QFN
3.0 × 3.0 × 0.75

Actual Size

16L 3×3 QFN
3.0 × 3.0 × 0.75

Actual Size

20L 3×3 LGA
3.0 × 3.0 × 0.75

Actual Size

20L 4×4 LGA
4.0 × 4.0 × 0.9

Actual Size

20L 4×4 QFN
4.0 × 4.0 × 0.9

Actual Size

24L 4×4 QFN
4.0 × 4.0 × 0.9

Actual Size

24L 4×4 LGA
4.0 × 4.0 × 0.9

Actual Size

29L 4×4 LGA
4.0 × 4.0 × 0.9

Actual Size

32L 5×5 QFN
5.0 × 5.0 × 0.9

Actual Size

32L 5×5 LGA
5.0 × 5.0 × 0.9

Actual Size

32L 6×6 QFN
6.0 × 6.0 × 0.9

Actual Size

40L 6×6 LGA
6.0 × 6.0 × 0.8

All dimensions are listed in millimeters (width × length × height) and are approximate. See product datasheets for exact dimensions.

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