

New Wireless UltraCMOS™ Switches Extend Performance to 3 GHz

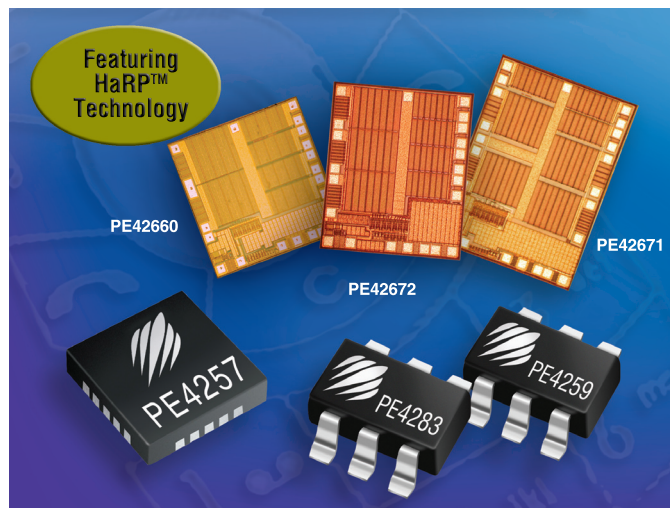
Single Control Input, 2 kV HBV ESD Ideal for Wireless Applications

New from Peregrine Semiconductor, the world's highest performance, general use RF switches feature high isolation, high ESD tolerance and low insertion loss, providing an optimal solution for most any wireless application. Developed on Peregrine's patented UltraCMOS™ silicon-on-sapphire process technology, these multi-throw switches deliver an extraordinary combination of performance, price and monolithic integration. Simply stated, the new wireless RF switches from Peregrine are simply designed, and profoundly different.

- ▶ **High ESD Tolerance** 2.0 kV HBM
- ▶ **No blocking capacitors**
- ▶ **High Isolation** 64 dB @ 1 GHz
- ▶ **Integrated CMOS controller**
- ▶ **Low Insertion Loss** 0.35 dB @ 1 GHz
- ▶ **P1dB** 41 dBm
- ▶ **Flip Chip packaging**
- ▶ **Low Current Drain** 8µA

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:

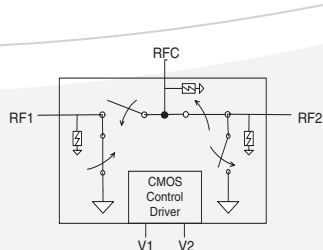
- ▶ +70 dBm IIP3
- ▶ -115 dBm IMD3
- ▶ Exceptional harmonic performance:
2fo = -88 dBc and 3fo = -80 dBc
- ▶ 1.5 kV HBM ESD tolerance all ports
- ▶ Ultra-small SP7T: PE42672 = 1.0 x 1.2 mm

TECHNICAL SUPPORT AND ORDER INFORMATION

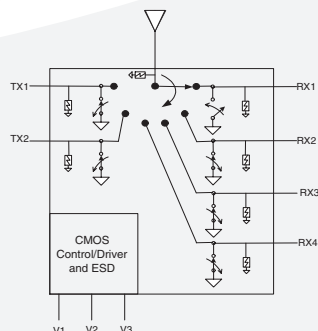
Products samples, unit pricing and volume production are available now through Peregrine and its worldwide distributors. Visit us online to find a sales office near you.

FUNCTIONAL BLOCK DIAGRAMS

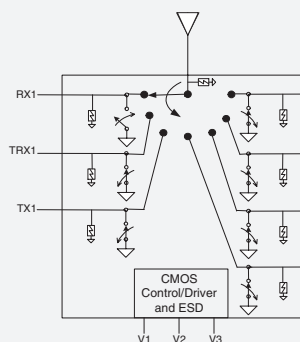
PE4259/PE4283



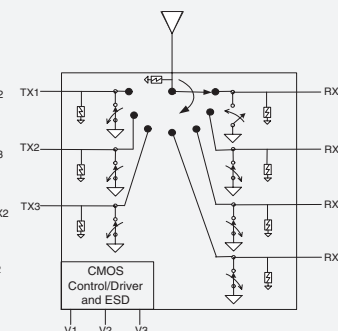
PE4263/PE42660*/PE4268



PE42671*



PE42672*



*Implements HaRP™ technology enhancements

RF SWITCHES - 50 Ω

Product Description	Operating Frequency (MHz)	IIP3 (dBm @ 2 GHz)	P1dB (dBm @ 2 GHz)	Insertion Loss (dB @ 1 GHz)	Isolation (dB @ 1 GHz)	Typical Idd (μA @ 3 V)	Vdd Range (V)	Package
PE4210 - Reflective SPDT	DC-3000	34	15	0.30	36	0.25	2.7-3.3	8L MSOP
PE4220 - Reflective SPDT	DC-2500	44	23	0.25	37	30	2.7-3.3	8L MSOP
PE4230 - Reflective SPDT	DC-3000	55	32	0.35	39	29	2.7-3.3	8L MSOP
PE4235 - Reflective SPDT	DC-4000	36	15	0.40	40	0.25	2.7-3.3	6L 3x3 DFN
PE4237 - Reflective SPDT	DC-4000	55	32	0.35	43	29	2.7-3.3	6L 3x3 DFN, DIE
PE4239 - Reflective SPDT	DC-3000	45	27	0.70	32	0.25	2.7-3.3	6L SC70, DIE
PE4241 - Reflective SPDT	DC-3000	45	27	0.70	30	0.25	2.7-3.3	6L SOT23
PE4242 - Reflective SPDT	DC-3000	45	27	0.70	32	0.25	2.7-3.3	6L SC70
PE4243 - Reflective SPDT	DC-3000	45	27	0.70	30	0.25	2.7-3.3	6L SOT23
PE4244 - Reflective SPDT	DC-3000	45	26	0.60	39	0.25	2.7-3.3	8L MSOP
PE4245 - Reflective SPDT	DC-4000	45	27	0.60	42	0.25	2.7-3.3	6L 3x3 DFN
PE4246 - Absorptive SPST	DC-5000	53	33	0.80	55	33	2.7-3.3	6L 3x3 DFN
PE4257 - Absorptive SPDT	DC-3000	55	31 ²	0.75	64	8	2.7-3.3	20L 4x4 QFN
PE4259 ¹ - Reflective SPDT	DC-3000	55	33 ²	0.35	30	9	2.3-3.3	6L SC70
NEW PE4283 - Reflective SPDT	DC-4000	57	32	0.65	33.5	8	2.0-3.3	6L SC70

CELLULAR HANDSET SWITCHES - 50 Ω

Product Description	Operating Frequency (MHz)	2nd Harmonic		3rd Harmonic		Insertion Loss (dB @ 1 GHz)	Isolation (dB @ 1 GHz)	Typical Idd (μA @ 2.6 V)	Vdd 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					
PE4261 SP4T - 2Tx/2Rx	100-3000	-82	-89	-74	-68	0.55	39	13	2.4-2.8	Flip Chip
PE4263 SP6T - 2Tx/4Rx	100-3000	-85	-81	-72	-66	0.55	48	13	2.4-2.8	DIE
NEW PE42660 SP6T - 2Tx/4Rx	100-3000	-88	-85	-85	-84	0.55	48	13 ³	2.65-2.85	DIE
NEW PE42671 SP7T - 4Tx/3Rx	100-3000	-88	-84	-80	-76	0.65	47	13 ³	2.65-2.85	DIE
NEW PE42672 SP7T - 3Tx/4Rx	100-3000	-85	-84	-78	-77	0.55	44	13 ³	2.65-2.85	DIE
PE4268 SP6T - 2Tx/4Rx	100-3000	-84	-80	-70	-66	0.60	50	13	2.4-2.8	20L 4x4 QFN

Note 1: Power Handling varies over frequency. See datasheet.
Note 2: Measured at 1 GHz

Note 3: Typical Idd Measured @ 2.75 V
Note: To view S-parameter for 50 Ω switches, visit the product section of our website at: www.psemi.com

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 Corporation designs, manufactures, and markets high-performance RF ICs ideally suited for mobile wireless and wireless infrastructure; broadband communications; space; defense and avionics applications. Manufactured on the Company's proprietary UltraCMOS™ mixed-signal process technology, Peregrine products offer unprecedented levels of monolithic integration, and are uniquely poised to meet the needs of a global RF design community in high-growth applications such as WCDMA and GSM digital cellular, broadband, DTV, DVR and rad-hard space and defense programs. The Company, headquartered in San Diego, California, maintains global sales support operations and a worldwide technical distribution network.



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DS#73/0013-02

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微波光电部专业代理经销高频、微波、光纤、光电元器件、组件、部件、模块、整机；电磁兼容元器件、材料、设备；微波 CAD、EDA 软件、开发测试仿真工具；微波、光纤仪器仪表。欢迎国外高科技微波、光纤厂商将优秀产品介绍到中国、共同开拓市场。长期大量现货专业批发高频、微波、卫星、光纤、电视、CATV 器件：晶振、VCO、连接器、PIN 开关、变容二极管、开关二极管、低噪晶体管、功率电阻及电容、放大器、功率管、MMIC、混频器、耦合器、功分器、振荡器、合成器、衰减器、滤波器、隔离器、环行器、移相器、调制解调器；光电子器件和组件：红外发射管、红外接收管、光电开关、光敏管、发光二极管和发光二极管组件、半导体激光二极管和激光器组件、光电探测器和光接收组件、光发射接收模块、光纤激光器和光放大器、光调制器、光开关、DWDM 用光发射和接收器件、用户接入系统光收发器件与模块、光纤连接器、光纤跳线/尾纤、光衰减器、光纤适配器、光隔离器、光耦合器、光环行器、光复用器/转换器；无线收发芯片和模组、蓝牙芯片和模组。

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