



Timing Solutions from Pericom

Pericom offers total timing solutions — Silicon ICs + Quartz Crystal Timing solutions — in a robust clock IC portfolio as well as in the SaRonix-eCera™ frequency control crystals and crystal oscillators.

The Clock IC family consists of high-performance differential and single ended 1.2V, 1.5V, 1.8V, 2.5V, 3.3V, and 5V clock distribution circuits, clock converters, PLL-based zero-delay clock drivers, programmable skew clock buffers, and clock generators. Pericom clocks are designed for the demands of today’s notebook and desktop PC’s, registered DIMM’s, network NIC & hubs, routers & switches, relays, telecom, storage (RAID, SAN, NAS), set-top box, digital television, and imaging such as scanners, printers, and digital cameras.

SaRonix-eCera™ Frequency Control Products (FCP) combines Pericom silicon with SaRonix-eCera quartz to serve a full range of timing requirements and package sizes. These solutions include leading-edge LVCMOS, LVPECL, LVDS, and HCSL oscillators, output frequencies extend to 670MHz and voltage options ranging from 3.3V to 1.8V.

In this section:

Clock IC Products

- Clock Buffers
- Zero-delay & Programmable Skew
- Clock Synthesizers
- Spread Spectrum Clock Generator
- VCXO

SaRonix-eCera Frequency Control Products

- Crystals
- Crystal Oscillators
- ASSP XO Crystal Oscillators
- VCXO



TIMING

Clock IC Solutions

Part of Pericom's Total Timing Solutions™, the SiliconClock IC family consists of high-performance differential and single ended 1.2V, 1.5V, 1.8V, 2.5V, 3.3V, and 5V clock distribution circuits, clock converters, PLL-based zero-delay clock drivers, programmable skew clock buffers, and clock generators. Clock ICs can be found in notebook and desktop PC's, registered DIMM's, network NIC & hubs, routers & switches, relays, telecom, storage (RAID, SAN, NAS), set-top box, digital television, and imaging such as scanners, printers, and digital cameras.

High-Speed, Low-Power, Low-Skew Clock Buffers

→ Offering families for 1.2V, 1.5V, 1.8V, 2.5V, 3.3V, and 5V operations

PLL-based Clock Distribution Products

→ Featuring Zero-Delay and programmable skew. Available in 2.5V, 3.3V

Clock Synthesizers

→ Used in PC's, servers, networking, set-top box, digital television

PLL based Memory Module Zero-Delay Clock Buffers

→ Networking, telecom, datacom and memory module applications

→ DDR: PC100/PC133

‣ DDR1: DDR200, DDR266, DDR333, DDR400

‣ DDR2: DDR2-400 (PC2-3200), DDR2-533(PC2-4300), DDR2-677, DDR2-800

Spread Spectrum Clock Generator

→ Electromagnetic interference (EMI) reduction

→ Selectable center and down spread ratios

VCXO Products

→ Wide PLL range, low jitter, low phase noise

→ Multi-loop PLL for DTV applications. Low noise PLL clock multiplication for STB applications

Clock IC Products Overview

Timing Family	Applications		Protocol Specific	Voltage
	Computing	Networking/Consumer		
Clock Generator (PLL)	Server, Mobile, Desktop	Switch router	PCI Express	2.5V, 3.3V
Spread Spectrum Clock Generator	Peripherals, Printers	DTV, wireless router	PCI Express, SATA	2.5, 3.3V
VCXO IC (with PLL and without PLL)	Wireless	Set-top box, wireless, ultra mobility, broadband access	Ethernet, VDSL	2.5V, 3.3V, 2.5V/3.3V
Zero-Delay Buffer (PLL)	Printers, Servers, Add-in Cards	Switch router	PCI Express	
Fanout Buffer(Non-PLL)		Switch router		1.2V, 1.5V, 1.8V, 2.5V, 3.3V
Real Time Clock	Smart phone, GPS	Ultra Mobility		1.8V - 5.5V
Registered DIMM PLL & Registered Buffer	Server, Storage			1.8V - 5.5V

Clock IC Solutions

Real-Time Clock

Part Number	Description	Oscillator			Time Display(hour)	Programmable			Alarm Interupt	NV RAM	Clock Calibration	Battery Backup	Control		Charger	Package
		Source Crystal(HZ)	Enable/Disable	Fail Detect		Square wave Output(HZ)	high/low output	External Clock est Mode								
PT7C4300	Module (I2C Bus)	32.768K	√		24 hour	512	√			√	√					DIP8 SOIC8
PT7C4302	Module (3-wire)	32.768K	√		12/24 hour	–			31x8		√		√			DIP8 SOIC8
PT7C4307	Module (I2C Bus)	32.768K	√		12/24 hour	1, 4.096k, 8.192k, 32.768k	√		56x8		√					DIP8 SOIC8
PT7C4337	Module (I2C Bus)	32.768K	√	√	12/24 hour	1, 4.096k, 8.192k, 32.768k		√								DIP8 SOIC8 MSOP8
PT7C4363	Module (I2C Bus)	32.768K		√	24 hour	1, 32, 1.024k, 32.768k		√					√			DIP8 SOIC8
PT7C4372A	Module (I2C Bus)	32.768K 32.000K		√	12/24 hour	1, 2, 32.768k, 32.000k		√		√						TSSOP8 SOIC8 MSOP8
PT7C4372B	Module (I2C Bus)	32.768K 32.000K		√	12/24 hour	1, 2, 32.768k, 32.000k		√		√						TSSOP8 SOIC8 MSOP8
PI7C4311	Module (I2C Bus)	32.768K	√		24 hour	1~8192 (2° ~ 213), 32.768k	√	√	√				√			SOIC8 TSSOP8
PT7C43190	3-Wire	32.000K*			12/24 hour	1, 2, 4, 8, 16, 32.000K		√		√						TSSOP8 SOIC8 SNT-8
PT7C43390	Module (2-Wire)	32.000K*			12/24 hour	1, 2, 4, 8, 16, 32.000K		√		√						TSSOP8 SOIC8 SNT-8

Clock IC Solutions

Buffer/Driver

Part Number	Voltage	Skew	Speed	I/O	Temp	Outputs	Package
PI49FCT20802	2.5V	150ps	150MHz	CMOS	Ind	5	TSSOP (L16)
PI49FCT20803	2.5V	150ps	150MHz	CMOS	Ind	7	TSSOP (L16)
PI49FCT20807	2.5V	150ps	150MHz	CMOS	Ind	10	QSOP (Q20), SOIC (S20), SSOP (H20)
PI49FCT2805T	5V	500ps	66MHz	CMOS	Ind	5+5	QSOP (Q20), SSOP (H20)
PI49FCT32802	3.3V	200ps	133MHz	CMOS	Ind	5	QSOP (Q16), TSSOP (L16)
PI49FCT32803	3.3V	200ps	133MHz	CMOS	Ind	7	QSOP (Q16), TSSOP (L16)
PI49FCT32805	3.3V	270ps	133MHz	CMOS	Ind	5+5	QSOP (Q20), SSOP (H20)
PI49FCT32806	3.3V	270ps	133MHz	CMOS	Ind	5+5	QSOP (Q20)
PI49FCT32807	3.3V	200ps	133MHz	CMOS	Ind	10	QSOP (Q20), SSOP (H20)
PI49FCT3802	3.3V	250ps	156MHz	CMOS	Ind	5	QSOP (Q16), TSSOP (L16)
PI49FCT3803	3.3V	250ps	156MHz	CMOS	Ind	7	TSSOP (L16)
PI49FCT3805	3.3V	700ps	50MHz	CMOS	Ind	5+5	QSOP (Q20)
PI49FCT3805A	3.3V	700ps	66MHz	CMOS	Ind	5+5	QSOP (Q20),SSOP (H20)
PI49FCT3805B	3.3V	500ps	80MHz	CMOS	Ind	5+5	QSOP (Q20), SSOP (H20)
PI49FCT3805C	3.3V	500ps	100MHz	CMOS	Ind	5+5	QSOP (Q20), SSOP (H20)
PI49FCT3805D	3.3V	270ps	133MHz	CMOS	Ind	5+5	QSOP (Q20), SSOP (H20)
PI49FCT3806B	3.3V	500ps	80MHz	CMOS	Ind	5+5	QSOP (Q20)
PI49FCT3806C	3.3V	500ps	100MHz	CMOS	Ind	5+5	SSOP (H20)
PI49FCT3807	3.3V	500ps	50MHz	CMOS	Ind	10	QSOP (Q20), SSOP (H20)
PI49FCT3807A	3.3V	500ps	66MHz	CMOS	Ind	10	QSOP (Q20), SOIC (S20), SSOP (H20)
PI49FCT3807B	3.3V	350ps	80MHz	CMOS	Ind	10	QSOP (Q20)
PI49FCT3807C	3.3V	350ps	100MHz	CMOS	Ind	10	QSOP (Q20), SOIC (S20), SSOP (H20)
PI49FCT3807D	3.3V	250ps	156MHz	CMOS	Ind	10	QSOP (Q20), SOIC (S20), SSOP (H20)
PI49FCT804AT	5V	700ps	66MHz	CMOS	Com	4+4	SOIC (S16), QSOP (Q16)
PI49FCT804T	5V	800ps	50MHz	CMOS	Com	4+4	SOIC (S16)
PI49FCT805AT	5V	500ps	66MHz	CMOS	Ind	5+5	SSOP (H20)
PI49FCT805CT ⁽¹⁾	5V	400ps	100MHz	CMOS	Ind	5+5	QSOP (Q20), SSOP (H20)
PI49FCT807CT ⁽¹⁾	5V	250ps	100MHz	CMOS	Ind	10	QSOP (Q20), SOIC (S20)
PI49FCT807T ⁽¹⁾	5V	500ps	50MHz	CMOS	Ind	10	QSOP (Q20)
PI6C10804	1.8V/2.5V	70ps	250MHz	LVTTTL/LVCMOS	Ind	4	SOIC (W8)
PI6C10806	1.8V/2.5V	80ps	250MHz	Xtal/LVCMOS	Ind	6	TSSOP (L16)
PI6C10806B	1.8V/2.5V/3.3V	80ps	100MHz	Xtal/LVCMOS	Ind	6	TSSOP (L16)
PI6C10807	1.8V/2.5V	60ps	250MHz	LVTTTL/LVCMOS	Ind	10	TSSOP (L20), SSOP (H20)
PI6C180	3.3V	250ps	100MHz	TTL	Com	18	SSOP (V48)
PI6C10810	1.2V/1.5V/1.8V/2.5V	60ps	250MHz	LVTTTL/LVCMOS	Ind	10	TSSOP (L20)

Clock IC Solutions

Buffer/Driver (continued)

Part Number	Voltage	Skew	Speed	I/O	Temp	Outputs	Package
PI6C180/180B	3.3V	250ps	140MHz	TTL	Com	18	SSOP (V48)
PI6C182/182A/182B	3.3V	200ps	110MHz	TTL	Com	10	SSOP (H28)
PI6C184	3.3V	250ps	100MHz	TTL	Com	13	SSOP (H28)
PI6C185-00	3.3V	250ps	125MHz	TTL	Ind	7	QSOP (Q20)
PI6C185-01	3.3V	250ps	140MHz	TTL	Com	5	QSOP (Q16)
PI6C185-02B	3.3V	250ps	140MHz	TTL	Com	7	QSOP (Q16), TSSOP (L16)
PI6C18551	3.3V/5V	250ps	160MHz	TTL/CMOS	Ind	4	SOIC (W8)
PI6C41204	3.3V	30ps	266MHz	TTL/CMOS/ PECL	Com	4	TSSOP (L20)
PI6C41204A	3.3V	30ps	266MHz	TTL/CMOS/ PECL	Com	4	TSSOP (L20)
PI6C485311	3.3V	100ps	800MHz	Differential	Ind	2	SOIC (W8), MSOP (U8)
PI6C4853111	2.5V/3.3V	50ps	1GHz	LVPECL	Ind	10	TQFP (FA32)
PI6C48533-01	3.3V	100ps	800MHz	Differential	Ind	4	TSSOP (L20)
PI6C48535-01	3.3V	30ps	500MHz	TTL/CMOS/ PECL	Ind	4	TSSOP (L20)
PI6C48535-11	3.3V	30ps	500MHz	Xtal/CMOS/ PECL	Ind	4	TSSOP (L20)
PI6C485352	2.5V/3.3V	100ps	500MHz	LVPECL	Ind	12	TQFP (FA48)
PI6C48543	3.3V	40ps	800MHz	Differential to LVDS	Ind	4	TSSOP (L20)
PI6C48545	3.3V	40ps	650MHz	LVTTTL/LVCMOS to LVDS	Ind	4	TSSOP (L20)
PI6C48545-11	3.3V	40ps	650MHz	Xtal/LVTTTL/LVC- MOS to LVPECL	Ind	4	TSSOP (L20)
PI6C487016	1.8V	50ps	250MHz	LVTTTL/LVCMOS/ Df. to LVCMOS	Ind	4 x 4	LQFP (FB48)
PI6CL10804	1.2V/1.5V	100ps	200MHz	LVCMOS	Ind	4	SOIC (W8)
PI6CL10806	1.2V/1.5V	60ps	200MHz	LVCMOS/Xtal	Ind	6	TSSOP (L16)
PI6CL10807	1.2V/1.5V	120ps	200MHz	LVCMOS	Ind	10	TSSOP (L20)
PI6CV2304	3.3V	150ps	160MHz	TTL/CMOS	Com	4	SOIC (W8), TSSOP (L8)
PI6CV304	3.3V	150ps	160MHz	TTL/CMOS	Ind	4	SOIC (W8), TSSOP (L8)

Clock IC Solutions

Generator

Part Number	Voltage	Jitter	Skew	Speed	I/O	O/p	Package
PI6C103	2.5V/3.3V	250ps	175ps	100MHz	CMOS	12	SSOP (H28)
PI6C4022	1.8V	40ps	500ps	32.768KHz/26MHz	LVC MOS	2	QFN (ZL20)
PI6C4511	3.3V/5V	100ps	n/a	200MHz	Xtal/LVTTL/LVCMOS to LVC MOS	1+1	SOIC (W8)
PI6C49003*	3.3	n/a	n/a	100MHz	HCSL+CMOS	9	TSSOP (A48)
PI6C49004*	3.3	n/a	n/a	100MHz	HCSL+CMOS	16	TSSOP (A56)
PI6C557-03*	3.3V	85ps	100ps	125MHz	CMOS/Differential	2	TSSOP (L16)
PI6C557-05*	3.3V	60ps	50ps	200MHz	HCSL	4	TSSOP (L20)
PI6C557-10*	3.3V	86ps	n/a	100MHz	CMOS/Differential	2	TSSOP (L16)

* Indicates Industrial Temp. All others in this table are Commercial Temp

Programmable Skew

Part Number	Voltage	Jitter	Skew	Speed	I/O	Temp	O/p	Package
PI6C39911-2	3.3V	200ps	250ps	110MHz	TTL	Com	2+2+2+2	PLCC (J32)
PI6C39911-5	3.3V	200ps	500ps	110MHz	TTL	Com	2+2+2+2	PLCC (J32)
PI6C3991-5	3.3V	200ps	500ps	80MHz	TTL	Com	2+2+2+2	PLCC (J32)
PI6C3991-5I	3.3V	200ps	500ps	80MHz	TTL	Ind	2+2+2+2	PLCC (J32)
PI6C3Q993	3.3V	200ps	750ps	85MHz	CMOS	Com	2+2+2+2	QSOP (Q28)

Spread Spectrum Clock Generator (SSCG)

Part Number	Voltage	Jitter	Skew	Speed	I/O	Temp	O/p	Package
PI6C3622-1	3.3V/2.5V	300ps	n/a	20~40MHz	CMOS	Com	1	TSSOP (L8)
PI6C3342								

VCXO IC

Part Number	Voltage	Jitter	Skew	Speed	I/O	Temp	Outputs	Package
PI6CX100-27	3.3V	50ps	n/a	27MHz	LVTTTL/LVCMOS	Ind	1	SOIC (W8)
PI6CX300	3.3V	300ps	n/a	300MHz	LVTTTL/LVCMOS	Com	6	TSOP (L16)
PI6CX201A	3.3V	350fs	n/a	n/a	LVTTTL/LVCMOS	Ind	1	TSSOP (L20)

Clock IC Solutions

Zero-delay Buffer

Part Number	Voltage	Jitter	Skew	Speed	I/O	Temp	Outputs	Package
PI6C20400	3.3V	50ps	50ps	100MHz	HCSL	Com	4	SSOP (H28), TSSOP (L28)
PI6C20400A	3.3V	50ps	50ps	100MHz	HCSL	Ind	4	SSOP (H28), TSSOP (L28)
PI6C20400S	3.3V	50ps	50ps	100MHz	HCSL	Com	4	SSOP (H28)
PI6C20800	3.3V	50ps	50ps	100MHz	HCSL	Com	8	TSSOP (A48), SSOP (V48)
PI6C20800S/SI	3.3V	50ps	50ps	95-105MHz	HCSL	Com/Ind	8	TSSOP (A48), SSOP (V48)
PI6C21200	3.3V	50ps	50ps	400MHz	HCSL	Com	12	TSSOP (A56)
PI6C22405	2.5V/3.3V	100ps	100ps	200MHz	TTL	Ind	5	SOIC (W8), TSSOP (L8)
PI6C22405-1H	2.5V/3.3V	100ps	100ps	220MHz	TTL	Ind	5	SOIC (W8), TSSOP (L8)
PI6C22409	2.5V/3.3V	100ps	100ps	200MHz	TTL	Ind	5+4	SOIC (W16), TSSOP(L16)
PI6C22409-1H	2.5V/3.3V	100ps	100ps	220MHz	TTL	Ind	5+4	SOIC (W16), TSSOP (L16)
PI6C2402	3.3V	100ps	n/a	134MHz	TTL	Com	1	SOIC (W8)
PI6C2405A-1	3.3V	200ps	250ps	133MHz	TTL	Com/Ind	5	TSSOP (L8)
PI6C2405A-1H	3.3V	200ps	250ps	133MHz	TTL	Com/Ind	5	SOIC (W8), TSSOP (L8)
PI6C2408-1	3.3V	200ps	200ps	140MHz	TTL	Com/Ind	4+4	TSSOP (L16)
PI6C2408-1H	3.3V	200ps	200ps	140MHz	TTL	Com/Ind	4+4	TSSOP (L16)
PI6C2408-2	3.3V	200ps	200ps	140MHz	TTL	Com	4+4	SOIC (W16)
PI6C2408-3	3.3V	200ps	200ps	140MHz	TTL	Com/Ind	4+4	SOIC (W16)
PI6C2408-4I	3.3V	200ps	200ps	140MHz	TTL	Ind	4+4	SOIC (W16)
PI6C2409-1	3.3V	200ps	250ps	133MHz	TTL	Com/Ind	5+4	SOIC (W16)
PI6C2409-1H	3.3V	200ps	250ps	133MHz	TTL	Com	5+4	SOIC (W16), TSSOP (L16)
PI6C2410	3.3V	200ps	200ps	133MHz	TTL	Ind	4	TSSOP (L24)
PI6C2504A	3.3V	75ps	150ps	134MHz	CMOS	Com	4	QSOP (Q16)
PI6C2509-133	3.3V	75ps	150ps	150MHz	CMOS	Ind	9	TSSOP (L24)
PI6C2510-133E	3.3V	75ps	150ps	150MHz	CMOS	Com	10	TSSOP (L24)
PI6CU877	1.8V	40ps	40ps	270MHz	SSTL18	Com	10	VFBGA (NF52)
PI6CUA877	1.8V	40ps	40ps	410MHz	SSTL18	Com	10+1	VFBGA (NF52)
PI6CUA878	1.8V	40ps	40ps	410MHz	SSTL18	Com	10+1	VFBGA (NF52)
PI6CV847	2.5V	60ps	60ps	200MHz	SSTL_2	Com	5	TSSOP (L24)
PI6CV855	2.5V	75ps	100ps	170MHz	SSTL2	Com	5	TSSOP (L28)
PI6CV855-02	2.5V	75ps	100ps	200MHz	SSTL2	Com	5	TSSOP (L28)
PI6CV857	2.5V	75ps	100ps	170MHz	SSTL2	Com	10	TSSOP (A48)
PI6CV857L	2.5V	75ps	100ps	170MHz	SSTL2	Com	10	TSSOP (A48)
PI6CVF857	2.5V	50ps	75ps	220MHz	SSTL2	Com	10	TSSOP (A48)

Eliminate Trade-offs
ASAP with

ASSP XO™

Get what you need, when you need it, at a lower cost than conventional oscillators.

ASSP Crystal Oscillators (XO)

ASSP stands for Application Specific Standards Product. ASSP XO means you get what you need, when you need it at a lower cost than conventional oscillators. Design-in a Pericom ASSP XO and you can break free from critical trade-offs between performance, delivery times and cost when selecting and qualifying oscillators in your designs. Now you can have it all: physical performance, proven technology specific to your application, economical pricing and fast delivery.

Get it done as soon as possible without sacrificing performance or price; get it done with Pericom's ASSP XO solutions.

- ▶ Application specific reference clock for popular serial connectivity standards
- ▶ Low jitter and power to meet your application needs
- ▶ Application expertise – proven solutions for your application

Proven Technology To Go

Innovative designers around the world have specified Pericom products for designing their high-performance servers, digital media, storage, ultra mobility, security systems and more. ASSP XO lets you leverage Pericom's technical application experience in delivering application-tailored solutions to our broad customer base.

- ▶ We've done the application work for you. Extensive evaluation reports are available to eliminate any doubt as to whether the part is right for your needs.
- ▶ These innovative XOs provide low jitter and low power performance specifically tailored to, and proven in, your application.
- ▶ You save time and money with pre-characterized solutions that are ready to go.

WHY ASSP XO?

- ▶ **Fast shipment of samples - stock always available**
- ▶ **Reduced lead times for production quantities**
- ▶ **Low jitter/low phase noise**
- ▶ **Low power**
- ▶ **Low cost**
- ▶ **Pre-characterized eval reports available**
- ▶ **Pb-free RoHS compliant**
- ▶ **Proven technology specific to application needs ready for:**



Networking



Storage



Ultra Mobility



Digital Media



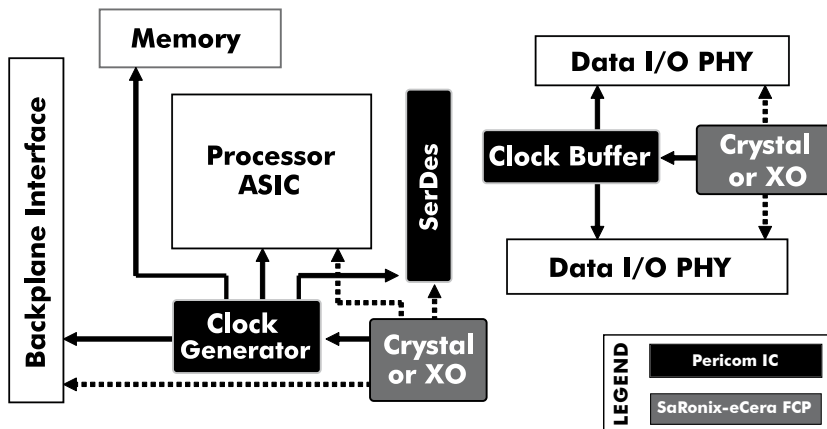
Security

Frequency Control Products

SaRonix-eCera™ Crystals and Crystal Oscillators

SaRonix-eCera™ Frequency Control Products (FCP) are part of Pericom Total Timing SolutionsSM. Pericom silicon combines with SaRonix-eCera quartz to serve a full range of timing requirements.

- Leading-edge LVCMOS, LVPECL, LVDS, and HCSL Oscillators
- Output frequencies extend to 670MHz
- Voltage options ranging from 1.2V to 3.3V
- Fundamental, 3rd Overtone, XP, Spread Spectrum, and PLL types of devices are all supported
- Unprecedented lowest phase noise, lowest jitter and highest power supply noise rejection capability
- Virtually any timing requirement can be met by combining Pericom Timing IC products
- Oscillators available in packages from 2.0 x 1.6mm to 7.0 x 5.0mm
- Crystals available in packages from 1.6 x 1.2mm SMD to HC49 Metal Can



Please see the following pages for a short list of available SaRonix-eCera frequency control products. Package and ordering information is available on page 73 and 88 of this catalog, or consult the individual datasheets available from www.pericom.com.

SaRonix-eCera FCP Application Selection Table

Product Series		XTAL										kHz XTAL	kHz XO	SSXO		
		GA	GB, GG	GC, GF	F8	FP	FX, F6	FY, F9	FF	FL	FH	FW	G1, G2, G3	KN, KD, KK	MN, MD, MK	
Wireless / Access	WiFi, 802.11a/b/g/n						X	X	X	X	X	X	X			
	Bluetooth						X	X	X	X	X	X				
	RFID						X	X	X	X	X	X				
	UWB						X	X	X	X	X	X	X	X		
	Zigbee						X	X	X	X	X	X				
	DSL, ADSL, XDSL	X	X	X				X			X					
	VoIP, VoDSL		X	X				X			X	X				
	EPON, GPON		X	X				X								
	Cable Modem	X	X	X												
	T1/E1 (DS-1)	X	X	X				X								
T3/E3 (DS-3)	X															
Storage	1Gb Fiber Channel		X	X				X					X			
	2/4 Gb Fiber Channel		X	X				X					X			
	SATA, SAS, iSCSI		X	X				X					X			
Ethernet / LAN	10/100 Ethernet	X	X	X				X					X			
	1G Ethernet		X	X				X					X			
	10G Ethernet															
	XAUI Backplane															
SONET/SDH	OC -1 (STM-0)	X	X	X				X					X			
	OC -3 (STM-1)	X	X	X				X					X			
	OC -12 (STM-4)															
	OC -48 (STM-16)															
	OC -48 (STM-192)															
Portable Devices	Cellular Handset							X	X	X	X	X	X	X		
	GPS, Navigation							X	X	X	X	X	X	X	X	
	PMP Player, MP3, MP4							X	X	X	X	X	X	X	X	
	PDA							X	X	X	X	X	X	X	X	
	Notebook Computer					X	X	X	X				X			X
Multimedia	Set Top Box	X	X	X				X								X
	Video Processing	X	X	X				X					X	X		
	Audio Player	X	X	X									X	X		
	HDTV, LCD TV		X	X				X								
	DLP Projector		X	X				X								X
Digital Still Camera										X	X	X	X	X	X	
Computing	Digital Signal Processor	X	X	X				X					X			X
	Micro-controller	X	X	X				X					X			
	Network processors															
	Intel Platform	X	X	X				X					X			
	AMD Platform	X	X	X				X					X			

SaRonix-eCera FCP Application Selection Table

Product Series		XO											VCXO					
		SX	FN	FD	FK	FJ	LN	PX	PB	PN	SN	SH	SD	YN, FR	PR, LR	YD	YK	YJ
Wireless / Access	WiFi, 802.11a/b/g/n		X	X	X	X							X					
	Bluetooth				X	X												
	RFID																	
	UWB				X	X						X						
	Zigbee				X	X												
	DSL, ADSL, XDSL	X	X	X	X							X	X	X				
	VoIP, VoDSL		X	X	X				X		X	X	X					
	EPON, GPON	X	X	X	X		X	X		X			X	X				
	Cable Modem																	
	T1/E1 (DS-1)		X	X	X									X				
T3/E3 (DS-3)		X	X	X									X					
Storage	1Gb Fiber Channel	X	X	X	X													
	2/4 Gb Fiber Channel	X	X	X	X			X	X		X	X	X					
	SATA, SAS, iSCSI	X	X	X	X			X	X		X	X	X					
Ethernet / LAN	10/100 Ethernet		X	X	X													
	1G Ethernet	X	X	X	X				X	X	X		X					
	10G Ethernet	X	X	X	X				X	X	X	X	X		X			
	XAUI Backplane	X			X		X	X	X	X	X		X					
SONET/SDH	OC -1 (STM-0)		X	X	X				X	X	X		X	X	X			
	OC -3 (STM-1)		X	X	X			X	X	X	X		X	X	X			
	OC -12 (STM-4)			X	X			X	X	X	X		X	X	X			
	OC -48 (STM-16)	X							X	X	X		X	X				
	OC -48 (STM-192)								X	X	X		X					
Portable Devices	Cellular Handset				X	X												
	GPS, Navigation				X	X												
	PMP Player, MP3, MP4				X	X										X	X	X
	PDA				X	X										X	X	X
	Notebook Computer		X	X	X	X												
Multimedia	Set Top Box	X	X									X		X		X	X	
	Video Processing	X	X	X	X											X	X	X
	Audio Player		X	X	X											X	X	X
	HDTV, LCD TV	X	X									X		X		X	X	
	DLP Projector	X	X															
	Digital Still Camera				X													
Computing	Digital Signal Processor		X	X	X							X						
	Micro-controller		X	X	X													
	Network processors	X	X	X	X		X	X	X	X	X	X						
	Intel Platform		X	X	X							X						
	AMD Platform		X	X	X							X						

SaRonix-eCera FCP

CMOS Crystal Oscillators

SMD Ceramic Package	Product Series	**SaRonix Reference P/N	Package Size (mm)	Output Logic	Pads	Description	Frequency Range (MHz)	Jitter
	FN 1.2V	N/A	7.0 x 5.0	CMOS	4	Low Jitter	1~60	<1 ps RMS
	FN 1.8V	S1612	7.0 x 5.0	CMOS	4	Low Jitter	1~166	<1 ps RMS
	FN 2.5V	S1614	7.0 x 5.0	CMOS	4	Low Jitter	1~166	<1 ps RMS
	FN 3.3V	S1613	7.0 x 5.0	CMOS	4	Low Jitter	1~166	<1 ps RMS
	SX 2.5V	S1614XP	7.0 x 5.0	CMOS	4	Low Jitter, High Freq.	100~160	<1 ps RMS
	SX 3.3V	S1613XP	7.0 x 5.0	CMOS	4	Low Jitter, High Freq	100~160	<1 ps RMS
	FD 1.2V	N/A	5.0 x 3.2	CMOS	4	Low Jitter	1~60	<1 ps RMS
	FD 1.8V	S1632	5.0 x 3.2	CMOS	4	Low Jitter	1~133	<1 ps RMS
	FD 2.5V	S1634	5.0 x 3.2	CMOS	4	Low Jitter	1~133	<1 ps RMS
	FD 3.3V	S1633	5.0 x 3.2	CMOS	4	Low Jitter	1~133	<1 ps RMS
	FK 1.2V	N/A	3.2 x 2.5	CMOS	4	Low Jitter	1~60	<1 ps RMS
	FK 1.8V	S1642	3.2 x 2.5	CMOS	4	Low Jitter	1~106.25	<1 ps RMS
	FK 2.5V	S1644	3.2 x 2.5	CMOS	4	Low Jitter	1~106.25	<1 ps RMS
	FK 3.3V	S1643	3.2 x 2.5	CMOS	4	Low Jitter	1~106.25	<1 ps RMS
	UK 1.8V	N/A	2.5 x 2.0	CMOS	4	Clipped Sinewave	10~60	<2 ps RMS
	FJ 1.2V	N/A	2.5 x 2.0	CMOS	4	Low Jitter	1~60	<1 ps RMS
	FJ 1.8V	N/A	2.5 x 2.0	CMOS	4	Low Jitter	1~75	<1 ps RMS
	FJ 2.5V	N/A	2.5 x 2.0	CMOS	4	Low Jitter	1~75	<1 ps RMS
	FJ 3.3V	N/A	2.5 x 2.0	CMOS	4	Low Jitter	1~75	<1 ps RMS
	UJ 1.8V	N/A	2.5 x 2.0	CMOS	4	Clipped Sinewave	10~60	<2 ps RMS
	FM 1.2V	N/A	2.0 x 1.6	CMOS	4	Low Jitter	1~50	<1 ps RMS
	FM 1.8V	N/A	2.0 x 1.6	CMOS	4	Low Jitter	1~50	<1 ps RMS
	FM 2.5V	N/A	2.0 x 1.6	CMOS	4	Low Jitter	1~50	<1 ps RMS
	FM 3.3V	N/A	2.0 x 1.6	CMOS	4	Low Jitter	1~50	<1 ps RMS
	VM 1.2V	N/A	2.0 x 1.6	CMOS	4	Low Jitter+Low profile	1~50	<1 ps RMS
	VM 1.8V	N/A	2.0 x 1.6	CMOS	4	Low Jitter+Low profile	1~50	<1 ps RMS
	VM 2.5V	N/A	2.0 x 1.6	CMOS	4	Low Jitter+Low profile	1~50	<1 ps RMS
	VM 3.3V	N/A	2.0 x 1.6	CMOS	4	Low Jitter+Low profile	1~50	<1 ps RMS
	UM 1.8V	N/A	2.0 x 1.6	CMOS	4	Clipped Sinewave	10~60	<2 ps RMS

SaRonix-eCera FCP

Differential Crystal Oscillators

SMD Ceramic Package	Product Series	**SaRonix Reference P/N	Package Size (mm)	Output Logic	Pads	Description	Frequency Range (MHz)	Jitter
	PX 2.5V	SDS382	7.0 x 5.0	LVDS	6	Low Jitter	38.88~162	<1 ps RMS
	PX 3.3V	SDS383	7.0 x 5.0	LVDS	6	Low Jitter	38.88~162	<1 ps RMS
	LN 3.3V	SDS3811	7.0 x 5.0	LVDS	6	Phase Jitter > 1ps	1~800	<3 ps RMS
	SH 3.3V	N/A	7.0 x 5.0	HCSL	6	PCIe 2.0 HCSL Low Jitter	100	<2.5 ps RMS
	SN 2.5V	SEL382	7.0 x 5.0	PECL	6	Low Jitter	50~220	<1 ps RMS
	SN 3.3V	SEL383	7.0 x 5.0	PECL	6	Low Jitter	50~220	<1 ps RMS
	SN 3.3V RS	SRS383	7.0 x 5.0	PECL	6	Low Jitter RateSelect™	50~220	<1 ps RMS
	PN 3.3V	SEL381	7.0 x 5.0	PECL	6	Phase Jitter > 1ps	1~800	<3 ps RMS
	PB 2.5V	N/A	7.0 x 5.0	PECL	6	Low Jitter	38.88~162	<1 ps RMS
	PB 3.3V	N/A	7.0 x 5.0	PECL	6	Low Jitter	38.88~162	<1 ps RMS
	PF 3.3V	N/A	7.0 x 5.0	PECL	6	Phase Jitter <1ps	1~320	<1ps RMS
	JX702	N/A	7.0 x 5.0	PECL	6	Programmable	10~212	—
	SD 2.5V	N/A	5.0 x 3.2	PECL	6	Low Jitter	50~220	<1 ps RMS
	SD 3.3V	SEL503	5.0 x 3.2	PECL	6	Low Jitter	50~220	<1 ps RMS
	SM 3.3V	N/A	5.0 x 3.2	HCSL	6	PCIe 2.0 HCSL Low Jitter	100	<2.5 ps RMS
	LD 2.5V	N/A	5.0 x 3.2	LVDS	6	Low Jitter	50~162	<1 ps RMS
	LD 3.3V	N/A	5.0 x 3.2	LVDS	6	Low Jitter	50~162	<1 ps RMS
	PD 2.5V	N/A	5.0 x 3.2	PECL	6	Low Jitter	50~162	<1 ps RMS
	PD 3.3V	N/A	5.0 x 3.2	PECL	6	Low Jitter	50~162	<1 ps RMS
	LK 2.5V	N/A	3.2 x 2.5	LVDS	6	Low Jitter	50~162	<1 ps RMS
	LK 3.3V	N/A	3.2 x 2.5	LVDS	6	Low Jitter	50~162	<1 ps RMS
	PK 2.5V	N/A	3.2 x 2.5	PECL	6	Low Jitter	50~162	<1 ps RMS
	PK 3.3V	N/A	3.2 x 2.5	PECL	6	Low Jitter	50~162	<1 ps RMS

Spread Spectrum Crystal Oscillators (Down-spread & center-spread options available)

SMD Ceramic Package	Product Series	Package Size (mm)	Output Logic	Pads	Description	Frequency Range (MHz)	Jitter
	MN 2.5V	7.0 x 5.0	CMOS	4	Low Power Spread Spectrum	16~67	<200 ps cy-cy
	MN 3.3V	7.0 x 5.0	CMOS	4	Low Power Spread Spectrum	16~67	<200 ps cy-cy
	MD 2.5V	5.0 x 3.2	CMOS	4	Low Power Spread Spectrum	16~67	<200 ps cy-cy
	MD 3.3V	5.0 x 3.2	CMOS	4	Low Power Spread Spectrum	16~67	<200 ps cy-cy
	MK 3.3V	3.2 x 2.5	CMOS	4	Low Power Spread Spectrum	16~67	<200 ps cy-cy
	MK 3.3V	3.2 x 2.5	CMOS	4	Low Power Spread Spectrum	16~67	<200 ps cy-cy

SaRonix-eCera FCP

VCXO (Voltage Control Crystal Oscillator)

SMD Ceramic Package	Product Series	**SaRonix Reference P/N	Package Size (mm)	Output Logic	Pads	Description	Frequency Range (MHz)
	FR 3.3V	ST1317	7.0 x 5.0	CMOS	6	Fund Base, Phase Jitter < 1ps	1~32
	YN 3.3V	ST1317	7.0 x 5.0	CMOS	6	PLL Base, Phase Jitter > 1ps	32~125
	LR 3.3V	N/A	7.0 x 5.0	LVDS	6	High Frequency	19.44~800
	PR 3.3V	S1577	7.0 x 5.0	PECL	6	High Frequency	19.44~800
	YD 3.3V	N/A	5.0 x 3.2	CMOS	4	Ultra Low Jitter	1~32
	YK 3.3V	N/A	3.2 x 2.5	CMOS	4	Ultra Low Jitter	1~32
	YJ 3.3V	N/A	2.5 x 2.0	CMOS	4	PLL Base, Phase Jitter > 1ps	1~32

TCXO (Voltage Control Crystal Oscillator)

















SMD Ceramic Package	Product Series	Package Size (mm)	Output Logic	Pads	Description	Frequency Range (MHz)	Supply Voltage
	T505	5.0 x 3.2	Clip Sine	4	TCXO	12 ~ 25	2.7 ~ 3.3
	C505	5.0 x 3.2	Clip Sine	4	TCVCXO	12 ~ 25	2.7 ~ 3.3
	T325	3.2 x 2.5	Clip Sine	4	TCXO	13 ~ 40	2.7 ~ 3.3
	C325	3.2 x 2.5	Clip Sine	4	TCVCXO	13 ~ 40	2.7 ~ 3.3

Programmable Crystal Oscillator

SMD Ceramic Package	Product Series	Package Size (mm)	Output Logic	Pads	Description	Frequency Range (MHz)
	JX701	7.0 x 5.0	CMOS	6	Programmable	10~212
	JX702	7.0 x 5.0	PECL	6	Programmable	10~212

SaRonix-eCera FCP

Quartz Crystals (MHz)

Package	Product Series	**SaRonix Reference P/N	Package Size (mm)	Pads	Description	Frequency Range (MHz)
	GA	NYP	11.2 x 4.8 x 13.5	2	Metal Can Through-Hole	1.8432~150
	GB/GG	49S	11.2 x 5.0 x 3.5 11.2 x 5.0 x 2.5	2	Metal Can Through-Hole	3.2~125
	GC/GF	49SMLB	11.5 x 4.5 x 4.0 11.5 x 4.5 x 3.0	2	Metal Can SMD	3.2~125
	F8	N/A	8.0 x 4.5	2	Glass Sealed SMD Ceramic	6~125
	FP	NKS7	7.0 x 5.0	4	Seam Sealed SMD Ceramic	6~125
	F6	NES6	6.0 x 3.5	2	Glass and Seam Sealed SMD Ceramic	6~125
	FX	NKS6	6.0 x 3.5	4	Glass and Seam Sealed SMD Ceramic	6~125
	F9	NES5	5.0 x 3.2	2	Glass and Seam Sealed SMD Ceramic	8~125
	FY	NKS5	5.0 x 3.2	4	Glass and Seam Sealed SMD Ceramic	8~125
	FF	N/A	4.0 x 2.5	4	Seam Sealed SMD Ceramic	12~66
	FL	NKS3	3.2 x 2.5	4	Seam Sealed SMD Ceramic	12~66
	FQ	N/A	3.2 x 2.5	4	Glass Sealed SMD Ceramic	12~66
	FH	NKS2	2.5 x 2.0	4	Seam Sealed SMD Ceramic	16~66
	UW	N/A	2.0 x 1.6	4	Au-Sn Sealed SMD Ceramic	26~66
	FW	N/A	2.0 x 1.6	4	Seam Sealed SMD Ceramic	24~54
	US	N/A	1.6 x 1.2	4	Au-Sn Sealed SMD Ceramic	26~66

SaRonix-eCera FCP

Crystal Oscillator (kHz)

SMD Ceramic Package	Product Series	Package Size (mm)	Output Logic	Pads	Description	Frequency Range (MHz)
	KN 2.5V	7.0 x 5.0	CMOS	4	kHz Crystal Oscillator	32.768
	KN 3.3V	7.0 x 5.0	CMOS	4	kHz Crystal Oscillator	32.768
	KD 2.5V	5.0 x 3.2	CMOS	4	kHz Crystal Oscillator	32.768
	KD 3.3V	5.0 x 3.2	CMOS	4	kHz Crystal Oscillator	32.768
	KK 2.5V	3.2 x 2.5	CMOS	4	kHz Crystal Oscillator	32.768
	KK 3.3V	3.2 x 2.5	CMOS	4	kHz Crystal Oscillator	32.768

Tuning Fork Quartz Crystals

Package	Product Series	*SaRonix Reference P/N	Package Size (mm)	Pads/Pins	Description	Frequency Range (kHz)
	G1	N/A	8.0 x 3.0	2	Tubular Tuning Fork, Through-Hole	32.768 kHz
	G2	N/A	6.0 x 2.0	2	Tubular Tuning Fork, Through-Hole	32.768 kHz
	G3	N/A	6.0 x 2.0	2	Tubular Tuning Fork, SMD	32.768 kHz
	G4	32S12C-F	8.0 x 3.8	4	Plastic Molded Tuning Fork, SMD	32.768 kHz
	G5	N/A	7.0 x 1.5	4	Plastic Molded Tuning Fork, SMD	32.768 kHz

SaRonix-eCera FCP



	Key Applications	Connectivity Standard	Part No.	Frequency	Package (mm x mm)	Output Level	Chipset	Supply Voltage
Networking	10-Gig Ethernet PHY, 10-Gig Ethernet NIC, 10-Gig Ethernet PON	10GE/10GEAPON	SX10GE156	156.25	7 x 5	CMOS	Broadcom BCM8071/3, BCM8704/05/06/24/25/27/52	3.3V
		10GE/10GEAPON	SN10GE156	156.25		PECL		
	Gigabit Ethernet PHY	GbE	FNETHE025	25		CMOS	Marvell 98DX125	
	10 Gigabit Ethernet-Fiber Channel PHY, Network Interface Card	10GE-FC	SN10GE159	159.375		PECL	Broadcom BCM8704/05/25	
	Ethernet Passive Optical Network ONU, OLT	EPON	FNEPON125	125		CMOS	Teknovus TK3713/14/15/21/23, PMC-Sierra PAS6201/301, PAS5201, Cortina CS8012/16B/20/21/26	
	Gigabit Passive Optical Network ONU, OLT	GPON	SXGPON155	155.52		CMOS	PMC-Sierra PAS7401	
			SNGPON155	155.52		PECL	PMC-Sierra PAS6401/5211, Cortina CS8212, Broadlight BL2338/40/45/47/48, BL3238/BL3458	
	PCI Express NPU, Embedded	PCIe 2.0, 3.0	SHPCIE100	100		HCSL	Intel, Freescale	
Voice-over IP Gateway	VoIP	FNGEPO002	2.048	CMOS	Legerity LE88221/41			
Storage	SAS2/SATA3 Host Bus Adapter/RAID Controller	SAS2/SATA3	FNSAS2075	75	7 x 5	CMOS	PMC-Sierra PM8011, PM8004/5	3.3V
			SNSAS2150	150		PECL	LSI SAS2108, SAS2X24/28/36, PMC-Sierra PM8004/5	
		DDR2	FNDDR1133	133.33		CMOS	LSISAS2108	
	SASx/SATAx Solid State Drive	SATAx/SASx	FKSSD1025	25	3.2 x 2.5	CMOS	Intel X25-E	3.3V
	SAS2/SATA3 Hard Disk Drive	SAS2/SATA3 HDD	FDSAS2062	62.5	5 x 3.2	CMOS	Marvell/LSI HDD controller	2.5V
FDSAS6062			Marvell 88SR1091, LSI Mamba				1.8V	
Ultra Mobility	Smart Phone, WiFi/Bluetooth Module, Smart Book, Portable Media Player	WiFi/Bluetooth	UJWIFI026	26	2.5 x 2.0	Clipped Sine	CSR9000 (UF6026+BC7820)	1.8V
Digital Media	IP Set-top Box, HD Set-top Box	MPEG4	FNSTB1027	27	7 x 5	CMOS	ST STi7109, STi7110, STi5202	3.3V
Security	IP Camera, Digital Video Recorder	MPEG4	FNSURV027	27	7 x 5	CMOS	TI DM642	3.3V
			FNSURV054	54			Techwell TW2834/35/ 36/15/16/18	