

High-performance UltraCMOS™ Cellular/Communications Switches

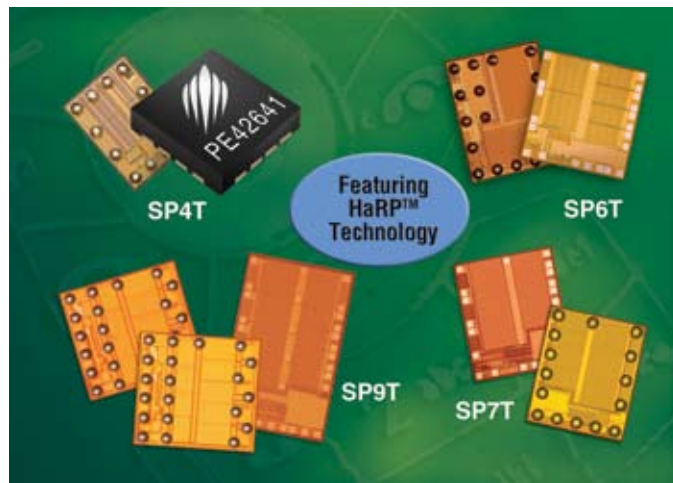
HaRP™ Technology Advances UltraCMOS™ Handset Switches

Peregrine's high-performance cellular handset switches offer a different approach to solving the toughest high-power, multi-throw switching challenges and are the first and only CMOS-based devices that can be connected directly to the GSM handset antenna. New HaRP™ technology enhancements allow for dramatic improvements in harmonic results, linearity and overall RF performance -- specifications required by the 3GPP standards body for GSM/WCDMA applications, and today unmatched in the industry:

- ▶ **IIP3** +70 dBm
- ▶ **IMD3** -112 dBm
- ▶ **Exceptional harmonic performance:**
2fo = -90 dBc and 3fo = -83 dBc
- ▶ **Space-saving SP7T Flip Chip:** PE42674
- ▶ **Ultra-small SP9T:** PE42692 = 1.3 mm x 1.2 mm

UNPARALLELED LINEARITY IN GENERAL-PURPOSE COMMUNICATIONS SWITCHES

Peregrine's new PE42641 is the first general-purpose switch to integrate HaRP technology. In applications where exceptionally high ESD protection is required, such as antenna tuning, this switch is rated industry best with 4.0 kV HBM ESD protection on the antenna. Packaged in an Ultra-compact, RoHS-compliant 3x3x0.75mm QFN, this new RF switch is at the forefront of technological innovation.



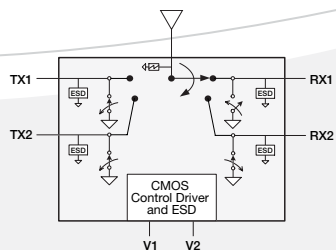
- ▶ **Symmetric, High-Power SP4T**
all ports WEDGE/CDMA-Compliant
- ▶ **Exceptional ESD** 4.0 kV HBM on the antenna
- ▶ **Low harmonics:**
2fo = -86 dBc and 3fo = -81 dBc at +35 dBm
- ▶ **IMD3** -110 dBm at WCDMA Band I
- ▶ **IIP3** +68 dBm

TECHNICAL SUPPORT AND ORDER INFORMATION

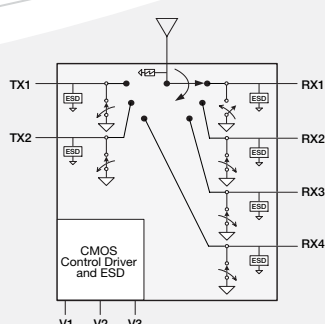
Products samples, unit pricing and volume production are available now through Peregrine and its worldwide distributors. Visit us online to find a sales office near you.

FUNCTIONAL BLOCK DIAGRAMS

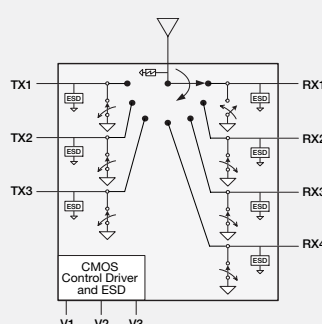
PE42612/PE42641*



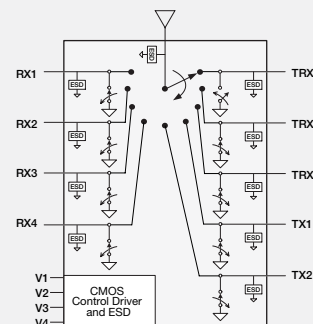
PE42632/PE42660



PE42672/PE42674



PE42692/94



*PE42641 provides four symmetric TX ports

CELLULAR/COMMUNICATIONS SWITCHES - 50 Ω

Function	Part Number ¹	2nd Harmonic		3rd Harmonic		Insertion Loss (dB @ 1 GHz)	Isolation (dB @ 1 GHz)	IMD3 (dBm)	Typical I _{dd} (μA @ 2.75 V)	V _{dd} Range (V)	Package
		35 dBm TX Input 850/900 MHz	33 dBm TX Input 1800/1900 MHz	35 dBm TX Input 850/900 MHz	33 dBm TX Input 1800/1900 MHz						
SP4T - 2Tx/2Rx	*PE42612 ²	-82	-89	-74	-68	0.55	39	-	11 ³	2.4-2.95	Flip Chip
SP6T - 2Tx/4Rx	*PE42632 ²	-87	-86	-78	-76	0.65	38	-	13	2.5-2.8	Flip Chip
SP7T - 3Tx/4Rx	*PE42674 ²	-85	-84	-79	-76	0.65	39	-112	13	2.5-3.2	Flip Chip
NEW SP9T - 2Tx/3TRx/4Rx	*PE42692 ²	-75	-73	-75	-73	0.60	43	-111	100	2.4-3.0	Flip Chip
NEW SP9T - 2Tx/3TRx/4Rx	*PE42694 ²	-75	-73	-75	-73	0.60	43	-111	100	2.4-3.0	Flip Chip
SP6T - 2Tx/4Rx	*PE42660	-85	-84	-83	-82	0.55	48	-	13	2.65-2.85	DIE
SP7T - 3Tx/4Rx	*PE42672 ²	-85	-84	-79	-77	0.60	44	-109	13	2.65-2.85	DIE
NEW SP4T - 4TX	PE42641 ²	-86	-87	-81	-80	0.45	35	-110	13	2.65-2.85	16L 3x3 QFN
SP6T - 2Tx/4Rx	PE4268	-84	-80	-70	-66	0.60	50	-	13 ³	2.4-2.8	20L 4x4 QFN

Note 1: Operating Frequency 100-3000 MHz
Note 2: 1.8 V-compliant logic (VIH / VIL = 1.4 / 0.4 V)

Note 3: Measured at 2.6 V
Note 4: Measured at 3.1 V

*Contact factory for pricing and availability.

About UltraCMOS™ Technology

UltraCMOS™ mixed-signal process technology is a patented variation of silicon-on-insulator (SOI) technology. It is the first commercially qualified use of Ultra-Thin-Silicon (UTSi®) on sapphire substrates with high yields and competitive costs. Since sapphire is a near perfect insulator, UltraCMOS products can integrate high-quality passive devices directly into the IC, combining high-performance RF, mixed-signal, passive elements, nonvolatile memory and digital functions in a single device. UltraCMOS products are fabricated in standard high-volume CMOS facilities, achieving the economy, scalability and integration of CMOS, while enabling significant performance advantages over competing mixed-signal processes such as GaAs, SiGe BiCMOS and bulk silicon CMOS in applications where RF performance, low power and integration are paramount.

About Peregrine Semiconductor

Peregrine Semiconductor designs, manufactures, and markets high-performance communications RFICs. Manufactured on the Company's proprietary UltraCMOS™ mixed-signal process technology, Peregrine products are ideally suited for high-growth RF/Wireless applications such as WCDMA, EDGE and GSM digital cellular and mobile TV; broadband communications such as DTV/PCTV/DVR; and in high-reliability applications such as telecom infrastructure, industrial, automotive, military and satellite systems. Peregrine UltraCMOS devices are manufactured in world-class CMOS foundries located in Australia, Asia and Japan. The Company, headquartered in San Diego, California, maintains global sales support and a worldwide technical distribution network.



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