DIODES
INCORPORATED

PERICOM® A PRODUCT LINE OF DIODES INCORPORATED

ENABLING SERIAL CONNECTIVITY

PRECISION TIMING & CONNECTIVITY

diodes.com

PRECISION TIMING & CONNECTIVITY

COMPANY OVERVIEW

DIODES INCORPORATED'S PRODUCTS ARE DESIGNED FOR HIGH PERFORMANCE, ACROSS A WIDE RANGE OF EXISTING AND EMERGING APPLICATIONS.

Diodes Incorporated is a leading global manufacturer and supplier of high-quality application specific standard products within the broad discrete, logic, analog and mixed-signal semiconductor markets. Diodes serves the consumer electronics, computing, communications, industrial, and automotive markets.

Diodes' products include diodes, rectifiers, transistors, MOSFETs, protection devices, function-specific arrays, single gate logic, amplifiers and comparators, Hall-effect and temperature sensors, power management devices, including LED drivers, AC-DC converters and controllers, DC-DC switching and linear voltage regulators, and voltage references along with special function devices, such as USB power switches, load switches, voltage supervisors, and motor controllers.

Diodes also offers a broad portfolio of vertically integrated connectivity, signal integrity switching and timing solutions for the timing, switching, bridging and conditioning of high-speed signals required by today's ever-increasing speed and bandwidth demanding applications.

It's global footprint includes sales offices in 5 countries and manufacturing locations in China, Europe and the U.S.A.

A focus on product innovation, cost reduction, acquisitions and customer service has made Diodes Incorporated an industry leader.

Diodes Incorporated enables serial connectivity with the industry's most complete solutions for the computing, communications, consumer, embedded, and automotive market segments with products spanning analog, digital and mixed-signal integrated circuits, power management solutions and quartz-based frequency control products (FCP). Pericom, a product line of Diodes Incorporated, supplies essential solutions for the timing, switching, bridging and conditioning of high-speed signals required by today's ever increasing speed and bandwidth demanding applications.

WHY DIODES?

- **Broad portfolio of vertically integrated connectivity, signal integrity switching and timing solutions**
- **Standards compliance, increased system reliability, and lowered system costs**
- **Unique signal conditioning solutions enable the full potential of the latest high-speed serial protocols**
- **Total "Segment Solutions" approach offers multiple products optimized for specific market segments**

TIMING

Diodes Incorporated's broad offering of timing products enables us to be your complete timing solution partner. Our portfolio includes crystals, crystal oscillators and clock ICs that provide options for your design in terms of performance and cost. Our timing solutions, cover output frequencies ranging from kHz to GHz with jitter in the low femtoseconds. Diodes Incorporated's portfolio of quartz and silicon clock ICs, allows us the possibility to provide customization for your needs while balancing your performance and cost requirements.

SWITCHING

Our expertise in high-speed signal routing allows us to provide switch products with the highest signal integrity and achieve the most efficient and clear signal routing for data rates up to 20Gbps. Our products are designed with the end applications in mind. Customers who design for digital television, ultra mobility devices, infotainment, storage, server, set-top box, notebook PC and desktop PC applications benefit from our breadth of knowledge and design technology in routing high-speed signals across PCB or cables.

CONNECTIVITY

Our portfolio of ICs with protocol specific functionality for high-speed standards includes PCI Express Packet Switches, PCIe to PCIX Bridges, PCIe to PCI Bridges, PCIe to USB Swidge, PCIe/ PCI/ I2C/ SPI/ 8-bits bus to UART to address the specific design challenges posed by high speed connectivity of the smaller and faster electronics today.

SIGNAL INTEGRITY

ReDriver signal conditioning products correct for signal level attenuation and noise (jitter) using equalization, pre-emphasis/de-emphasis techniques for low bit error rates with high-speed signal protocol standards while maintaining the eye-pattern signal integrity at the receiver endpoint in high speed, serial-differential protocols, like PCIe 1.0/2.0/3.0, SATA2.0/3.0, SAS2.0/3.0, USB3.1 Gen1/Gen2, and 10GE. In addition, HDMI and DisplayPort Repeater products aid the equalization of input signals and reduce jitter on the display data signal path for display/video applications.

SUPERSPEED USB · TYPE-C · Type-C · SERIAL ATA · Thunderbolt · 10/25/50/100GbE

Serial Attached SCSI · FibreChannel · CERTIFIED DisplayPort™ · HDMI™ HIGH DEFINITION MULTIMEDIA INTERFACE · PCI EXPRESS®

PRECISION TIMING & CONNECTIVITY

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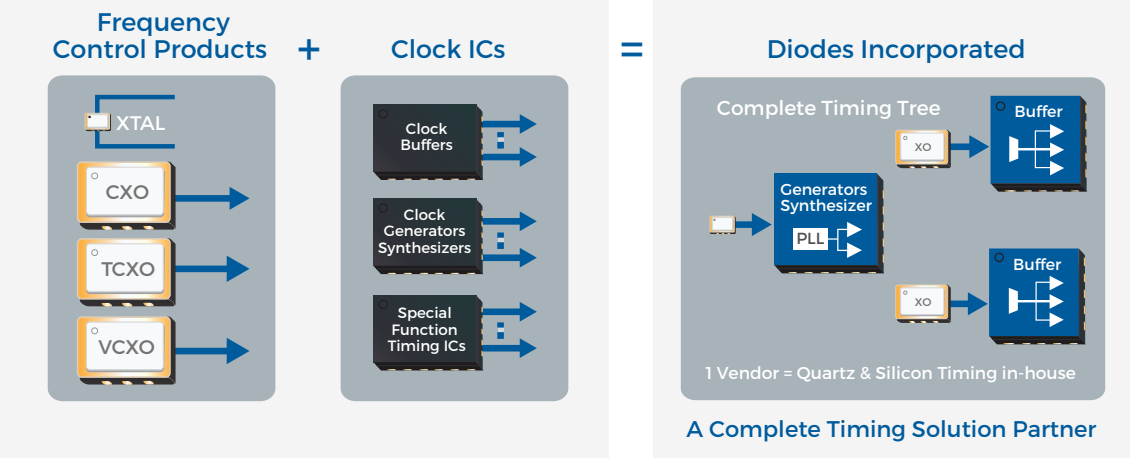
TIMING SOLUTIONS

THE **DIODES** ADVANTAGE

Complete Timing Solution Partner



Vertically Integrated for All Your Timing Needs

Diodes Incorporated's Timing portfolio includes crystals, crystal oscillators, compensated crystal oscillators, as well as fully integrated multiple output clock ICs.

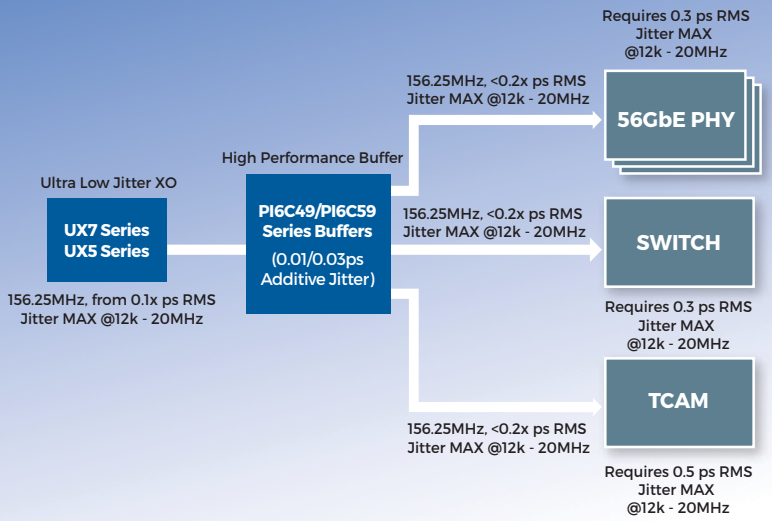
Our wide range of crystal and crystal oscillators provide:

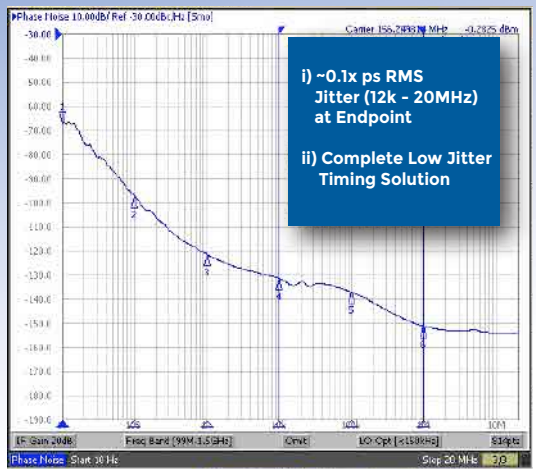
- Output frequencies ranging from kHz to GHz
- Complete portfolio of outputs
  - CMOS
  - CML
  - LVPECL
  - LVDS
  - Clipped sine wave
  - HCSL
- Complete portfolio of XO with standard XO, VCXO, TCXO to ultra low jitter and high temperature XO
- Multiple voltage ranges from 1.0V to 3.3V (even legacy 5V)
- Large portfolio of SMT package options to fit your footprint requirements

Our wide selection of Clock ICs provide the perfect pairing to your choice of crystal or crystal oscillator:

- Clock generators from our FlexOut (<0.1ps jitter), HiFlex (~0.3ps jitter) and Embedded/ PCIe clocks cater to all your system requirements
- Clock buffers supporting up to 6GHz with low additive jitter provide the fanout needed for your choice of XO or Clock Generator

Complete Timing Solution for 50GbE Systems



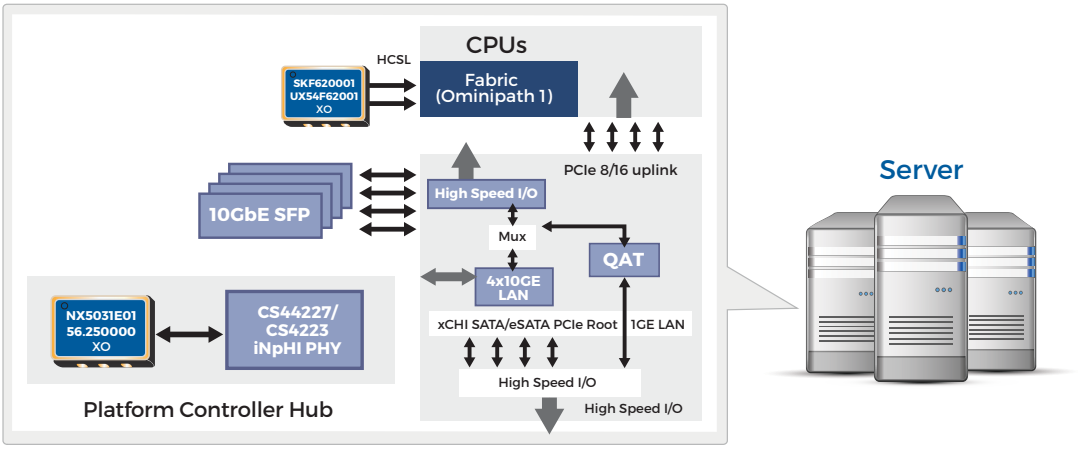


Application Specific Crystal Oscillators - ASSP XO

- ASSP XO products provide excellent physical performance combining low jitter and low power, with proven technology that is specific to your application.

ASSP XO Part Number	Applications/Connectivity	Output Frequency (MHz)	Package (mm x mm)	Output Level	Supply Voltage (V)
UX7040GE01	40GE	156.25	7 x 5	LVPECL	3.3
UX5040GE01			5 x 3.2	LVPECL	
PD10GE156	10GE/ 10GEPON	156.25	5 x 3.2	LVPECL	3.3
LD10GE156			5 x 3.2	LVDS	
SQPCIE100	PCIe 3.0	100	5 x 3.2	HCSL	3.3
NX32PCIE3			3.2 x 2.5	HCSL	2.5, 3.3
NX25PCIE3			2.5 x 2.0	HCSL	2.5, 3.3

Timing Solutions in Server Application



Differential Output Crystal Oscillators

Product Series	Package Size (mm)	Pads	Output Logic	Supply Voltage (V)	Frequency Range (MHz)	Jitter (ps_{RMS})
UX32/UX322	3.2 x 2.5 x 1.2	6	LVPECL	2.5, 3.3	100~162	<0.1, <0.3
PK 2.5V/PK 3.3V			LVPECL	2.5, 3.3	25~162	<1
UX33/UX323			LVDS	2.5, 3.3	100~162	<0.1, <0.3
LK 2.5V/LK 3.3V			LVDS	2.5, 3.3	25~162	<1
SK 2.5V/SK 3.3V			HCSL	2.5, 3.3	25~162	<1
UX52/UX502	5.0 x 3.2 x 1.2	6	LVPECL	2.5, 3.3	100~162	<0.1, <0.3
PD 2.5V/PD 3.3V			LVPECL	2.5, 3.3	25~162	<1
UX53/UX503			LVDS	2.5, 3.3	100~162	<0.1, <0.3
LD 2.5V/LD 3.3V			LVDS	2.5, 3.3	25~162	<1
SQ 2.5V/SQ 3.3V			HCSL	2.5, 3.3	25~162	<1
UX72/UX702	7.0 x 5.0 x 2.0	6	LVPECL	2.5, 3.3	100~162	<0.1, <0.3
PB 2.5V/PB 3.3V			LVPECL	2.5, 3.3	25~162	<1
UX73/UX703			LVDS	2.5, 3.3	100~162	<0.1, <0.3
PX 2.5V/PX 3.3V			LVDS	2.5, 3.3	25~162	<1
SP 2.5V/3.3V			HCSL	2.5, 3.3	100~162	<1

HiFlex Programmable Crystal Oscillators

Product Series	Package Size (mm)	Pads	Output Logic	Supply Voltage (V)	Frequency Range (MHz)	Jitter (ps_{RMS})
NX251	2.5 x 2.0 x 1.0	4	LVCMOS	2.5, 3.3	5~250	0.4 (typ), <1
NX252		6	LVPECL	2.5, 3.3	5~1000	0.4 (typ), <1
NX253			LVDS	2.5, 3.3	5~1000	0.4 (typ), <1
NX254			HCSL	2.5, 3.3	5~212.5	0.4 (typ), <1
NX256			CML	2.5, 3.3	5~1000	0.4 (typ), <1
NX321	3.2 x 2.5 x 1.0	4	LVCMOS	2.5, 3.3	5~250	0.4 (typ), <1
NX322		6	LVPECL	2.5, 3.3	5~1000	0.4 (typ), <1
NX323			LVDS	2.5, 3.3	5~1000	0.4 (typ), <1
NX324			HCSL	2.5, 3.3	5~212.5	0.4 (typ), <1
NX326			CML	2.5, 3.3	5~1000	0.4 (typ), <1
NX501	5.0 x 3.2 x 1.2	6	LVCMOS	2.5, 3.3	5~250	0.4 (typ), <1
NX502			LVPECL	2.5, 3.3	5~1000	0.4 (typ), <1
NX503			LVDS	2.5, 3.3	5~1000	0.4 (typ), <1
NX504			HCSL	2.5, 3.3	5~212.5	0.4 (typ), <1
NX506			CML	2.5, 3.3	5~1000	0.4 (typ), <1
NX701	7.0 x 5.0 x 2.0	4	LVCMOS	2.5, 3.3	5~250	0.4 (typ), <1
NX702		6	LVPECL	2.5, 3.3	5~1000	0.4 (typ), <1
NX703			LVDS	2.5, 3.3	5~1000	0.4 (typ), <1
NX704			HCSL	2.5, 3.3	5~212.5	0.4 (typ), <1
NX706			CML	2.5, 3.3	5~1000	0.4 (typ), <1
NX7/5/3xSA	All Packages (2 Frequencies selectable)	6	All Types	2.5, 3.3	5~1000	0.4 (typ), <1
NX7/5/3xSB	All Packages (4 Frequencies selectable)	6	All Types	2.5, 3.3	5~1000	0.4 (typ), <1

High Precision Crystal Oscillators

Product Series	Package Size (mm)	Pads	Output Logic	Supply Voltage (V)	Frequency Range (MHz)	PPM
WL 251	2.5 x 2.0 x 0.8	4	LVCMOS	1.8, 2.5, 3.3	10~52	5-20
WL 321	3.2 x 2.5 x 0.9	4	LVCMOS	1.8, 2.5, 3.3	8~52	5-20
WL 501	5.0 x 3.2 x 1.2	6	LVCMOS	1.8, 2.5, 3.3	8~52	5-20
WL 701	7.0 x 5.0 x 1.4	6	LVCMOS	1.8, 2.5, 3.3	8~52	5-20

LVCMOS Crystal Oscillators

- LVCMOS XO provides the best-in-class jitter performance and wide frequency range.
  Along with our complete voltage selection from 0.9V to 3.3V, Diodes can fulfill all your LVCMOS XO requirements.

Product Series	Package Size (mm)	Pads	Supply Voltage (V)	Frequency Range (MHz)	Jitter
FS 1.8V/FS 2.5V/FS 3.3V	1.6 x 1.2 x 0.6	4	1.8, 2.5, 3.3	1~66	<1 ps_{RMS}
LX201	2.0 x 1.6 x 0.75	4	0.9, 1.2, 1.5	1~50	<1 ps
FM 1.8V/FM 2.5V/FM 3.3V	2.0 x 1.6 x 0.75	4	1.8, 2.5, 3.3	1~125	<1 ps_{RMS}
LX251	2.5 x 2.0 x 0.9	4	0.9, 1.2, 1.5	1~50	<1 ps
FJ 1.8V/FJ 2.5V/FJ 3.3V	2.5 x 2.0 x 0.9	4	1.8, 2.5, 3.3	1~162	<1 ps_{RMS}
UX31/UX321	3.2 x 2.5 x 1.0	4	2.5, 3.3	40~162	<0.1, <0.3 ps_{RMS}
LX321	3.2 x 2.5 x 1.0	4	0.9, 1.2, 1.5	1~50	<1 ps
FK 1.8V/FK 2.5V/FK 3.3V	3.2 x 2.5 x 1.0	4	1.8, 2.5, 3.3	1~162	<1 ps_{RMS}
UX51/UX501	5.0 x 3.2 x 1.2	4	2.5, 3.3	40~162	<0.1, <0.3 ps_{RMS}
LX501	5.0 x 3.2 x 1.2	4	0.9, 1.2, 1.5	1~50	<1 ps
FD 1.8V/FD 2.5V/FD 3.3V	5.0 x 3.2 x 1.2	4	1.8, 2.5, 3.3	1~156.25	<1 ps_{RMS}
UX71/UX701	7.0 x 5.0 x 1.4	4	2.5, 3.3	40~162	<0.1, <0.3 ps_{RMS}
LX701	7.0 x 5.0 x 1.4	4	0.9, 1.2, 1.5	1~50	<1 ps
FN 1.8V/FN 2.5V/FN 3.3V	7.0 x 5.0 x 1.4	4	1.8, 2.5, 3.3	1~162	<1 ps_{RMS}

LVCMOS Spread Spectrum Crystal Oscillators

- For designs that have tight system EMI requirements, a spread spectrum oscillator is required to reduce system EMI.
  Complete portfolio of spread spectrum XOs with LVCMOS output.

Product Series	Package Size (mm)	Pads	Supply Voltage (V)	Frequency Range (MHz)	Jitter
MK	3.2 x 2.5 x 1.0	4	2.5, 3.3	1~166	<200 ps cy-cy
MD	5.0 x 3.2 x 1.2	4	2.5, 3.3	1~166	<200 ps cy-cy
MN	7.0 x 5.0 x 1.8	4	2.5, 3.3	1~166	<200 ps cy-cy

Tight Frequency Stability 32.768 kHz (32k) LVCMOS Crystal Oscillators

Product Series	Package Size (mm)	Pads	Supply Voltage (V)	Frequency Stability (ppm)	Current Consumption (µA)
KX201	2.0 x 1.6 x 0.75	4	1.8, 2.5, 3.3	20~50	25
KX251	2.5 x 2.0 x 0.9	4	1.8, 2.5, 3.3	20~50	10
KX321	3.2 x 2.5 x 1.0	4	1.8, 2.5, 3.3	20~50	10

Application Specific Crystal Oscillators (VCXO)

ASSP VCXO Part Number	Applications/ Connectivity	Pads	Frequency (MHz)	Package Size (mm)	Output Level	Supply Voltage (V)
YNETHE125	GbE	4	125	7 x 5	LVCMOS	3.3
FRETHE025	GbE	6	25	7 x 5	LVCMOS	3.3

High Temperature Range Crystal Oscillators (Up to 125˚C)

Product Series	Package Size (mm)	Pads	Output Logic	Supply Voltage (V)	Frequency Range (MHz)
HX201	2.0 x 1.6 x 0.75	4	LVCMOS	1.8, 2.5, 3.3	1~125
HX251	2.5 x 2.0 x 0.9	4	LVCMOS	1.8, 2.5, 3.3	1~162
HX321	3.2 x 2.5 x 1.0	4	LVCMOS	1.8, 2.5, 3.3	1~162
HX322	3.2 x 2.5 x 1.0	6	LVPECL	2.5, 3.3	25~162
HX323	3.2 x 2.5 x 1.0	6	LVDS	2.5, 3.3	25~162
HX501	5.0 x 3.2 x 1.2	4	LVCMOS	1.8, 2.5, 3.3	1~125
HX502	5.0 x 3.2 x 1.2	6	LVPECL	2.5, 3.3	25~162
HX503	5.0 x 3.2 x 1.2	6	LVDS	2.5, 3.3	25~162
HX701	7.0 x 5.0 x 1.4	4	LVCMOS	1.8, 2.5, 3.3	1~125
HX702	7.0 x 5.0 x 1.4	6	LVPECL	2.5, 3.3	25~162
HX703	7.0 x 5.0 x 1.4	6	LVDS	2.5, 3.3	25~162

Voltage Controlled Crystal Oscillators (VCXO)

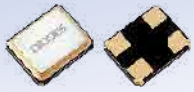
Product Series	Package Size (mm)	Pads	Output Logic	Supply Voltage (V)	Frequency Range (MHz)	Jitter (ps_{RMS})
YJ 3.3V	2.5 x 2.0 x 0.9	4	LVCMOS	1.8, 2.5, 3.3	1~66	<1
YK 3.3V	3.2 x 2.5 x 1.0	6	LVCMOS	1.8, 2.5, 3.3	1~66	<1
YD 3.3V	5.0 x 3.2 x 1.2	6	LVCMOS	1.8, 2.5, 3.3	1~66	<1
FR 3.3V	7.0 x 5.0 x 2.0	6	LVCMOS	1.8, 2.5, 3.3	1~66	<1

Temperature Compensated Crystal Oscillators (TCXO)

- TCXOs are used to ensure that frequency variance is minimal across different temperatures.

Product Series	Package Size (mm)	Pads	Output Logic	Supply Voltage (V)	Frequency Range (MHz)	Frequency Stability (ppm)	Type
JT255	2.5 x 2.0 x 0.8	4	Clip Sine	1.8~3.3	10~52	0.5~5	TCXO
JT325	3.2 x 2.5 x 1.0	4	Clip Sine	1.8~3.3	10~52	0.5~5	TCXO
JC255	2.5 x 2.0 x 0.8	4	Clip Sine	1.8~3.3	10~52	0.5~5	VCTCXO
JC325	3.2 x 2.5 x 1.0	4	Clip Sine	1.8~3.3	8~52	0.5~5	VCTCXO

CRYSTALS/XTALS | MHz Quartz Crystals



- Quartz MHz crystals are produced in Diodes' own factories enabling quick product sampling and customization.

Product Series	Package Size (mm)	Pads	Frequency Range (MHz)	Package Description
US	1.6 x 1.2 x 0.3	4	24~66	Au-Sn or Seam Sealed SMD Ceramic
FW	2.0 x 1.6 x 0.45	4	16~66	Seam Sealed SMD Ceramic
FH	2.5 x 2.0 x 0.6	4	12~66	Seam Sealed SMD Ceramic
FL	3.2 x 2.5 x 0.65	4	8~66	Seam Sealed SMD Ceramic

For complete package size options, including 5 x 3.2mm and 7 x 5mm Visit: www.diodes.com/products/connectivity-and-timing/crystal-and-crystal-oscillator/xtals-crystals/

ASSP Wi-Fi Crystals

- Benefits include: Ease of use, Quick turnaround, Design flexibility, Optimized pricing

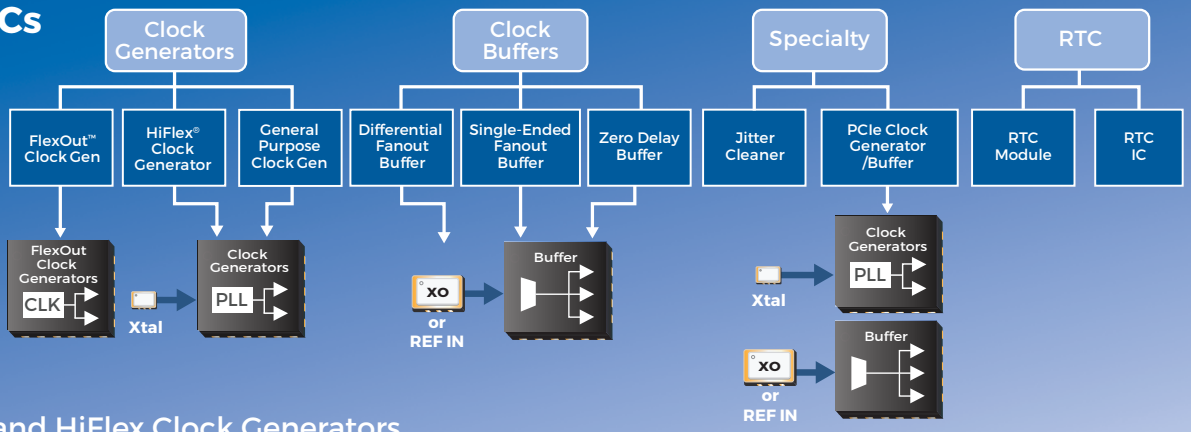
	Broadcom		Marvell			MTK			Intel	Qualcomm Atheros
Frequency (MHz)	37.40	37.40	26	37.40	40	26	40	52	38.4	40
Tolerance @ 25C	10 ppm	10 ppm	10 ppm	10 ppm	10 ppm	7 ppm	7 ppm	7 ppm	10 ppm	10 ppm
Stability over Temp	10 ppm	10 ppm	10 ppm	10 ppm	10 ppm	17 ppm	17 ppm	17 ppm	12 ppm	10 ppm
Load Capacitance	12 pF	16 pF	9 pF	8 pF	10 pF	12 pF	12 pF	12 pF	7 pF	7 pF
Temp Range	-20°C/ +85°C	-20°C/ +85°C	-20°C/ +85°C	-30°C/ +85°C	-20°C/ +85°C	-40°C/+100°C	-40°C/+100°C	-40°C/+100°C	-30°C/+90°C	-30°C/+85°C
ESR (Ohms)	60 Max	60 Max	60	30	40	30	30	30	60	40
MPN	FL374WFBR1	FL374WFBR2	FL260WFMR1	FL374WFMR1	FL400WFMR1	FL260WFMT1	FL400WFMT1	FL520WFMT1	FL384WFIN1	FL400WFQA1
	FW374WFBR1	FW374WFBR2	FW260WFMR1	FW374WFMR	FW400WFMR1	FW260WFMT1	FW400WFMT1	FW520WFMT1	FW384WFIN1	FW400WFQA1

kHz Tuning Fork Crystals

- kHz tuning fork crystals are used in a variety of applications including communication and measuring equipment, commercial and industrial applications, automotive electronics.

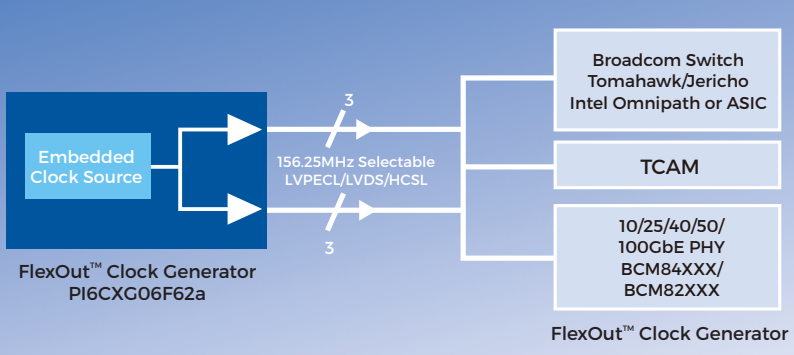
Product Series	Package Size (mm)	Pads	Frequency Range (kHz)	Package Description
G1	8.0 x 3.0 x 18.8	2	32.768	Tubular Tuning Fork, Through-Hole
G2	6.0 x 2.0 x 18.8	2	32.768	Tubular Tuning Fork, Through-Hole
G3	6.0 x 2.0 x 9.0	2	32.768	Tubular Tuning Fork, SMD
G4	8.0 x 3.8 x 2.5	4	32.768	Plastic Molded Tuning Fork, SMD
G5	7.0 x 1.5 x 1.4	4	32.768	Plastic Molded Tuning Fork, SMD
G8	3.2 x 1.5 x 0.8	2	32.768	Tuning Fork, SMD
G9	2.0 x 1.2 x 0.6	2	32.768	Tuning Fork, SMD

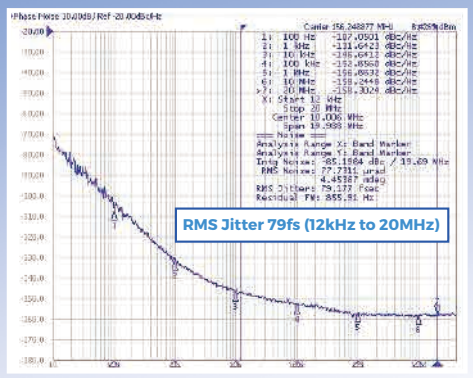
Clock ICs



FlexOut and HiFlex Clock Generators

Part Number	No. of Outputs	Output Freq. (MHz)	Supply Voltage (V)	Jitter (typ) (ps)	Package
PI6CXG06F62a	6	156.25MHz (FlexOut Clock Generator)	2.5 / 3.3	0.1	48-LQFP
PI6CXG06F62B	6	156.2539MHz (FlexOut Clock Generator)	2.5 / 3.3	0.1	48-LQFP
PI6LC4831A	17	12 complimentary LVCMOS Ref clock (25MHz) A: 2 HCSL 100MHz B: 2 Complimentary LVCMOS 24MHz C: 1 HCSL 100/200 with Spread	3.3	2.3 (PCIe 2.0)	56-TQFN
PI6LC4833	14	4x HCSL 100/125/200/250 MHz w/ OE and SS 2x LVCMOS 33/66/50/100MHz, SS capable 5x LVCMOS 25/125 MHz 1x LVPECL 312.5/156.25/125 MHz 1x LVCMOS 156.25/125 MHz 1x LVPECL 25/125 MHz	2.5 / 3.3	0.5	56-TQFN
PI6LC48S25A	11	11x LVPECL/LVDS 25/ 50/ 100 / 125/ 156.25/312.5MHz	2.5 / 3.3	0.28	56-TQFN
PI6LC4840	10	1 LVCMOS Ref Clock (25MHz) A; 3 LVCMOS 25/50 B: 3 LVCMOS 125MHz C: 3 LVDS 125MHz	3.3	0.35	32-TQFN
PI6LC4820	9	A: 5 LVPECL/LVDS 312.5/156.25/125 B: 3 LVPECL/LVDS 312.5/156.25/125 C: 1 LVPECL/LVDS 312.5/156.25/125	3.3	0.5	48-TQFN
PI6LC4830	5	1 LVPECL Ref Clock (25MHz) A: 3 HCSL 100MHz, 1 LVCMOS 100MHz B: 1 LVCMOS 100/50	3.3	0.4	32-TQFN
PI6LC48P0401	4	4x LVPECL 62.5/125/156.25MHz	2.5 / 3.3	0.3	20-TSSOP
PI6LC48H04	4	4x HCSL 100/125/133.33/156.25/200MHz	2.5 / 3.3	0.28	20-TSSOP
PI6LC48S04	2+2	2x HCSL + 2x LVDS 100/125/156.25/ 250MHz	2.5 / 3.3	0.3	32-TQFN
PI6LC48P03	3	3x LVPECL 125/156.25/312.5/625MHz	2.5 / 3.3	0.3	20-TSSOP
PI6LC48P0301	3	3x LVPECL125/150/156.25/200/250/155.52MHz	2.5 / 3.3	0.32	24-TSSOP
PI6LC48P0301A	3	3x LVPECL125/150/156.25/200/250/155.52MHz	2.5 / 3.3	0.32	24-TQFN
PI6LC48P21	2	2x LVPECL 125.5MHz	2.5 / 3.3	0.3	8-TSSOP
PI6LC48P02	2	2x LVPECL106.25/12.5/159.375MHz	2.5 / 3.3	0.32	20-TSSOP
PI6LC48P0201	2	2x LVPECL 62.5/125/156.25MHz	2.5 / 3.3	0.33	20-TSSOP
PI6LC48L0201	2	2x LVDS 62.5/125/156.25MHz	2.5 / 3.3	0.32	20-TSSOP
PI6LC48H02	2	2x HCSL 25/100/125/ 200MHzz	3.3	0.3	16-TSSOP
PI6LC48P0201A	2	2x LVPECL 62.5/125/156.25MHz	2.5 / 3.3	0.33	20-TQFN
PI6LC48L0201A	2	2x LVDS 62.5/125/156.25MHz	2.5 / 3.3	0.32	20-TQFN
PI6LC48C51	1	1x CMOS 75/ 77.76/ 78.125/ 80.566406/ 150/ 155.52/ 156.25/ 161.132812MHz	2.5 / 3.3	0.2	8-TSSOP
PI6LC48P0101	1	1x LVPECL 312.5/ 625MHz	2.5 / 3.3	0.3	8-TSSOP
PI6LC48P25104	1	1x LVPECL 156.25MHz	2.5 / 3.3	0.3	8-TSSOP
PI6LC48C21	1	1x CMOS 125MHz	2.5 / 3.3	0.33	8-TSSOP





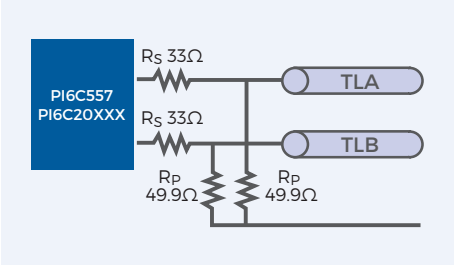
PCIe Timing Solutions

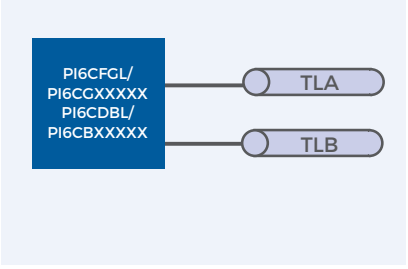
- Extensive portfolio... PCIe Gen 1,2,3 and 4

Part Number	No. of Outputs	Output Freq. (MHz)	PCIe Gen	Supply Voltage (V)	Thunderbolt Capable	Package
PI6C557-01B*	1	100MHz HCSL	1 / 2 / 3	3.3	Yes	16-TQFN
PI6C557-03A/ B*	2	2x 100MHz HCSL	2 / 3	3.3	Yes	16-TSSOP
PI6LC48H02*	2	2x 100MHz HCSL, Low Jitter	4	3.3	Yes	16-TSSOP
PI6CFGL201B	2	2x 100MHz Low Power HCSL	1 / 2 / 3	1.8~3.3	Yes	24-TQFN
PI6CFGL202B	2	2x 100MHz Low Power HCSL	1 / 2 / 3	1.8~3.3	Yes	16-TSSOP
PI6CG18201	2	2x 100MHz Low Power HCSL	4	1.8	Yes	24-TQFN
PI6C557-05/ B*	4	4x 100MHz HCSL	2 / 3	3.3	Yes	20-TSSOP
PI6CFGL401B	4	4x 100MHz Low Power HCSL	1 / 2 / 3	1.8~3.3	Yes	32-TQFN
PI6CFGL402B	4	4x 100MHz Low Power HCSL	1 / 2 / 3	1.8~3.3	Yes	20-TSSOP
PI6CG18401	4	4x 100MHz Low Power HCSL	4	1.8	Yes	32-TQFN
PI6CFGL601B	6	6x 100MHz Low Power HCSL	1 / 2 / 3	1.8~3.3	Yes	32-TQFN
PI6CG18801	8	8x 100MHz Low Power HCSL	4	1.8	Yes	48-TQFN

*Automotive Compliant versions with AEC-Q100 qualification – see Automotive-Compliant Timing table (Page 15) for more information.

Traditional HCSL vs. Low Power HCSL Termination





Benefits of Low Power HCSL:

- Lower BOM cost and component count, removes 4 resistors per output
- Lower current consumption by > 50%
- Equivalent or better PCIe Gen 3 jitter performance

PCIe Clock Buffers

- Provide multiple fanouts of PCIe clock signals

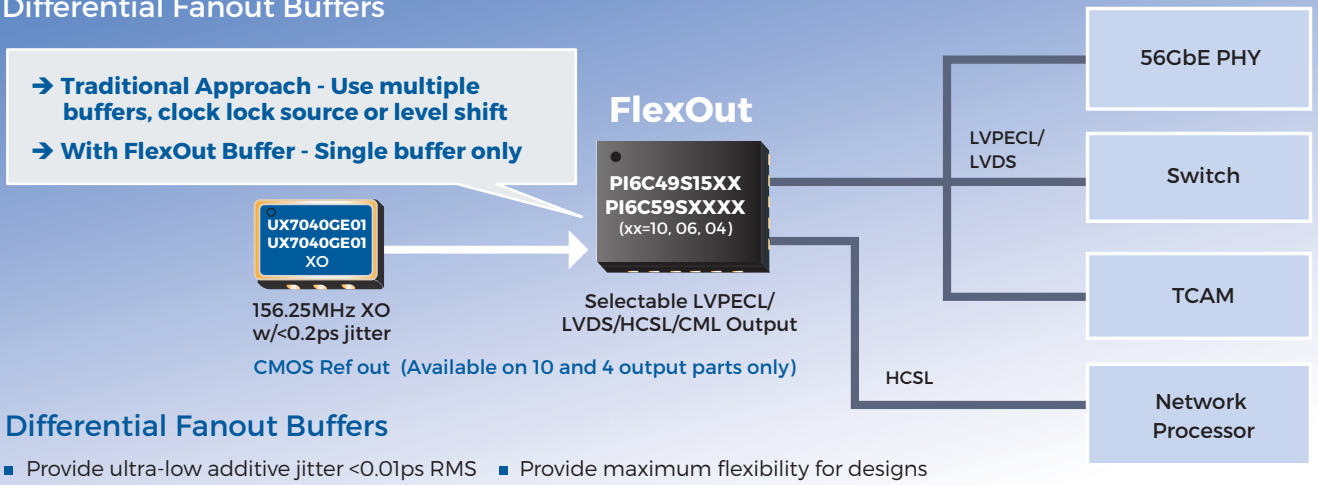
Part Number	No. of Outputs	Output Freq. (MHz)	PCIe Gen	Supply Voltage (V)	Jitter (typ) (ps)	Package(s)
PI6CB18801	8	100MHz Low Power HCSL	4	1.8	0.5	48-TQFN
PI6CB18800	8	100MHz Low Power HCSL	4	1.8	0.5	48-TQFN
PI6C20800S	8	95-105MHz HCSL	2	3.3	70	48-TSSOP, SSOP
PI6C20800B	8	95-105MHz HCSL	3	3.3	60	48-TSSOP
PI6CB18601	6	100MHz Low Power HCSL	4	1.8	0.5	40-TQFN
PI6CB18401	4	100MHz Low Power HCSL	4	1.8	0.5	32-TQFN
PI6C20400	4	100MHz HCSL	1	3.3	50	28-SSOP, TSSOP
PI6C20400A	4	100MHz HCSL	2	3.3	50	28-SSOP, TSSOP
PI6C20400B	4	100MHz HCSL	3	3.3	50	28-SSOP, TSSOP
PI6PCIEB24	4	100MHz HCSL	2	3.3	50	20-TQFN
PI6C4931504-04	4	250MHz HCSL	3	2.5 / 3.3	0.1	20-TSSOP
PI6CDBL401B	4	100MHz Low Power HCSL	3	1.8	50	32-TQFN
PI6CDBL402B	4	100MHz Low Power HCSL	3	1.8	50	28-SSOP, TSSOP
PI6C4931502-04	2	250MHz HCSL	3	2.5 / 3.3	0.1	16-TSSOP
PI6CB18200	2	100MHz Low Power HCSL	4	1.8	0.5	24-TQFN
PI6CEQ20200	2	100MHz HCSL	3	3.3	40	20-SSOP, QSOP

Zero Delay Buffers

- Provide low jitter, low skew and high frequency outputs

Part Number	No. of Outputs	Output Freq. (MHz)	Input / Output Type	Output Voltage (V)	Jitter (typ) (ps)	Package(s)
PI6C2409-1H	9	133	LVTTL	3.3	200	16-SOIC, TSSOP
PI6C2405A-1	5	133	LVTTL	3.3	200	8-TSSOP
PI6C2405A-1H	5	133	LVTTL	3.3	200	8-TSSOP

Differential Fanout Buffers



Differential Fanout Buffers

- Provide ultra-low additive jitter <0.01ps RMS
- Provide maximum flexibility for designs
- Provide BOM cost and board space reduction

Part Number	No. of Outputs	Output Freq. (MHz)	Output Type	Supply Voltage (V)	Additive Jitter (typ) (ps)	Package(s)
PI6C5912016	16	2000	LVPECL	2.5 / 3.3	0.01	48-TQFN
PI6C5912016-01	16	2000	LVPECL	2.5 / 3.3	0.01	48-TQFP
PI6C5921516	16	1500	LVDS	2.5 / 3.3	0.01	48-TQFN
PI6C5921512	12	1500	LVDS	2.5 / 3.3	0.01	40-TQFN
PI6C5912012	12	2000	LVPECL	2.5 / 3.3	0.01	40-TQFN
PI6C49S1510A	10	1500	LVPECL, LVDS, HCSL	2.5 / 3.3	0.03	48-TQFN
PI6C4911510	10	1500	LVPECL	2.5 / 3.3	0.03	32-TQFN/TQFP
PI6C4911510-05	10	1500	LVPECL	2.5 / 3.3	0.03	32-TQFP
PI6C4853111	10	500	LVPECL	2.5 / 3.3	0.05	32-TQFP
PI6C5912006	6	2000	LVPECL	2.5 / 3.3	0.01	32-TQFN
PI6C49S1506	6	1500	LVPECL, LVDS, HCSL	2.5 / 3.3	0.03	32-TQFP
PI6C4921506	6	1500	LVDS	2.5 / 3.3	0.03	24-TSSOP
PI6C4911506-06	6	1500	LVPECL	2.5 / 3.3	0.03	24-TSSOP
PI6C4911506	6	1500	LVPECL	2.5 / 3.3	0.03	20-TSSOP
PI6C59S6005	5	6000	LVPECL, CML	2.5 / 3.3	0.01	24-TQFN
PI6C4911505	5	1500	LVPECL	2.5 / 3.3	0.03	20-TSSOP
PI6C4911505-04	5	1500	LVPECL	2.5 / 3.3	0.03	20-TSSOP
PI6C4911505-07	5	1500	LVPECL	2.5 / 3.3	0.03	20-TSSOP
PI6C5916004	4	6000	LVPECL	2.5 / 3.3	0.01	16-TQFN
PI6C5913004	4	3000	LVPECL	2.5 / 3.3	0.01	16-TQFN
PI6C5913004-01	4	3000	LVPECL	2.5 / 3.3	0.01	16-TQFN
PI6C5922504	4	2500	LVDS	2.5 / 3.3	0.03	16-TQFN
PI6C4931504-04	4	250	HCSL	2.5 / 3.3	0.1	20-TSSOP
PI6C49S1504	4	1500	LVPECL, LVDS, HCSL	2.5 / 3.3	0.03	20-TSSOP
PI6C4911504-03	4	1500	LVPECL	2.5 / 3.3	0.03	20-TSSOP
PI6C48535-11B	4	500	LVPECL	3.3	0.05	20-TSSOP
PI6C48535-01B	4	500	LVPECL	3.3	0.04	20-TSSOP
PI6C48533-01	4	800	LVPECL	3.3	0.05	20-TSSOP
PI6C48545	4	650	LVDS	3.3	0.05	20-TSSOP
PI6C48543	4	800	LVDS	3.3	0.05	20-TSSOP
PI6C4911504D2	4	650	LVPECL	2.5 / 3.3	0.03	20-TSSOP
PI6C485311	2	800	LVPECL	3.3	0.05	8-SOIC
PI6C4931502-04	2	250	HCSL	2.5 / 3.3	0.1	16-TSSOP

Single Ended Fanout Buffers (LVCMOS)

- Provides high performance, fast rise/ fall times
- Provides BOM cost and board space reduction

Part Number	No. of Outputs	Output Freq. (MHz)	Input Type	Supply Voltage (V)	Package(s)
PI49FCT2080x	Varies	Varies	LVCMOS	2.5	Varies
PI49FCT3280x	Varies	Varies	LVCMOS	3.3	Varies
PI49FCT380x	Varies	Varies	LVCMOS	3.3	Varies
PI6C10807	10	250	LVTTL, LVCMOS	1.8 / 2.5	20-TSSOP, SSOP
PI6C10810	10	250	LVTTL, LVCMOS	1.2 / 1.5 / 1.8 / 2.5	20-TSSOP
PI6C49X0210/A	10	200	Crystal, LVTTL, LVCMOS, Differential	1.5 / 1.8 / 2.5 / 3.3	32-QFN
PI6C49X0208	8	200	Crystal, LVTTL, LVCMOS, Differential	1.2 / 1.5 / 1.8 / 2.5 / 3.3	32-QFN
PI6C49X0206T	6	250	LVCMOS	1.5/ 1.8 / 2.5 / 3.3	14-TSSOP
PI6C10806B	6	100	Crystal, LVCMOS	1.8 / 2.5 / 3.3	16-TSSOP
PI6C49X0204B-A	4	200	LVTTL, LVCMOS	2.5 / 3.3	8-SOIC
PI6C49X0204A	4	200	LVTTL, LVCMOS	1.5/ 1.8/ 2.5/3.3	8-SOIC
PI6C49X0204B	4	250	LVTTL, LVCMOS	1.5/ 1.8/ 2.5/3.3	8-SOIC
PI6C49X0204C	4	200	LVTTL, LVCMOS	1.5/ 1.8/ 2.5/3.3	8-SOIC
PI6C10804	4	250	LVTTL, LVCMOS	1.8 / 2.5	8-SOIC
PI6CL10804	4	200	LVCMOS	1.2 / 1.5	8-SOIC
PI6CV2304	4	160	LVTTL, LVCMOS	3.3	8-SOIC, TSSOP
PI6CV304	4	160	LVTTL, LVCMOS	3.3	8-SOIC, TSSOP
PI6C49X0202	2	250	LVTTL, LVCMOS	2.5 / 3.3	8-SOIC
PI6C49X0201	1	360	LVTTL, LVCMOS	2.5 / 3.3	8-SOIC

Real Time Clocks (RTC)

Part Number	Description	Alarm Interrupt	NVRAM	Clock Calibration	Battery Backup	Interface	Package(s)
PT7C4302	3-Wire Interface RTC with 31 Byte NVRAM	✓	31x8	✓	✓	3-Wire	8-SOIC, DFN
PT7C4307	I^2C Interface with 56 Byte NVRAM RTC	✓	56x8	✓	✓	I^2C	8-SOIC, DFN
PT7C4337B	I^2C Interface and Low Time Keeping Voltage IC	✓	✓	✓	✓	I^2C	8-SOIC, MSOP, TSSOP, DFN
PT7C4337AC	I^2C Interface and Low Time Keeping Voltage RTC module integrated Crystal	✓	✓	–	✓	I^2C	16-SOIC, 8-DFN
PT7C433833	I^2C Interface and Low Power RTC	✓	56x8	✓	✓	I^2C	8-SOIC,MSOP, DFN
PT7C4311	I^2C Interface with 56 Byte NVRAM RTC	✓	56x8	✓	✓	I^2C	8-SOIC, DFN
PT7C4363B	Low Power Consumption and I^2C RTC	✓	✓	✓	✓	I^2C	8-SOIC
PT7C4372A	I^2C Interface RTC with Digital Clock Precision Adjusment function	✓	✓	✓	✓	I^2C	8-SOIC, TSSOP, DFN
PT7C43190/A	3-Wire Interface RTC with Low Power Consumption	✓	✓	✓	✓	3-Wire	8-SOIC, TSSOP, DFN
PT7C43390/A	I^2C Interface and Low Power Consumption RTC	✓	✓	✓	–	I^2C	8-SOIC, TSSOP, DFN
PT7C4339	Low Power Consumption I^2C RTC	✓	✓	✓	✓	I^2C	8-SOIC, TSSOP, DFN
PT7C4563B	Low Power Consumption I^2C RTC	✓	✓	✓	✓	I^2C	8-SOIC, MSOP, TSSOP, DFN

Speciality Clocks

- Speciality functions for unique applications

Part Number	Function	No. of Outputs	Output Freq. (MHz)	Output Type	Output Voltage (V)	Package
PI6CX201A	Jitter Cleaner	1	25	LVCMOS	3.3	20-TSSOP

AEC-Q100/200 qualified in TS16949 certified facilities supporting PPAP documentation

Crystals

■ AEC-Q200 qualified in TS16949 certified facilities supporting PPAP documentation

Product Series	Package Size (mm)	Frequency Range (MHz)	Operating Temp Range	Supported AEC-Q200 Grade	Applications
FWQ	2.0 x 1.6	16 - 66	-40 to 125°C	1, 2, 3	Infotainment, Telematics, ADAS, Camera module, BCM, Lighting, Automotive Networking, Key
FHQ	2.5 x 2.0	12 - 66	-40 to 125°C	1, 2, 3	
FLQ	3.2 x 2.5	8 - 66	-40 to 125°C	1, 2, 3	
FYQ	5.0 x 3.2	8 - 80	-40 to 125°C	1, 2, 3	

Crystal Oscillators

■ AEC-Q200 qualified in TS16949 certified facilities supporting PPAP documentation

Product Series	Package Size (mm)	Output Type	Supply Voltage (V)	Frequency Range (MHz)	Operating Temp Range	Supported AEC-Q200 Grade	Applications
HXQ-CMOS	2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5, 5.0 x 3.2, 7.0 x 5.0	CMOS	1.8 / 2.5 / 3.3	1.75 - 60	-40 to 125°C	1, 2, 3	Infotainment, Telematics, ADAS, Camera module
HXQ-LVPECL	3.2 x 2.5, 5.0 x 3.2, 7.0 x 5.0	LVPECL	2.5 / 3.3	25 - 161	-40 to 125°C	1, 2, 3	
HXQ-LVDS	3.2 x 2.5, 5.0 x 3.2, 7.0 x 5.0	LVDS	2.5 / 3.3	25 - 161	-40 to 125°C	1, 2, 3	
FKQ	3.2 x 2.5	CMOS	1.8 / 2.5 / 3.3	1 - 106.25	-40 to 125°C	1, 2, 3	
FDQ	5.0 x 3.2	CMOS	1.8 / 2.5 / 3.3	1 - 156.25	-40 to 85°C	3	
FNQ	7.0 x 5.0	CMOS	1.8 / 2.5 / 3.3	1 - 156.25	-40 to 85°C	3	
KXQ	2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5, 5.0 x 3.2	CMOS	1.8 / 2.5 / 3.3	32.768kHz	-40 to 85°C	3	
KKQ	3.2 x 2.5	CMOS	1.8 / 2.5 / 3.3	32.768kHz	-40 to 85°C	3	
KDQ	5.0 x 3.2	CMOS	1.8 / 2.5 / 3.3	32.768kHz	-40 to 85°C	3	

PCIe Clock Generators

■ AEC-Q100 qualified in TS16949 certified facilities supporting PPAP documentation

Part Number	No. of Outputs	Output Freq. (MHz)	Output Type	PCIe Gen Support	Supply Voltage (V)	Thunderbolt Capable	Package	Operating Temp Range	Supported AEC-Q100 Grade	Applications
PI6C557-01BQ	1	100	HCSL	1 / 2 / 3	3.3	Yes	16-TQFN	-40 to 85°C	3	Infotainment, Telematics, ADAS
PI6C557-03AQ	2	100	HCSL	2 / 3	3.3	Yes	16-TSSOP	-40 to 85°C	3	
PI6LC48H02Q	2	100	HCSL	2 / 3	3.3	Yes	16-TSSOP	-40 to 85°C	3	
PI6C557-05Q	4	100	HCSL	2 / 3	3.3	Yes	20-TSSOP	-40 to 85°C	3	
PI6CG182Q†	2	100	HCSL	2 / 3 / 4	1.8	Yes	24-TQFN	-40 to 105°C	2	
PI6CG184Q†	4	100	HCSL	2 / 3 / 4	1.8	Yes	32-TQFN	-40 to 105°C	2	
PI6CG188Q†	8	100	HCSL	2 / 3 / 4	1.8	Yes	48-TQFN	-40 to 105°C	2	

PCIe Clock Buffers

■ AEC-Q100 qualified in TS16949 certified facilities supporting PPAP documentation

Part Number	No. of Outputs	Output Freq. (MHz)	Output Type	PCIe Gen Support	Supply Voltage (V)	Thunderbolt Capable	Package	Operating Temp Range	Supported AEC-Q100 Grade	Applications
PI6CB184Q†	4	100	HCSL	2 / 3 / 4	1.8	Yes	32-TQFN	-40 to 105°C	2	Infotainment, Telematics, ADAS

General Purpose Clock Buffers

■ AEC-Q100 qualified in TS16949 certified facilities supporting PPAP documentation

Part Number	No. of Outputs	Max Output Freq. (MHz)	Output Type	Supply Voltage (V)	Package	Operating Temp Range	Supported AEC-Q100 Grade	Applications
PI6C49CB01Q†	1	250	CMOS	1.8 / 2.5 / 3.3	8-SOIC	-40 to 105°C	2, 3	Infotainment, Telematics, ADAS
PI6C49CB02Q†	2	250	CMOS	1.8 / 2.5 / 3.3	8-SOIC	-40 to 105°C	2, 3	
PI6C49CB04AQ†	4	250	CMOS	1.8 / 2.5 / 3.3	8-SOIC	-40 to 105°C	2, 3	
PI6C49CB04BQ†	4	250	CMOS	1.8 / 2.5 / 3.3	8-SOIC	-40 to 105°C	2, 3	
PI6C49CB04CQ†	4	250	CMOS	1.8 / 2.5 / 3.3	8-SOIC	-40 to 105°C	2, 3	

† Available Q1 2019

CONNECTIVITY SOLUTIONS

Electronics today are fast – the signals that drive them run at increasingly higher speeds. Diodes Incorporated's broad portfolio of ICs are equipped with protocol specific functionality for high speed standards, that include PCI Express Packet Switches, PCIe to PCIX/ PCI Bridges, PCIe to USB Swidge, PCIe/ PCI/ I2C/ SPI/ 8-bits bus to UARTs and more to address the specific design challenges posed by high speed connectivity of today's smaller and faster electronics.

THE **DIODES** ADVANTAGE

Diodes has over 15 years of PCI Express design experience, with many industry firsts along the way. Diodes brings a number of industry leading advantages to the PCIe design community:

- Broadest portfolio of complementary PCIe functions in the industry
- Designed to the latest version of the PCISIG specification for low power and flexibility
- Evaluation boards, design kits, and samples to help jump start your design cycle.
- Worldwide applications support including schematic and PCB layout review and debug assistance to get your platform up and running and meet your design schedule.

PCIe/PCI/UART Technology

PCIe Gen1/2 Packet Switch Families

- PCIe 1.1/ 2.1 3-16 ports/ 3-24 lanes concurrent packet switching, Lowest Latency
- Customer programmable PHY, switching and EEPROM configurable
- QFP, QFN, BGA packages – Smallest footprint, lowest power
- Wider range temperature -40~+85°C support for various applications
- Clock buffer integration, ease of design
- Peer-to-Peer Data Transfer and Hot-Plug Support
- Automotive Compliant Packet Switches (PI7C9X2G304xLQ/2G404xLQ) qualified to AEC-Q100 Grade 3 in TS16949 certified sites supporting PPAP documentation.

PCIe to USB 2.0 Swidge

- PCIe to USB 2.0 + PCIe Switch and Bridge in one chip.

PCIe to PCI-X™ Bridge

- Non-transparent mode and fully reversible – high throughput, x4 PCIe lanes
- Customer programmable power management features
- PCIe and PCI-X bus Hot-plug support, supports 128, 256, and 512-byte payloads
- The only PCI-SIG 1.1 compliant PCIe to PCI-X bridge in the market

PCIe to PCI Bridge Family

- Reversible PCIe-to-PCI Bridge with dual priority modes (9x111SL)
- Supports isochronous data streaming: real-time/live video
- Small packages: 14x14 LQFP 128-pin
- High-output drivers – 8 PCI devices across connectors – industry unique (9x112)
- Support Legacy Mode for CPU Replacement PCI Port (9x113SL & 9x118SL)

PCIe/PCI to UART I/O Bridge

- Industry first one-chip PCIe to UART Solution, PCI-SIG 1.1 compliant
- PCI to UART Bridges compatible QFP packages
- 2, 4, or 8 high-performance 16C950 UART ports
- Windows WHQL, Linux software drivers

SPI/I²C 8-bits Bus to UART I/O Bridge

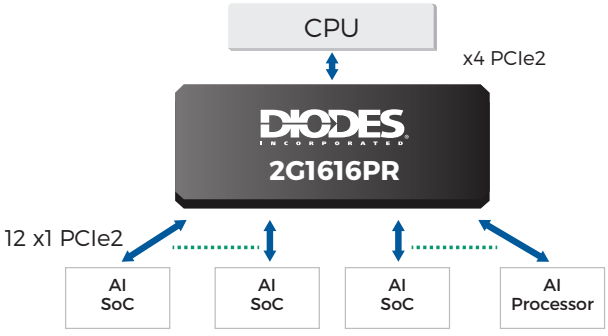
- SPI/I²C to 1/2 UART bridges
- 8-bits Bus to 4/8 UART Bridges
- Low power
- Compatible QFN, TSSOP, LQFP packages

PCI Express Packet Switches

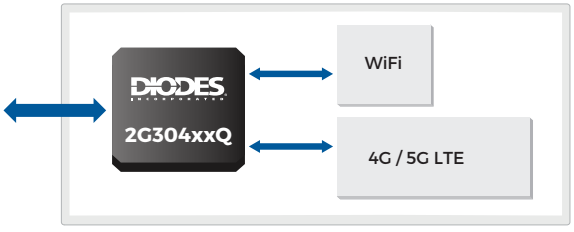
Part Number	Description	Protocol	Ports	Lanes	Package
PI7C9X2G303EL	3-port, 3-lane, ExtremeLo PCIe Packet Switch	PCIe 2.1	3	3	136-aQFN
PI7C9X2G304EL	3-port, 4-lane, ExtremeLo PCIe Packet Switch	PCIe 2.1	3	4	136-aQFN
PI7C9X2G304SL	3-port, 4-lane, SlimLine PCIe Packet Switch	PCIe 2.1	3	4	128-LQFP
PI7C9X2G304SLQ*	Automotive compliant 3-port, 4-lane, PCIe Packet Switch	PCIe 2.1	3	4	128-LQFP
PI7C9X2G308GP	3-port, 8-lane, PCIe Packet Switch	PCIe 2.1	3	8	196-LBGA
PI7C9X2G312GP	3-port, 12-lane, PCIe Packet Switch	PCIe 2.1	3	12	196-LBGA
PI7C9X2G404EL	4-port, 4-lane, ExtremeLo PCIe Packet Switch	PCIe 2.1	4	4	136-aQFN
PI7C9X2G404SL	4-port, 4-lane, SlimLine PCIe Packet Switch	PCIe 2.1	4	4	128-LQFP
PI7C9X2G404SLQ*	Automotive compliant 4-port, 4-lane, PCIe Packet Switch	PCIe 2.1	4	4	128-LQFP
PI7C9X2G606PR	6-port, 6-lane, PCIe Packet Switch	PCIe 2.1	6	6	196-LBGA
PI7C9X2G608EL	6-port, 8-lane, ExtremeLo PCIe Packet Switch	PCIe 2.1	6	8	136-aQFN
PI7C9X2G608GP	6-port, 8-lane, PCIe Packet Switch	PCIe 2.1	6	8	196-LBGA
PI7C9X2G612GP	6-port, 12-lane, PCIe Packet Switch	PCIe 2.1	6	12	196-LBGA
PI7C9X20303SL	3-port, 3-lane, SlimLine PCIe Packet Switch	PCIe 1.1	3	3	128-LQFP
PI7C9X20303UL	3-port, 3-lane, UltraLo PCIe Packet Switch	PCIe 1.1	3	3	132-TQFN
PI7C9X20404SL	4-port, 4-lane, SlimLine PCIe Packet Switch	PCIe 1.1	4	4	128-LQFP
PI7C9X20505GP	5-port, 5-lane, PCIe Packet Switch	PCIe 1.1	5	5	256-PBGA
PI7C9X20508GP	5-port, 8-lane, PCIe Packet Switch	PCIe 1.1	5	8	256-PBGA
PI7C9X442SLB	PCIe-to-USB 2.0 Host Controller + PCIe Swidge	PCIe 1.1	3	3	128-LQFP
PI7C9X2G304ELQ*	Automotive compliant 3-port, 4-lane PCIe Packet Switch	PCIe 2.1	3	4	136-aQFN
PI7C9X2G404ELQ*	Automotive compliant 4-port, 4-lane PCIe Packet Switch	PCIe 2.1	4	4	136-aQFN
PI7C9X2G808PR	8-port, 8-lane, PCIe Packet Switch with GreenPacket™ Technology	PCIe 2.1	8	8	196-LBGA
PI7C9X2G1616PR	16-port, 16-lane, PCIe Packet Switch with PowerSave Technology	PCIe 2.1	16	16	324-HSBGA
PI7C9X2G912GP	9-port, 12-lane, PCIe Packet Switch with PowerSave Technology	PCIe 2.1	9	12	196-LBGA
PI7C9X2G1224GP	12-port, 24-lane, PCIe Packet Switch with PowerSave Technology	PCIe 2.1	12	24	324-HSBGA

* Automotive compliant version with AEC-Q100 qualification for Automotive applications. GreenPacket is a trademark of Diodes Incorporated.

Application - Artificial Intelligence



Application - Telematics module



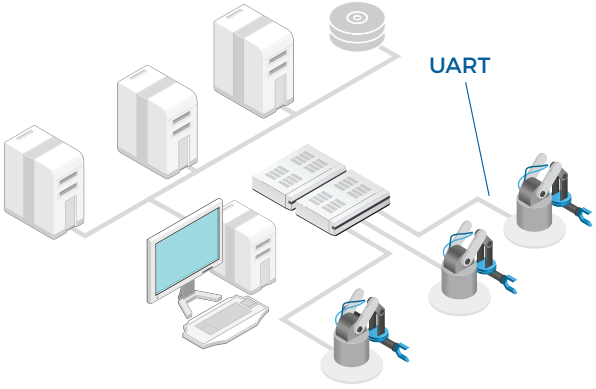
PCI Express Bridges

Part Number	Description	PCI Bus Masters	PCI Speed	PCI Bus Width	Ports	Lanes	Package
PI7C9X111SL	PCIe-to-PCI Reversible Bridge with PowerSave	4	66 MHz	32-Bit	1 PCI	1	128-LQFP
PI7C9X112SL	PCIe-to-PCI Bridge with PowerSave	8	66 MHz	32-Bit	1 PCI	1	128-LQFP
PI7C9X113SL	PCIe-to-PCI Bridge with PowerSave (Legacy Mode)	4	66 MHz	32-Bit	1 PCI	1	128-LQFP
PI7C9X118SL	PCIe-to-PCI Bridge with PowerSave (Legacy Mode)	4	66 MHz	32-Bit	1 PCI	1	128-LQFP
PI7C9X130	PCIe-to-PCI-X Reversible Bridge	6	133 MHz	64-Bit	1 PCI-X	4	256-PBGA
PI7C9X440SLB	PCIe-to-USB Host Controller	N/A	N/A	N/A	4 USB	1	128-LQFP

UART Bridges

Part Number	Description	UART Ports	Interface	Pins	Data Rate	Bytes	Tx/Rx FIFO Ctrs	Tx/Rx FIFO INT Trig	Auto RTS/ CTS	Package(s)
PI7C9X7952	PCIe-to-Dual UART I/O Bridge	2	PCIe	128	15Mbps	128	Yes	Yes	Yes	128-LQFP
PI7C9X7954	PCIe-to-Quad UART I/O Bridge	4	PCIe	128	15Mbps	128	Yes	Yes	Yes	128-LQFP
PI7C9X7958	PCIe-to-Octal UART I/O Bridge	8	PCIe	160	15Mbps	128	Yes	Yes	Yes	160-LFBGA
PI7C8952	PCI Dual UART I/O Bridge	2	PCI	128	15Mbps	128	Yes	Yes	Yes	100-LQFP
PI7C8954	PCI Dual Quad I/O Bridge	4	PCI	144	15Mbps	128	Yes	Yes	Yes	144-LQFP
PI7C8958	PCI Octal UART I/O Bridge	8	PCI	144	15Mbps	128	Yes	Yes	Yes	144-LQFP
PI7C9X1170	I²C/SPI to Single UART Bridge Controller	1	I²C/ SPI	16, 24	16Mbps	64	Yes	Yes	Yes	24-TSSOP 16-TSSOP 24-TQFN
PI7C9X760	I²C/SPI to Single UART Bridge Controller	1	I²C/ SPI	16, 24	16Mbps	64	Yes	Yes	Yes	24-TSSOP 16-TSSOP 24-TQFN
PI7C9X1172	I²C/SPI to Dual UART Bridge Controller	2	I²C/ SPI	28, 32	16Mbps	64	Yes	Yes	Yes	28-TSSOP 32-TQFN
PI7C9X762	I²C/SPI to Dual UART Bridge Controller	2	I²C/ SPI	28, 32	16Mbps	64	Yes	Yes	Yes	28-TSSOP 32-TQFN
PI7C9X752	16C550 Dual UART Bridge Controller	2	8-Bits	48	20Mbps	64	Yes	Yes	Yes	48-TQFP
PI7C9X754	16C550 Quad UART Bridge Controller	4	8-Bits	48, 64, 80, 100	20Mbps	64	Yes	Yes	Yes	100-MQFP 80-LQFP 64-LQFP 48-TQFN
PI7C9X794	16C550 Quad UART Bridge Controller	4	8-Bits	64	20Mbps	64	Yes	Yes	Yes	64-LQFP
PI7C9X798	16C550 Octal UART Bridge Controller	8	8-Bits	100	20Mbps	64	Yes	Yes	Yes	100-MQFP

Example: Factory Automation



Application - Mobile Low-Power Device

SIGNAL INTEGRITY SOLUTIONS

Poor signal quality can significantly impact system performance and reliability. Maintaining eye-pattern signal integrity at the receiver end-points in high-speed, serial-differential protocols, like PCI Express 1.0/2.0/3.0, SATA 2.0/3.0/4.0, SAS2.0/3.0 or USB 3.1/ 3.0, 10Gb Ethernet is a big challenge for system designers.

At high transmission rates, signal integrity issues become increasingly restrictive on the length of PCB trace (or cable length), reducing flexibility and feature implementation.

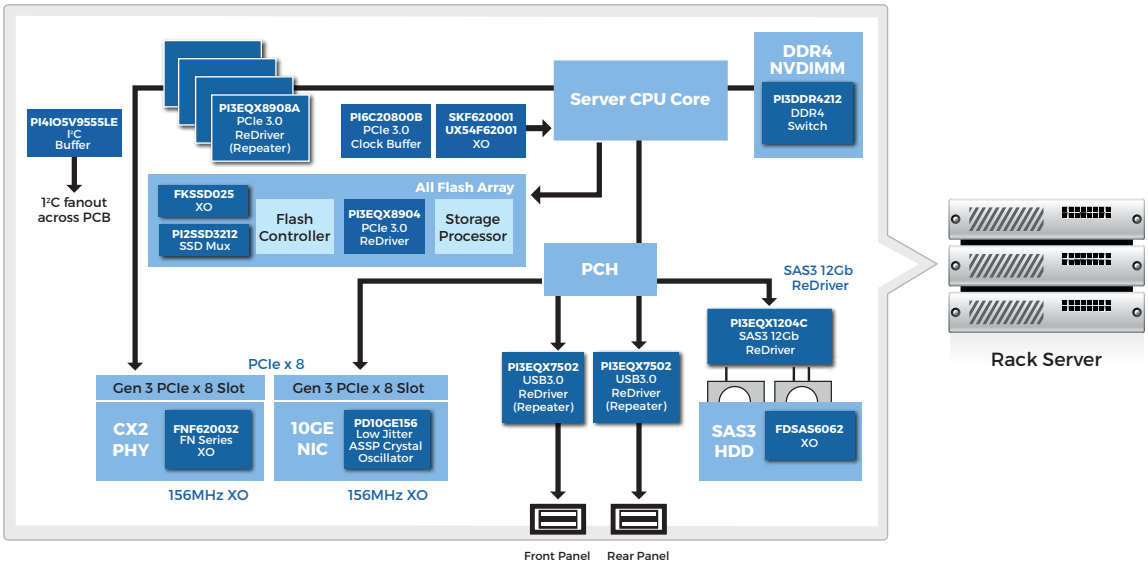
Diodes Incorporated ReDriver™ signal conditioning products correct for signal level attenuation and noise (jitter) using equalization, pre-emphasis/de-emphasis techniques for low Bit error rates with high-speed signal protocols including PCI Express, USB, SATA/SAS standards.

THE **DIODES** ADVANTAGE

ReDriver Product Features:

- Data rates of 2.5Gbps (PCIe), 3.0Gbps (SATA 3Gbps, SAS), 5.0Gbps (USB 3.0, PCIe 2.0), 6Gb (SAS 2), 8.0Gbps (PCIe 3.0, SATA 3/SAS 3, Combo), 10Gb (USB 3.1, Ethernet -SFI, XFI, ICR, KR), 12Gb (SAS3)
- Pin configured or I²C receiver equalization for each lane
- Pin configured or I²C transmitter de-emphasis and amplitude for each lane
- Input signal level detect and output squelch on all channels
- Electrical idle and OOB support
- Lowest power consumption optimized by protocol
- Standby mode – power down management
- Wide variety of package/feature options
- Linear amplifiers (8Gb - 16Gb) Pass link training signals

Signal Integrity, Timing & Switching Solutions in Rack Server Application



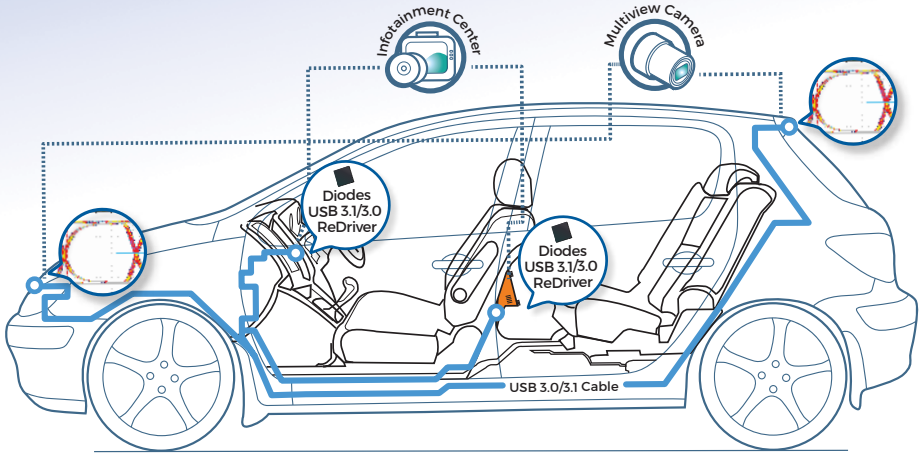
USB 3.1 GEN2 10G ReDriver/Repeater

Part Number	Function	Applications	Package
PI3EQX1002B1	3.3V 10.0Gbps 1-Port USB 3.1 GEN2 ReDriver with Equalization, Emphasis, Gain and Output Swing	Desktop, Notebook, Workstation, Server	30-TQFN
PI3EQX1004B1	3.3V 10.0Gbps 2-Port USB 3.1 GEN2 ReDriver with Equalization, Emphasis, Gain and Output Swing	Desktop, Notebook, Workstation, Server	42-TQFN

USB 3.1 GEN1 5G ReDrivers/Repeaters

Part Number	Automotive Compliant – with AEC-Q100 qualification supporting PPAP documentation	Function	Applications	Package
PI3EQX501B	PI3EQX501BQ	3.3V 5.0Gbps Single-Channel USB 3.0 ReDriver with Equalization and Emphasis	Automotive, Tablet, Smartphone, Ultrabook	8-TQFN
PI2EQX502T	–	1.2V 5.0Gbps 1-port USB 3.0 ReDriver with Equalization and Emphasis	Tablet, Notebook, Ultrabook	16-TQFN
PI3EQX7502B	–	3.3V 5.0Gbps 1-port USB 3.0 ReDriver with Equalization and Emphasis	Notebook, Ultrabook, Server	24-TQFN
PI3EQX7741AI	PI3EQX7741AIQ	3.3V 5.0Gbps 1-port USB 3.0 ReDriver with Equalization and Emphasis	Automotive, Notebook, Cabling, Embedded	20-TQFN
PI3EQX7742AI	–	3.3V 5.0Gbps 2-port USB 3.0 ReDriver with Equalization and Emphasis	Server, Workstation, Notebook, Embedded	42-TQFN
PI3EQX7841	–	3.3V 5.0Gbps 1-port USB 3.0 ReDriver with Equalization and Emphasis and I^2C Control	Server, Workstation, Notebook	20-TQFN

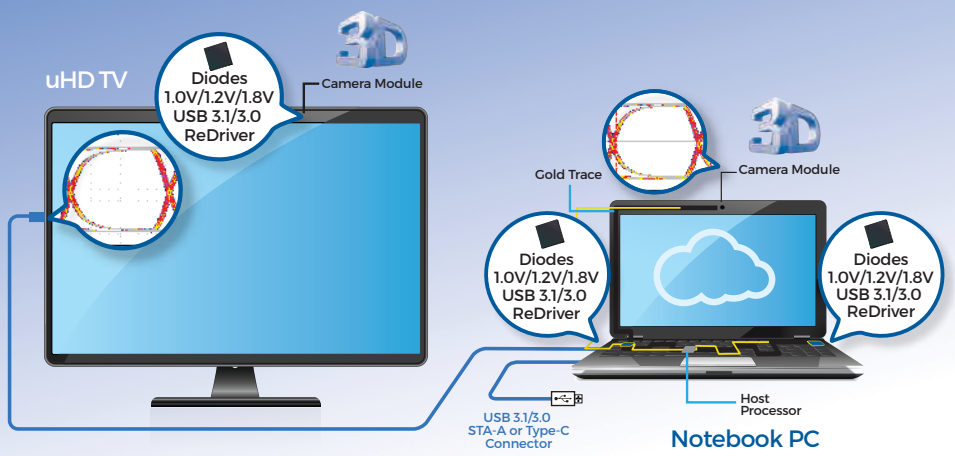
USB 3.1/3.0 ReDriver/Repeater Trace Profile Automotive Application



USB 3.1 GEN1 5G Active Switch ReDrivers/Repeaters 2:1 Mux

Part Number	Function	Applications	Package
PI2EQX638	1.8V 5.0Gbps, 2-port, USB 3.1 GEN1 Mux/DeMux ReDriver	Desktop, Notebook, Workstation, Server	18-X2QFN
PI2EQX682T	1.2V, 5.0Gbps, 2-Port USB 3.0 Mux/Demux ReDriver	Smartphone, Tablet, Notebook, Workstation, Server	18-X2QFN

Detail USB 3.1/3.0 ReDriver/Repeater Trace Profile with focus to Type-C, Cable & 3D Camera Application



PCI Express 3.0/10GE/ SATA3/SAS3 Combo ReDrivers/Repeaters

Part Number	Function	Protocol	Data Rate (Gbps)	Lanes	Package
PI3EQX12902A	3.3V PCIe3/SATA3 linear ReDriver	PCIe 3.0/SATA3	8.0	1	30-TQFN
PI3EQX12902B	3.3V 10GE/SAS3 Linear ReDriver	10GE/SAS3	10.0/12.0	1	30-TQFN
PI3EQX12908A2	3.3V 10GE/SAS3.0, Low EQ Linear ReDriver	10GE/SAS3	10.0/12.0	4	54-TQFN

PCI Express ReDrivers/Repeaters

Part Number	Function	Protocol	Data Rate (Gbps)	Lanes	Input Equalization Options, dB	Output Level Options	Output Swing, mV Max	Output Flat Gain, dB	Package
PI2EQX4401D	1-lane PCIe ReDriver with Equalization and De-emphasis	PCIe 1.0	2.5	1	2.5, 6.5	1.0x, 1.2x	1300	0, -3.5	36-TQFN
PI2EQX4402D	2-lane PCIe ReDriver with Equalization and De-emphasis	PCIe 1.0	2.5	2	2.5, 6.5	1.0x, 1.2x	1300	0, -3.5	84-LBGA
PI2EQX4432D	Equalizer with Flow-through pinout	PCIe 1.0	2.5	2	2.5, 6.5	1.0x, 1.2x	1300	0, -3.5	48-TQFN
PI3EQX5801	Equalization and Emphasis w/ I^2C Control, Low Power	PCIe 1.0/2.0	5.0	1	0~15.0	3.0x	1700	0, -3.5, -6.0	20-TQFN
PI2EQX5904	Equalization and Emphasis w/ I^2C Control	PCIe 1.0/2.0	2.5/5.0	4	1.2, 1.5, 2.6, 4.3, 5.8, 7.1, 9.0, 12.3	0.5, 0.7, 0.9, 1.0	1100	0, -2.5, -3.5, -4.5, -5.5, -6.5, -7.5, 8.5	100-LBGA
PI2EQX5984	Equalization and Emphasis w/ I^2C Control	PCIe 1.0/2.0	2.5/5.0	4	1.2, 1.5, 2.6, 4.3, 5.8, 7.1, 9.0, 12.3	0.5, 0.7, 0.9, 1.0	1100	0, -2.5, -3.5, -4.5, -5.5, -6.5, -7.5, 8.5	72-TQFN
PI3EQX8908A	3.3V PCIe 3.0 ReDriver	PCIe 1.0, 2.0, 3.0	2.5/5.0/ 8.0	4	16 steps, from 3 to 15	0.9, 1.0, 1.1, 1.2	1200	-4, -2, 0, 2	54-TQFN
PI3EQX8908A2	3.3V, 8 Channel PCIe 3.0, Low EQ Linear ReDriver	PCIe 1.0, 2.0, 3.0	2.5/5.0/ 8.0	4	16 steps, from 1.5 to 10.1	0.9, 1.0	1000	-4, -2, 0, 2	54-TQFN
PI3EQX8904	Flow-Through Pinout 4-Channels	PCIe 1.0, 2.0, 3.0	2.5/5.0/ 8.0	2	16 steps, from 8.5 to 15.1	0.7, 0.8, 0.9, 1.0	1000	-3.5, -1.5, 0.5 ,2.5	42-TQFN

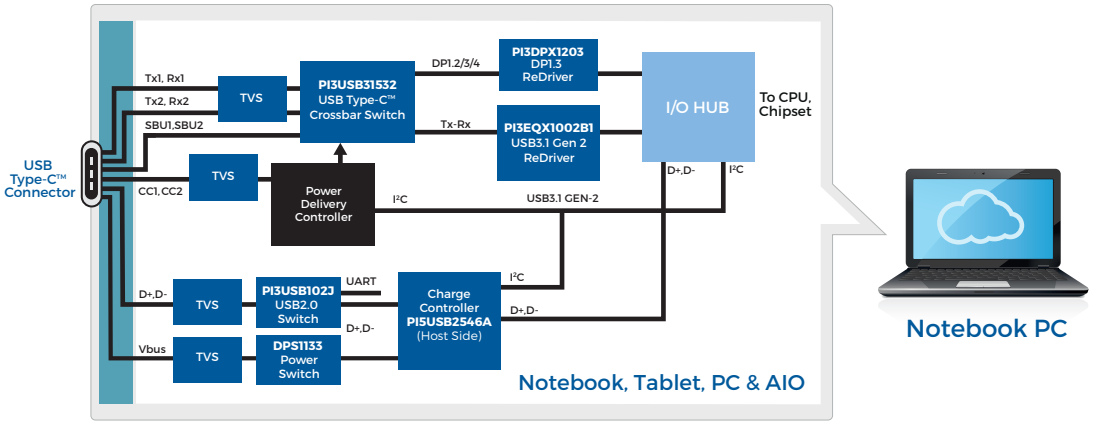
SAS3/SAS2/SATA3/XAUI ReDrivers/Repeaters

Part Number	Function	Protocol	Package
PI2EQX6804-A	1.2V, 6.5Gbps 4-lane/8-channel SAS/SATA/XAUI ReDriver with Pin Strap and I²C control	SAS/SATA/XAUI	100-LBGA
PI2EQX6812	6.5Gbps 2-lane/4-channel SAS2/SATA/XAUI ReDriver with Pin Strap and I²C control	SAS/SATA/XAUI	42-ZH
PI2EQX6814	1.2V, 6.5Gbps 4-lane/8-channel SAS/SATA/XAUI ReDriver with Pin Strap and Individual Channel I²C Control	SAS/SATA/XAUI	42-ZH
PI2EQX6874	1.2V, 6.5Gbps 4-lane/8-channel SAS2/SATA/XAUI ReDriver with Individual Channel I²C Control	SAS/SATA/XAUI	42-ZH
PI3EQX1204-C	3.3V, 12.5Gbps 4 channel SAS3 LINEAR ReDriver with Pin Strap and I²C control, FlowThrough pinout	SAS3/HDMI 3.0	42-QFN
PI3EQX6741ST	6Gbps 1-port SATA3i ReDriver with Digital Configuration, Standby Auto Slumber Mode, and HDD Detect Power Saving Mode	SATA3	20-TQFN
PI3EQX6801	6.5Gbps 1-port SAS/SATA/XAUI ReDriver	SAS/SATA/XAUI	20-TQFN
PI3EQX6814/6874	6.5Gbps 4-port SAS/SATA/XAUI ReDriver	SAS/SATA/XAUI	100-LFBGA
PI3EQX12902A	8Gbps 1 Port/2 Channels PCIe3/SATA3 Combo ReDriver with Linear Equalization	PCIe 3.0/SATA3	30-TQFN
PI3EQX12902B	3.3V, 1 Lane, 10GE/SAS3 Linear ReDriver	10GE/SAS3	30-TQFN
PI3EQX12908A2	3.3V, 8 Channel, 10GE/SAS3.0, Low EQ Linear ReDriver	10GE/SAS3	54-TQFN

10GbE KR Linear ReDrivers/Repeaters

Part Number	Description	Gbps	Input Equalization, dB	Package
PI3EQX10908A	4-lane 10GbE ReDriver w/ Equalization and Emphasis, Flow-through Pinout 8 channels	10.0	Contact Diodes Inc. for more information	56-TQFN

USB Type-C™ Solutions in Notebook Application



PI5USB2546A: Host side charge controller = Notebook, Tablet, AIO
PI3USB9281C: Device side port detection/protection = Tablet, Smartphone

USB TYPE-C SOLUTIONS

USB Type-C Products

Part Number	Description	Switch/ ReDriver	Application	Package(s)
PI2EQX638	1.8V 5.0Gbps, 2-port, USB 3.1 GEN1 Mux/DeMux ReDriver	ReDriver	Desktop, Notebook, Workstation, Server	18-X2QFN
PI3DBS3224	4-Channel 2x4 Crossbar Type-C Connector AUX Bandwidth Switch	Switch	Smartphone	20-TQFN
PI3DBS12212A	12 Gbps, 1-Lane (2-Channel), Differential 2:1 Mux/DeMux. 3.3V	Switch	External storage, Tablet, 2 in 1 NB	20-TQFN
PI3DBS12412A	12Gbps, 2-Lane (4-Channel), Differential 2:1 Mux/DeMux. 3.3V	Switch	External storage, Tablet, 2 in 1 NB	42-TQFN, 40-TQFN
PI3DPX1202A	DisplayPort 1.2 Limiting ReDriver with Low-Power and Aux Listener	ReDriver	Notebook, Desktop, AIO, Accessory, Display	48-TQFN
PI3DPX1203B	DP1.4 8.1Gbps Linear Redriver with Aux listening	ReDriver	Notebook, Desktop, AIO, Accessory, Display	32-TQFN, 42-TQFN
PI3DPX1205	USB 3.1 Gen2/DisplayPort 1.4, 6:4 Active Switch	ReDriver	Notebook, Desktop, Smartphone, Table, AIO	40-TQFN
PI3DPX1207	USB 3.1 Gen 2/Display Port 1.4 4:4 Liner reDriver for Type-C	ReDriver	Notebook, Desktop, Smartphone, Tablet, Display, Accessory, AIO	42-TQFN
PI3EQX1002B1	USB 3.1 Gen 2 ReDriver 10.0Gbps, 1-Port with Linear Gain, Equalization and Emphasis	ReDriver	Desktop PC, Notebook, Server, Workstation, IPC	30-TQFN
PI3PCIE3242A	PCIe 3.0, 1-Lane (2-Channel), Differential 2-Lane Exchange (2x2 Matrix) Switch 3.3V	Switch	Smartphone	30-TQFN
PI3PCIE3442A	PCIe 3.0, 2-lane (4-Channel), Differential 2 lane exchange (2x2 matrix) switch.	Switch	Switching 4 lanes of DP1.2 from PC/ Notebook/Tablet to Display monitor	42-TQFN, 40-TQFN
PI3USB102J	Dual SPDT for USB 2.0 HS Compliance and Flow Through Pinout with 5V protection	Switch	Routes signals for USB 2.0, PC, Notebook and Hand-held device	10-TQFN
PI3USB103	Dual SPST USB 2.0 Switch with Back Drive Support and MHL Switching Support	Switch	Routes signals for USB 2.0 Hand-held device	10-TQFN
PI3USB3102	USB 3.0 and USB 2.0 Combo Switch	Switch	Routing of USB 3.0 signals with low signal attenuation between source and sink	32-TQFN
PI3USB3102Q†	Automotive Compliant USB 3.0 and USB 2.0 Combo Switch	Switch	Routing of USB 3.0 signals in automotive applications with low signal attenuation between source and sink	32-TQFN
PI3USB30532	USB 3.1 Gen 1 Type C 6:4 Crossbar switch	Switch	Notebook, Tablet, Monitor	40-TQFN
PI3USB31532	USB 3.1 Gen 2/Display Port 1.4 6:4 Crossbar Switch for Type-C, 3.3V	Switch	Notebook, Desktop PC, Industrial PC, Docking Station	40-TQFN
PI3VDP12412	4-Lane DisplayPort 1.2 Switch	Switch	Routing of DisplayPort signals with low signal attenuation between source and sink.	42-TQFN, 48-BGA
PI3WVR12412	4-Lane DisplayPort 1.2/HDMI 2.0 Switch	Switch	Routing of DisplayPort signals with low signal attenuation between source and sink.	42-TQFN
PI3WVR13412	DP1.4/HDMI2.0 4 channel 2 to 1 mux.demux	Switch	Routing of HDMI signals with low signal attenuation between PI3DPX1207 source and sink.	42-TQFN
PI3WVR13612	DP1.4/HDMI2.0 4 channel 2 to 1 mux/demux	Switch	Routing of DisplayPort/ HDMI signals with low signal attenuation between source and sink.	52-TQFN
PI3WVR31310A	DP/HDMI 1:3 De-Multiplexer Switch	Switch	Notebook, Monitor, Switch box or TV sink application	60-TQFN
PI5USB30213A	Type-C™ Dual Role Port Controller with USB3.1 Gen1 5Gbps Mux	Switch	Notebook, Mobile Phone Tablet, Docking Station	24-TQFN
PI5USB30216C	USB Plug Orientation (CC pins) Detector (with Active Low Enable)	Switch	Notebook, Tablet, Mobile Phone, Docking station	12-X2QFN
PI5USB30216D	USB Plug Orientation (CC pins) Detector (with Active High Enable)	Switch	Notebook, Tablet, Mobile Phone, Docking Station	12-X2QFN
PI5USB31213A	Type-C™ Dual Role Port Controller with USB3.1 Gen2 10Gbps Mux	Switch	Notebook, Mobile Phone Tablet, Docking Station	24-TQFN

† Available Q1 2019

SWITCHING SOLUTIONS

THE **DIODES** ADVANTAGE

High-speed signal routing is a key product strength of Diodes Incorporated; its Switch products provide the highest signal integrity and achieve the most efficient clear signal routing for data rates up to 12Gbps.

Our products are designed with the application in mind, customers that design for digital television, ultra mobility devices, infotainment, storage, set-top box, notebook and desktop PC applications benefit from our breadth of knowledge and design technology in routing high speed signals across PCB or cables.

Diodes offers a variety of voltage level translation ICs that provide mixed signal (I^2C, SMBus, MDIO, SPI) as well as multiple supply voltages (5V, 3.3V, 2.5V, 1.8V, 1.2V and 0.9V). These products are bi-directional and can cover most applications needed from 1-Bit to 32-Bit. Diodes has a broad I^2C production portfolio which includes I/O expander, I^2C Mux, I^2C Level Shifter and I^2C Hot Swap IC, support up to 4Mhz speed.

Type-C and Protocol Specific Switching Solutions

- Type-C Controllers and integrated with USB3.1 Gen1/Gen2 Mux and VCONN switch
- 1.8V and 3.3V, 2 and 4-Differential Channel, 2:1, 3:1, 4:1 Mux/DeMux, Crossbar signal switches
- PCIe 2.0/3.0, SAS2/SATA3, USB 3.1 Gen1/Gen2, 10GE ThunderBolt, DisplayPort, HDMI protocols
- 1.8V - 3.3V DDR3, DDR4, SSD, 14-bit, 2:1 Mux/DeMux signal switch
- 3.3V LVDS switches

Logic-Voltage Level Translator, I/O Expander and I^2C Mux Solution

- Provides 1-Bit to 16-Bit voltage level translator products to support diverse applications, with the lowest voltage rail 0.6V or highest speed data rate up to 280Mbps voltage level translators.
- Provides 2-Bit to 24-Bit I/O expander to cover a variety of applications in the market.
- Provides 2-Bit to 8-Bit I^2C Mux/Switch to support different inquiries in the market

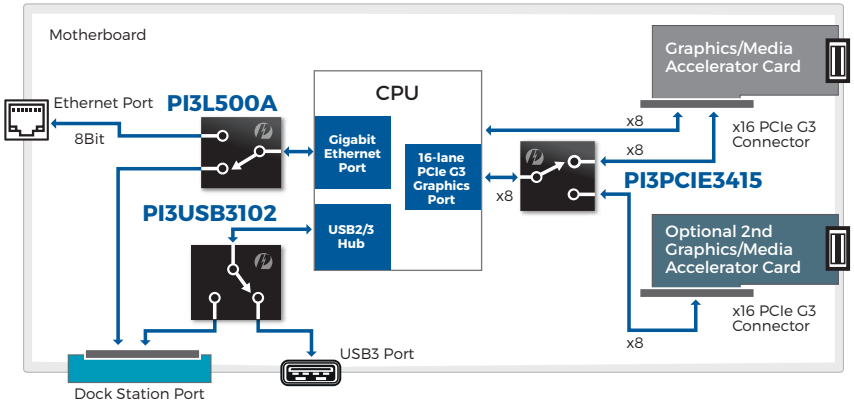
USB Charging Port Controller Solutions

- Supports host mode USB charging port controller
- Supports host mode USB charging port controller
- Automotive compliant versions with AEC-Q100 qualification for automotive applications

Bus Switch/Analog Switch Solutions

- Supports broadly bus switch solutions from 2 bits SPST to 32 bits SPST, with smaller package type.
- Supports complete analog switch solution from 1 bit SPST/SPDT to 4 bits SPDT, with tiny package type.
- Supports complete audio switch with ultra-low THD figure

PCIe Signal Switch Application



PCI Express/High-Speed (5-12Gbps) Signal Switches

1.0, 2.0, 3.0, 10GbE, DDR3, SATA3, SAS2/3, Thunderbolt, USB 3.1, Type-C

Part Number	Description	Voltage (V)	Data Rate (Gbps)	Diff. Channel	Package Dimensions (mm)	Package(s)
PI2PCIE2212	PCIe 2.0/USB 3.0, Bi-directional Differential 2:1 with single control	1.8	5	2	3.5 x 5.5 x 0.84	28-TQFN
PI2PCIE2214	PCIe 2.0/USB 3.0, 1-lane Bi-directional Differential 4:1	1.8	5	2	3.5 x 9 x 0.84	42-TQFN
PI2PCIE2412	PCIe 2.0/USB 3.0, Bi-directional Differential 2:1 with single enable	1.8	5	4	3.5 x 9 x 0.84	42-TQFN
PI2PCIE2422	PCIe 2.0/USB 3.0 Bi-directional Differential 2:1 with single enable and bypass mode	1.8	5	8	3.5x 9 x 0.84	42-TQFN
PI2PCIE2442	PCIe 2.0/USB 3.0, Bi-directional Differential 2:2 exchange, single control	1.8	5	8	3.5 x 9 x 0.84	42-TQFN
PI3PCIE2215	PCIe 2.0/USB 3.0, Bi-directional Differential 2:1, with single control	3.3	5	2	3.5 x 5.5 x 0.84	28-TQFN
PI3PCIE2415	PCIe 2.0/USB 3.0, 2-Lane Differential 2:1Mux, single enable	3.3	5	4	3.5 x 9 x 0.84	42-TQFN
PI3PCIE2612-A	PCIe 2.0/USB 3.0/ DisplayPort (6-Channel), ATX pinout	3.3	5	6	3.5 x 9 x 0.84	56-TQFN
PI3PCIE3412A	PCIe 3.0/USB 3.0, 2-lane, Differential 2:1 Mux/DeMux single enable	3.3	10	4	5 x 11 x 0.8 3.5 x 9 x 0.84	42-TQFN
PI3PCIE3415A	PCIe 3.0/USB 3.0, 2-lane, Differential 2:1 Mux/DeMux single enable	3.3	10	4	5 x 11 x 0.8 3.5 x 9 x 0.84	42-TQFN
PI3PCIE3212	PCIe 3.0/USB 3.0, 1-lane, Differential 2:1 Mux/DeMux single enable	3.3	10	2	2.5 x 4.5 x 1	20-QFN
PI3PCIE3242	PCIe 3.0/USB 3.0, 1-lane (2-Channel), Differential 2 lane exchange (2x2 matrix) switch. 3.3V	3.3	8	4	2.5 x 4.5 x 0.8	30-TQFN
PI3PCIE3413	PCIe 3.0/USB 3.0, 2-lane, Differential 3:1 Mux/DeMux	3.3	8	4	3.5 x 9 x 0.84	42-TQFN
PI3PCIE3422	PCIe 3.0/USB 3.0, 2-Lane (4-Channel), Differential 2:1 Mux/ DeMux with Bypass.	3.3	8	4	3.5 x 9 x 0.84	42-QFN
PI3PCIE3442	PCIe 3.0/USB 3.0, 2-lane (4-Channel), Differential 2 lane exchange (2x2 matrix) switch.	3.3	8	8	3 x 6 x 0.8 3.5 x 9 x 0.84	40-QFN
PI3DBS3224	3.3V High Speed 2:4 Differential Mux/Demux	3.3	1	4	3 x 3 x 0.8	20-TQFN
PI3DBS12212A	12Gbps, 1-lane (2-channel), Differential 2:1 Mux/DeMux. 3.3V	3.3	12	2	2.5 x 4.5 x 1	20-TQFN
PI3DBS12412A	12Gbps, 2-lane (4-channel), Differential 2:1 Mux/DeMux. 3.3V	3.3	12	4	3.5 x 9.0 x 0.8, 3.0 x 6.0 x 0.75	42-TQFN, 40-TQFN
PI3DBS16212	20Gbps, 1-lane (2-channel), Differential 2:1 Mux/DeMux. 3.3V	3.3	20	2	2.5 x 4.5 x 0.85, 2 x 2 x 0.35	TQFN, X2QFN
PI3DBS16412	20Gbps, 2-lane (4-channel), Differential 2:1 Mux/DeMux. 3.3V	3.3	20	4	3 x 6 x 0.75, 3.5 x 9 x 0.75	TQFN, TQFN
PI3DBS16213	20Gbps, 1-lane (2-channel), Differential 3:1 Mux/DeMux. 3.3V	3.3	20	2	2.5 x 4.5 x 0.75, 2 x 4 x 0.45	TQFN, X1QFN
PI3DBS16213	20Gbps, 2-lane (4-channel), Differential 3:1 Mux/DeMux. 3.3V	3.3	20	4	3.5 x 9 x 0.75	TQFN

USB 2.0/3.0 Signal Switches

Part Number	Description	Voltage (V)	Differential Channels	Package Dimensions (mm)	Package(s)
PI2USB3212	5.0 Gbps USB 3.0 Compatible Signal Switch	1.5, 1.8	2	3.5 x 5.5 x 0.84	28-TQFN
PI2USB4122	1.8V USB 3.0, 4:1 Mux/DeMux	1.8	1	3.5 x 9 x 0.84	42-TQFN
PI3USB14-A	3.3V, 2-Channel, 4:1 Mux USB 2.0 Switch	3	1	5 x 4.4 x 1.20	16-TSSOP, 20-TQFN
PI3USB42	Dual SPDT for USB 2.0 HS Compliance	3.3	0	1.4 x 1.8 x 0.50	10-UQFN
PI3USB102G	SPDT for USB 2.0 HS Compliance and Flow Through Pinout with 5V protection	3.3	1	1.3 x 1.6 x 0.75	10-TQFN
PI3USB102J	Dual SPDT for USB 2.0 HS Compliance and Flow Through Pinout with 5V protection	3.3	1	1.3 x 1.6 x 0.75	10-TQFN
PI3USB103	SPST USB 2.0 Switch with Back Drive Support and MHL Switching Support	3.3	1	1.4 x 1.8 x 0.55 1.3 x1.6 x 0.80	10-TQFN
PI3USB221A	High-Speed USB 2.0 1:2 Multiplexer/DeMultiplexer Switch with Signal Enable	3.3	1	1.5 x 2 x 0.6	UQFN-10, UDFN-10
PI3USB221E	High-Speed USB 2.0 1:2 Multiplexer/DeMultiplexer Switch with Signal Enable	3.3	1	3 x 3 x 0.6	UQFN-10, UDFN-10
PI3USB223	USB 2.0 and Audio Switch	3.3	2	1.4 x 1.8 x 0.55	10-UQFN
PI3USB302-A	2:1 Mux/DeMux 3.3V USB 3.0 Switch	3.3	2	2.5 x 4.5 x 1	20-TQFN
PI3USB3102	USB 3.0 and USB 2.0 Combo Switch	3.3, 5.0	4	3 x 6 x 0.8	32-TQFN
PI3USB3102Q†	Automotive Compliant USB 3.0 and USB 2.0 Combo Switch	3.3, 5.0	4	3 x 6 x 0.8	32-TQFN
PI3USB9281C	USB 2.0 Port Protection with Charger Detection	3.3, 5.0	1	2.06 x 1.56 x 0.5 3 x 4 x 0.5	15-CSP, 20-UQFN
PI3USB30532	3.3V USB 3.0/DP1.2 6:4 Matrix Switch	3.3	6	3 x 6 x 0.8	40-TQFN
PI3USB31532	USB 3.1 Gen 2/Display Port 1.3 Crossbar Switch for Type-C	2.7-5.5	6	3 x 6 x 0.8	40-TQFN
PI5USB30213	USB 3.1 Gen 1 (5Gbps) SuperSpeed Mux/DeMux Switch with I^2C Control	2.7-5.5	2	2 x 4 x 0.45	24-X1QFN
PI5USB30216C	USB Plug Orientation (CC pins) Detector (with Active Low Enable)	2.7-5.5	N/A	1.6 x 1.6 x 0.40	12-X2QFN
PI5USB30216D	USB Plug Orientation (CC pins) Detector (with Active High Enable)	2.7-5.5	N/A	1.6 x 1.6 x 0.40	12-X2QFN
PI5USB31213	USB 3.1 Gen 2 (10Gbps) SuperSpeed Mux/DeMux Switch with I^2C Control	2.7-5.5	2	4 x 2 x 0.50	24-X1QFN

LAN Switches

Part Number	Description	Voltage (V)	Package Dimensions (mm)	Package(s)
PI3L110	Quad 2:1 Mux (Fast Ethernet)	3.3	4.4 x 5 x 1.2 , 3.9 x 4.9 x 1.9	16-TSSOP, 16-QSOP
PI3L500-A	8-Channel 2:1 Mux/Gigabit Ethernet	3.3	5 x 11 x 0.8	56-TQFN
PI3L720	8-Channel 2:1 Mux/Gigabit Ethernet	3.3	3.5 x 9 x 0.80	42-TQFN

DDR 3.0/4.0 SSD Signal Switches

Part Number	Description	Voltage (V)	Single Ended Channels	Package Dimensions (mm)	Package(s)
PI2DDR3212	DDR3, 14 Channel, Differential 2:1 Mux/DeMux 1.5V or 1.8V	1.5, 1.8	14	4.5 x 4.5 x1.1 3.5 x 9 x 0.8	48-TFBGA 52-TQFN
PI2SSD3212	1.35V/ 1.5V/ 1.8V 14 Channel, 2:1 SSD Switch	1.35, 1.5, 1.8	14	4.5 x 4.5 x 1.1 3.5 x 9 x 0.8	48-TFBGA 52-TQFN

LVDS Switch

Part Number	Description	Voltage (V)	Single Ended Channels	Signal Type	Configuration	Type	Package
PI3LVD512	5-Differential Channel 2:1 Mux/DeMux for LVDS Signals	3.3	10	Differential and Single Ended	Mux: 5 Differential Channel, 2:1	SPDT	56-TQFN

† Available Q1 2019

Gunning Transceiver Logic (GTL)

Part Number	Description	Analog/ Digital	Configuration	Signal Type	Configuration	Package(s)
PI4GTL2002	2-Channel GTL Level Shifter and Transceiver	Digital	GTL Level shifter, 2ch	Single Ended	0.8V/5.5V	8-MSOP 8-SOIC 8-TDFN
PI4GTL2014	4-Channel GTL Level Shifter and Transceiver	Digital	GTL Level shifter 4ch	Signal End	0.5/3.3	14-TSSOP
PI4GTL2034	4-Channel GTL Level Shifter and Transceiver with buffer	Digital	GTL Level shifter 4ch	Signal End	0.5/3.3	14-TSSOP

LVDS Transceiver/Drivers/Receivers (Low Voltage Differential Signaling)

Part Number	Description	Drive Capability	Signal Converter	Bits Needed	Max Frequency (Mbps)	Package(s)
PI90LV01	SOTiny Single LVDS Driver	4mA	LVTTL to LVDS	1	660	5-SOT23
PI90LV02	SOTiny Single LVDS Receiver	N/A	LVDS to LVTTL	1	400	5-SOT23
PI90LV027A	Dual LVDS Driver	4mA	LVTTL to LVDS	2	400	8-SOIC
PI90LV028A	Dual LVDS Receiver	N/A	LVDS to LVTTL	2	400	8-SOIC
PI90LV031A	Quad LVDS Driver (EN)	4mA	LVTTL to LVDS	4	400	16-TSSOP, 16-SOIC
PI90LV032A	Quad LVDS Receiver (EN)	N/A	LVDS to LVTTS	4	400	16-TSSOP, 16-SOIC
PI90LV047A	Quad Flow through Driver	4mA	LVPECL or LVDS to LVDS	4	660	16-TSSOP
PI90LV048A	Quad Flow through Receiver	N/A	LVDS to LVTTS	4	660	16-TSSOP
PI90LV179	Single Transceiver	4mA	LVTTL and/or LVDS to LVTTL and/or LVDS	1	660	8-SOIC
PI90LV9637	Dual LVDS Receiver	N/A	LVDS to LVTTS	2	660	8-SOIC
PI90LVT386	16-Wide LVDS Receiver w/Integrated Termination	N/A	LVDS to LVTTS	16	660	64-TSSOP

IO Expanders

Part Number	Description	Analog/ Digital	Signal Type	Voltage (V)	Package(s)
PI4IOE5V9554	8-bits IO Expander	Digital	Single Ended	2.2/5	16-TSSOP, 16-TDFN
PI4IOE5V9554A	8-bits IO Expander	Digital	Single Ended	2.2/5	16-TSSOP, 16-TDFN
PI4IOE5V9555	16-bits IO Expander	Digital	Single Ended	2.2/5	24-TSSOP, 24-TDFN
PI4IOE5V9538	8-bits IO Expander	Digital	Single Ended	2.2/5	16-TSSOP, 16-TDFN
PI4IOE5V9539	16-bits IO Expander	Digital	Single Ended	2.2/5	24-TSSOP, 24-TDFN
PI4IOE5V9535	16-bits IO Expander	Digital	Single Ended	2.2/5	24-TSSOP, 24-TDFN
PI4IOE5V9536	4-bits IO Expander	Digital	Single Ended	2.2/5	8-MSOP, 8-SOIC, 8-TDFN
PI4IOE5V9537	4-bits IO Expander	Digital	Single Ended	2.2/5	10-MSOP
PI4IOE5V9521	2-bits IO Expander	Digital	Single Ended	2.2/5	8-UDFN
PI4IOE5V9522	4-bits IO Expander	Digital	Single Ended	2.2/5	10-MSOP
PI4IOE5V9673	16-bits IO Expander with 1MHz I^2C	Digital	Single Ended	2.2/5	24-TSSOP, 24-TDFN
PI4IOE5V9557	8-bits IO expander with 1MHz I^2C	Digital	Single Ended	2.2/5	16-TSSOP, 16-TDFN
PI4IOE5V9570	4-bits IO expander with 1MHz I^2C	Digital	Single Ended	2.2/5	8-MSOP, 8-UDFN
PI4IOE5V9520	2-bits IO Expander	Digital	Single Ended	2.3/5.5	8-UQFN
PI4IOE5V6408	Low Voltage 8-bits IO Expander	Digital	Single Ended	1.65/4.0	16-UQFN
PI4IOE5V6416	Low Voltage 16-bits IO Expander	Digital	Single Ended	1.65/5.5	24-TSSOP, 24-TQFN
PI4IOE5V96224	24-bits IO Expander	Digital	Single Ended	2.3/5.5	32-TQFN
PI4IOE5V96248	48-bits IO Expander	Digital	Single Ended	2.3/5.5	56-TQFN

I²C Mux/Switches

Part Number	Description	Analog/ Digital	Configuration	Signal Type	Voltage (V)	Package(s)
PI4MSD5V9540B	2-Channel I²C/SMBus Bus Multiplexer	Digital	Multiplexer, 2-Channel 2:1	Single Ended	1.65/5.5	8-MSOP, 8-TDFN
PI4MSD5V9542A	2-Channel I²C/SMBus Bus Multiplexer	Digital	Multiplexer, 2-Channel 2:1	Single Ended	1.65/5.5	14-SOIC, 14-TSSOP
PI4MSD5V9543A/B	2-Channel I²C/SMBus Bus Switch	Digital	Switch, 2-Channel, 2:1	Single Ended	1.65/5.5	14-SOIC, 14-TSSOP
PI4MSD5V9544A	4-Channel I²C/SMBus Bus Mux	Digital	Multiplexer, 4-Channel 2:1	Single Ended	1.65/5.5	20-TSSOP
PI4MSD5V9545A/B/C	4-Channel I²C/SMBus Bus Switch w/Interrupt	Digital	Switch, 4-Channel, 2:1	Single Ended	2.2/5	20-SOIC, 20-TSSOP
PI4MSD5V9546A	4-Channel I²C/SMBus Bus Switch with RESET	Digital	Switch, 4-Channel, 2:1	Single Ended	2.2/5	24-TSSOP, 24-TDFN
PI4MSD5V9547	8-Channel I²C/SMBus Bus Mux	Digital	Multiplexer, 8-Channel, 2:1	Single Ended	1.65/5.5	24-TSSOP, 24-TQFN
PI4MSD5V9548A	8-Channel I²C/SMBus Bus Switch with RESET	Digital	Switch, 8-Channel, 2:1	Single Ended	2.2/5	24-TSSOP, 24-TDFN
PI4MSD5V9646	4-Channel I²C/SMBus Bus Switch w/Buffer	Digital	Buffered 4-Channel I²C Bus Switch	Single Ended	2.2/5	24-TSSOP, 24-TQFN

Voltage Level Translators

Part Number	Description	Signal Type	Channels	Translation (V)	Auto Sensing	Signal Buffer	Package(s)
PI4ULS3V302	2-Bit Push Pull, 140Mbps, 0.85V to 2.7V, 1.35V to 3.6V, Bi-directional ULS	Push Pull	2	0.85/2.5 to 1.35/3.6	Yes	N/A	8-UDFN, 8-MSOP
PI4ULS3V502	2-Bit Push Pull, 280Mbps, 0.85V to 2.7V, 1.35V to 3.6V, Bi-directional ULS	Push Pull	2	0.85/2.5 to 1.35/3.6	Yes	N/A	8-UDFN, 8-MSOP
PI4ULS5V102	2-Bit Push Pull, 1.2V to 5.5V, Bi-directional ULS	Push Pull	2	1.2 to 5.5	Yes	N/A	8-CSP, 8-MSOP
PI4ULS5V201	1-Bit Open Drain/Push Pull, 1.2V to 5.5V, Bi-directional ULS	Open Drain/ Push Pull	1	1.2 to 5.5	Yes	N/A	SOT23-6, 8-UDFN
PI4ULS5V202	2-Bit Open Drain/Push Pull, 1.2V to 5.5V, Bi-directional ULS	Open Drain/ Push Pull	2	1.2 to 5.5	Yes	N/A	8-UDFN, 8-MSOP
PI6ULS5V9306	2-Bit I²C Bus/SMBus/MDIO, less 1.5ns propagation delay, 0.6V to 5V	Open Drain/ Push Pull	2	0.6 to 5	Yes	N/A	8-USOP, 8-MSOP, 8-TDFN
PI6ULS5V9509	1.0V to 5.5V, 2-Bit Level Translating I²C-Bus/SMBus Repeater	Open Drain	2	1.0/VCCB-1 to 3/5.5	Yes	Yes	8-UQFN, 8-MSOP, 8-SOIC
PI6ULS5V9515A	2.3V to 3.6V, 2-Bit I²C Bus/SMBus Repeater	Open Drain	2	1.8 to 5.5	Yes	Yes	8-TDFN, 8-MSOP, 8-SOIC
PI6ULS5V9517A	0.8V to 5.5V, 2-Bit Level Translating I²C Bus/SMBus Repeater	Open Drain	2	0.8/5.5 to 2.2/5.5	Yes	Yes	8-TDFN, 8-MSOP, 8-SOIC
PI6ULS5V9617A	0.8V to 5.5V, I²C Bus Fast Mode+/SMBus Repeater w/ 540pF Capacitance	Open Drain	2	0.6/5.5 to 2.2/5.5	Yes	Yes	8-TDFN, 8-MSOP
PI4ULS5V104	4-Bit Push Pull, 1.2V to 5.5V, Bi-directional ULS	Push Pull	4	1.2 to 5.5	Yes	N/A	12-CSP, 14-TQFN
PI4ULS3V204	4-Bit Open Drain/Push Pull, 1.1V to 3.6V, Bi-directional ULS	Open Drain/ Push Pull	4	1.1 to 3.6	Yes	N/A	14-TSSOP 14-TQFN 12-CSP
PI4ULS3V304	4-Bit Push Pull, 140Mbps, 0.85V to 2.7V, 1.35V to 3.6V, Bi-directional ULS	Push Pull	2	0.85/2.5 to 1.35/3.6	Yes	N/A	12-UQFN

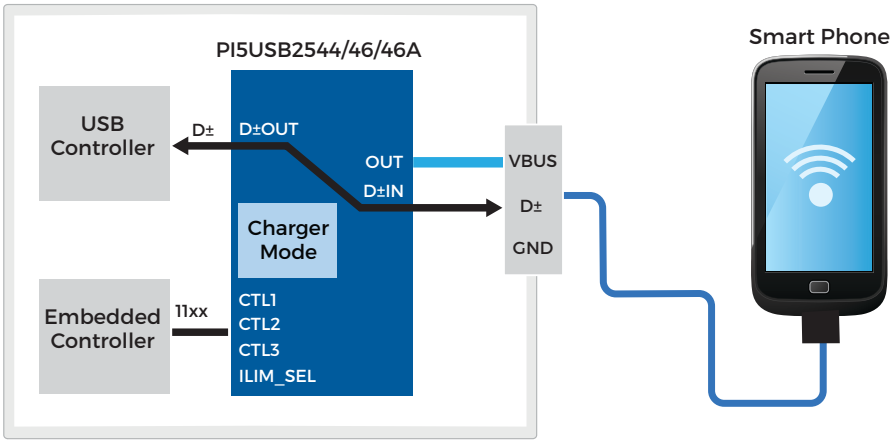
Voltage Level Translators

Part Number	Description	Signal Type	Channels	Translation (V)	Auto Sensing	Signal Buffer	Package(s)
PI4ULS3V504	4-Bit Push Pull, 280Mbps, 0.85V to 2.7V, 1.35V to 3.6V, Bi-directional ULS	Push Pull	2	0.85/2.5 to 1.35/3.6	Yes	N/A	12-UQFN
PI6ULS5V9627A	4-Channel, 0.8V to 5.5V, 4-Bit Level Translating I²C Bus FM+/SMBus Repeater	Open Drain	4	0.6/5.5 to 2.2/5.5	Yes	Yes	16-QSOP, 16-TQFN
PI3VT3245-A	8-Bit, 2-port, 3.3V to 2.5V / 2.5V to 1.8V, Low Voltage Translator	Push Pull	8	3.3/2.5 to 2.5/1.8	N/A	N/A	20-QSOP, 20-TSSOP
PI3VT32X245-A	16-Bit, 2-port, 3.3V to 2.5V / 2.5V to 1.8V, Low Voltage Translator	Push Pull	16	3.3/2.5 to 2.5/1.8	N/A	N/A	40-BQSOP
PI6ULS5V9511A	Hot Swappable I²C Bus/SMBus Buffer	Single Ended	2	2.5/5 to 2.5/5	Yes	Yes	8-SOIC, 8-MSOP, 8-UDFN

USB BC1.2 Charger

Part Number	Automotive Compliant – Supports PPAP Documentation	Description	Analog or Digital	Voltage (V)	Lanes	Features
PI5USB2544	–	USB Charging Port Controller and Load Detection Power Switch	Mixed Signal	5	1	Controller + Power Switch, charging and data transfer
PI5USB2544A	–	USB Charging Port Controller and Load Detection Power Switch	Mixed Signal	5	1	Supports Apple 2.4A; p2p to PI5USB2544,
PI5USB2546	PI5USB2546Q	USB Charging Port Controller and Load Detection Power Switch	Mixed Signal	5	1	Controller + Power Switch, charging and data transfer
PI5USB2546A	PI5USB2546AQ	USB Charging Port Controller and Load Detection Power Switch	Mixed Signal	5	1	Supports Apple 2.4A; p2p to PI5USB2546,

USB Charger Solution in a Smartphone Application



Bus Switches

Part Number	Description	Type	No. of Channels	Voltage (V)	Package(s)
PI3B Series - 3.3V Bus Switch/Mux with Ultra Low Quiescent Power, Rail-to-Rail					
PI3B3125	3.3V 4-Bit Bus Switch with Individual Enable (Active Low)	SPST	4	3.3	Q16-QSOP, 14-SOIC, 14-TSSOP
PI3B3126	3.3V 4-Bit Bus Switch with Individual Enable (Active High)	SPST	4	3.3	16-QSOP, 14-TSSOP
PI3B3244	3.3V 8-Bit Bus Switch (FCT244 Pinout)	SPST	8	3.3	20-TSSOP, 20-QSOP
PI3B3384	3.3V, 2 ports, 10-bit Bus switch	SPST	10	3.3	24-TSSOP
PI3B3861	3.3V 10-Bit Bus Switch (FCT861)	SPST	10	3.3	24-QSOP
PI3B32X245	3.3V 16-Bit Bus Switch	SPST	16	3.3	40-BQSOP
PI3B32X384	3.3V 20-Bit Bus Switch	SPST	20	3.3	48-BQSOP
PI3B34X245	3.3V 32-Bit Bus Switch	SPST	32	3.3	80-BQSOP
PI3B3251	3.3V 8:1 Multiplexer/Demultiplexer	Mux: 8:1	1	3.3	16-QSOP, 16-TSSOP
PI3B3253	3.3V Dual 4:1 Multiplexer/Demultiplexer	Mux: 4:1	2	3.3	16-UQFN
PI3B3257	3.3V Quad 2:1 Multiplexer/Demultiplexer	Mux: 2:1	4	3.3	16-UQFN
PI3B33X257	3.3V 24:12 Mux/DeMux Bus Switch	Mux: 24:12	1	3.3	48-BQSOP
PI3C/PI3VT Series - 2.5V/3.3V Bus Switch/Mux with High-Bandwidth (> 400MHz), Hot-Insertion, Rail-to-Rail					
PI3C3305	2.5V/3.3V, High-BW, 2-Bit, Bus Switch with Individual High Enables	SPST	2	2.5/3.3	8-MSOP, 8-TSSOP
PI3C3306	2.5V/3.3V, High-BW, 2-Bit, Bus Switch with Individual Low Enables	SPST	2	2.5/3.3	8-MSOP, 8-TSSOP
PI3C3125	2.5V/3.3V, High-BW Bus Switch, 4-Bit, with Individual Enables	SPST	4	2.5/3.3	14-SOIC, 14-TSSOP, 16-TDFN
PI3C3126	2.5V/3.3V, High-BW Bus Switch, 4-Bit, with High Enables	SPST	4	2.5/3.3	16-QSOP, 14-TSSOP
PI3C3245	2.5V/3.3V, High-BW Bus Switch, 8-Bit, Hot Insertion	SPST	8	2.5/3.3	20-QSOP
PI3C3384	2.5V/3.3V, High-BW Bus Switch, 10-Bit, Hot Insertion	SPST	10	2.5/3.3	24-QSOP
PI3C3861-A	2.5V/3.3V, High-BW, 10-Bit Bus Switch (FCT861 Pinout)	SPST	10	2.5/3.3	24-QSOP
PI3C32X245	2.5V/3.3V, High-BW Bus Switch, 16-Bit, Hot Insertion	SPST	16	2.5/3.3	40-BQSOP
PI3C32X384	2.5V/3.3V, High-BW Bus Switch, 20-Bit, Hot Insertion	SPST	20	2.5/3.3	48-BQSOP
PI3C34X245	2.5V/3.3V, High-BW Bus Switch, 32-Bit, Hot Insertion	SPST	32	2.5/3.3	80-BQSOP
PI3VT3245-A	8-Bit, High-BW Bus Switch, with Low Voltage Translator	SPST	8	2.5/3.3	20-QSOP, 20-TSSOP
PI3VT32X245-A	16-Bit, High-BW Bus Switch with Low Voltage Translator	SPST	16	2.5/3.3	40-BQSOP

Bus Switches (continued)

Part Number	Description	Type	No. of Channels	Voltage (V)	Package(s)
PI3CH Series - 1.8V/2.5V/3.3V Bus Switch/Mux with High-Bandwidth (> 500MHz), Hot-Insertion, Beyond Rail-to-Rail					
PI3CH3305	2-Bit Bus Switch, Enable High, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	2	1.8/2.5/3.3	8-MSOP
PI3CH200	2-Bit Bus Switch, Enable Low. 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	2	1.8/2.5/3.3	8-TSSOP
PI3CH400	4-Bit Bus Switch, Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	4	1.8/2.5/3.3	14-TSSOP, 14-QFN
PI3CH401	4-Bit Bus Switch, Enable High, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	4	1.8/2.5/3.3	14-TSSOP
PI3CH3244	8-Bit Bus Switch, 2-Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	8	1.8/2.5/3.3	20-TSSOP, 20-TQFN
PI3CH800	8-Bit Bus Switch, Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	8	1.8/2.5/3.3	20-QSOP, 20-TSSOP, 20-TQFN
PI3CH3345	8-Bit Bus Switch, 2-Enable High or Low, 1.8V/2.5V/3.3V, Hot Plug	SPST	8	1.8/2.5/3.3	20-TSSOP, 20-TQFN
PI3CH1010	10-Bit Bus Switch, Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	10	1.8/2.5/3.3	24-TSSOP
PI3CH1000	10-Bit Bus Switch, 2-Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	10	1.8/2.5/3.3	24-TSSOP
PI3CH1012	10-Bit Bus Switch, 2-Enable High and Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	SPST	10	1.8/2.5/3.3	24-QSSOP
PI3CH360	3-Channel 2:1 Mux/DeMux, Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	Mux: 2:1	3	1.8/2.5/3.3	16-TSSOP
PI3CH480	4-Channel 2:1 Mux/DeMux, Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	Mux: 2:1	4	1.8/2.5/3.3	16-UQFN
PI3CH281	2-Channel 4:1 Mux/DeMux, Enable Low, 1.8V/2.5V/3.3V, High BW, Hot Plug	Mux: 4:1	2	1.8/2.5/3.3	16-QSOP
PI5C Series - Bus Switch/Mux with Ultra Low Quiescent Power					
PI5C3305	2-Bit Bus Switch with Individual High Enables	SPST	2	5	8-MSOP, 8-TSSOP
PI5C3306	2-Bit Bus Switch with Individual Low Enables	SPST	2	5	8-TSSOP, 8-MSOP
PI5C16861	20-Bit Flow-through Bus Switch (2 Enables)	SPST	4	5	48-TSSOP
PI5C3125	4-Bit Bus Switch with Individual Low Enables	SPST	4	5	16-QSOP
PI5C3126	4-Bit Bus Switch with Individual High Enables	SPST	4	5	16-QSOP
PI5C3245	8-Bit, Bus Switch Buffers (FCT245 Pinout)	SPST	8	5	20-QSOP, 20-TSSOP
PI5C32X245	16-Bit Bus Switch	SPST	16	5	40-BQSOP
PI5C33x245	32-Bit Bus Switch	SPST	32	5	80-BQSOP
PI5C3251	8:1 Multiplexer/Demultiplexer	Mux: 8:1	1	5	16-QSOP
PI5C3253	Dual 4:1, Multiplexer/Demultiplexer Bus Switch	Mux: 4:1	2	5	16-QSOP, 16-SOIC, 16-TSSOP
PI5C3257	Quad 2:1, Multiplexer/Demultiplexer Bus Switch	Mux: 2:1	4	5	16-UQFN
PI5C3303	2:1 Mux/DeMux Bus Switch	Mux: 2:1	1	5	6-SOT23
PI5C3309	3:1 Mux/DeMux Bus Switch	Mux: 3:1	1	5	8-MSOP
PI5C33X257	24:12 Multiplexer/Demultiplexer Bus Switch	Mux: 24:12	1	5	48-BQSOP

Analog Switches

Part Number	Description	Type	No. of Channels	Voltage (V)	Package(s)
PI3A/PI5A Series - 1.65V/5V Low Voltage Analog Switch/Mux with Ultra Tiny Package, Ultra Low Quiescent Current, Rail-to-Rail					
PI3A114-A	1:4 Mux/DeMux with Low Threshold Control Inputs	SPDT	1	3.3	10-TQFN
PI3A223	Dual SPDT, w/ 0.5Ω R_{ON}	SPDT	2	3.3	10-UQFN
PI3A2268	Dual SPDT, w/ 0.45Ω R_{ON}	SPDT	2	3.3	10-UQFN
PI3A268C	Dual SPDT, w/ 0.6Ω R_{ON} and Negative Voltage Swing Support	SPDT	2	3.3	10-UQFN
PI3A288	Ultra Low THD (-100dB) Dual SPDT Audio Switch	SPDT	2	3.3	10-UQFN
PI3A412	Quad SPDT, w/ 0.45Ω R_{ON}	SPDT	4	3.3	16-TQFN
PI3A3899	High Speed, Dual DPDT Analog Switch	SPDT	4	3.3	16-TQFN
PI5A3167C	Single SPST low R_{ON} (0.8Ω) Analog Switch, Low Enable	SPST	1	5.5	5-SC70
PI5A3166	Single SPST low R_{ON} (0.8Ω) Analog Switch, High Enable	SPST	1	5.5	5-SC70
PI5A3157	UDFN 1mm x 1mm, Single SPDT Mux/DeMux Switch (R_{ON} 8Ω)	SPDT	1	5.5	6-SC70, 6-UDFN
PI5A4157	UDFN 1mm x 1mm, Single SPDT Mux/DeMux Switch (R_{ON} 0.8Ω)	SPDT	1	5.5	6-SC70, 6-UDFN
PI5A4599B	SOTiny Single SPDT Mux/DeMux Switch	SPDT	1	5.5	6-SC70
PI5A124	High Speed SPDT Analog Switch	SPDT	1	7	6-SOT23
PI5A3158B	Dual SPDT Mux/DeMux Switch (R_{ON} 8Ω), 350MHZ	SPDT	2	5.5	12-TDFN
PI5A4158	Dual SPDT Mux/DeMux Switch (R_{ON} 0.8Ω), 150MHZ	SPDT	2	5.5	12-TDFN
PI5A100	High Speed, Quad SPDT CMOS Analog Switch with Master Enable	SPDT	4	7	16-QSOP
PI5A392A	7V Quad SPST	SPST	4	7	16-QSOP
PI5C3384	2.5V/3.3V, 10-bit Bus Switch, Hot Insertion	SPST	10	2.5/3.3	24-QSOP, 24-TSSOP

DISPLAY/VIDEO SOLUTIONS

THE **DIODES** ADVANTAGE

The high data rates of today's display interface increase design complexity by leaving developers with tight jitter compliance margin on the length of PCB trace (or cable length) in designing reliable high-performance systems.

Diodes Incorporated's HDMI and DisplayPort active products can control input signals with equalization, output swing and pre-emphasis/de-emphasis (Limiting ReDriver), Flat Gain (Linear ReDriver) to compensate a variety of physical medium insertion loss on the display data signal path.

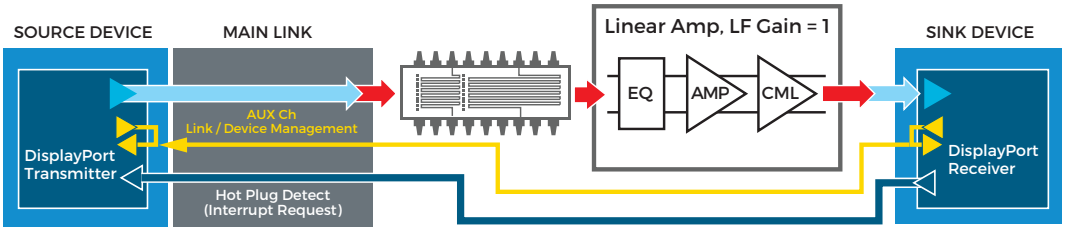
Display Signal Integrity Products:

- Complete technology portfolio: Linear/Limiting ReDrivers, Retimers (Jitter cleaner), Dual-mode DP Level Shifter
- Max Protocol Data rates support: 8.1Gbps (DP1.4), 6.0Gbps (HDMI2.0) and 10Gbps (DP-Alt)
- Diodes SiGe Linear ReDrivers double the jitter performance than conventional CMOS ReDriver products with latency-free, non-blocking channels for Receiver DFE support
- Limiting ReDrivers provide the lowest power consumption and higher EQ controls
- HDMI Retimer products available as a noisy source jitter cleaner, and re-clocking for long-reach PCB trace or cables

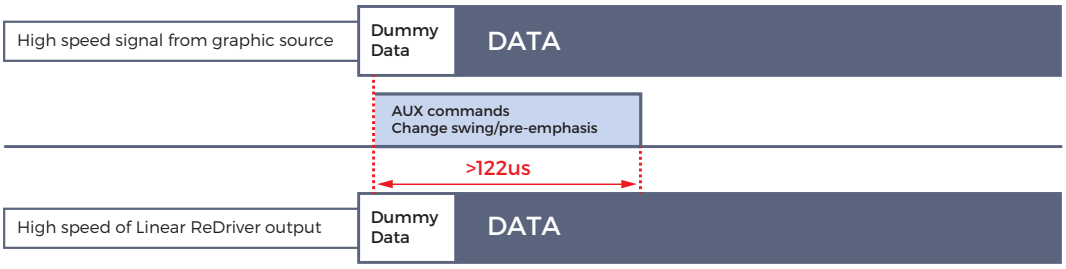
Display Switches:

- Active HDMI Switches, Splitters/DeMux Splitter (Replicator) combined with Diodes SI technology
- Passive WVR (Wide Voltage Range) low-power Switches for DP and HDMI protocols

DisplayPort Linear ReDriver

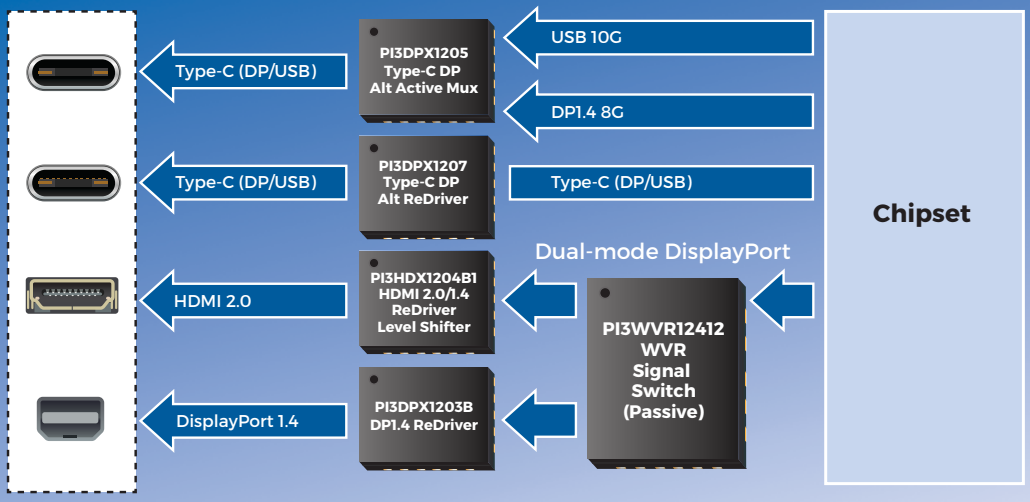


Latency-Free Linear ReDriver



DISPLAY/VIDEO SOLUTIONS

Source (Host)-Side Solutions - Notebook PC Application



DisplayPort ReDriver

Part Number	Function Description	Protocols	Data Rate (Gbps)	Port In/Out	# of Ch/Ports	Power Supply (V)	Package(s)
PI3DPX1203B	DP1.4 Linear ReDriver	DP1.4	8.1	1/1	4	3.3	42-TQFN
PI3DPX1202A	DP1.2 ReDriver	DP1.2	5.4	1/1	4	3.3, 3.3/1.2	48-TQFN
PI3DPX1207	Type-C DP Alt ReDriver	DP1.4, USB3.1 G2	8.1, 10	1/1	4	3.3	42-TQFN

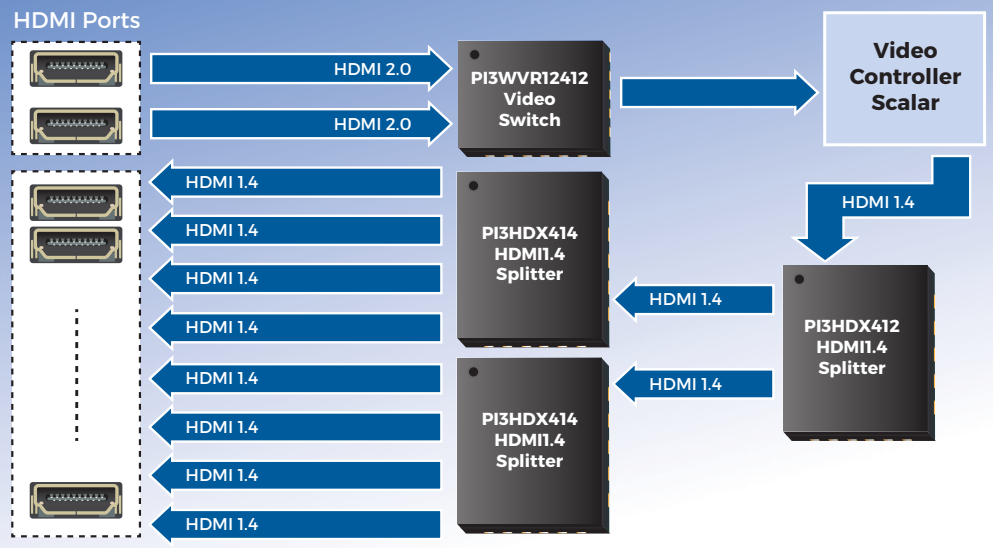
HDMI ReDrivers

Part Number	Function Description	Protocols	Data Rate (Gbps)	Port In/Out	# of Ch/Ports	Power Supply (V)	Package
PI3HDX1204B1	HDMI 2.0 ReDriver (Limiting)	HDMI 2.0	6	1/1	4	3.3	42-TQFN
PI3HDX1204E	HDMI 2.0 ReDriver (Linear)	HDMI 2.0	6	1/1	4	3.3	42-TQFN
PI3HDX511F	HDMI 1.4 ReDriver (Limiting)	HDMI 1.4	3.4	1/1	4	3.3, 1.5/3.3	42-TQFN
PI3VDP1431	DP++ Level Shifter with AUX listener	DP1.2++	3.4	1/1	4	3.3	42-TQFN

HDMI DeMux/Splitter

Part Number	Function Description	Protocols	Data Rate (Gbps)	Port In/Out	# of Ch/Ports	Power Supply (V)	Package
PI3HDX412BD	HDMI 1:2 Active DeMux/Splitter	HDMI 1.4	3.4	1/2	4	3.3	40-TQFN
PI3HDX414	HDMI 1:4 Active DeMux/Splitter	HDMI 1.4	3.4	1/4	4	3.3	80-LQFN

Sink (Device)-Side Solutions - Monitor/ Display Application



HDMI Switches

Part Number	Function Description	Protocols	Data Rate (Gbps)	Port In/Out	# of Ch/Ports	Power Supply (V)	Package
PI3HDX231	HDMI 3:1 Active Switch	HDMI 2.0	6	3/1	4	3.3	72-TQFN
PI3HDX621	HDMI 2:1 Active Switch	HDMI 1.4	3.4	1/4	4	3.3	48-LQFP

Type-C DP Alt Active Mux

Part Number	Function Description	Protocols	Data Rate (Gbps)	Port In/Out	# of Ch/Ports	Power Supply (V)	Package
PI3DPX1205	Type-C DP Alt Active Mux	DP 1.4, USB 3.1	8.1, 10	2/1	4, 2	3.3	42-TQFN

HDMI/DP Switches

Part Number	Description	Data Rate (Gbps)	In/Out	Lanes	Power Supply (V)	Package(s)
PI3WVR12612	2:1 DisplayPort / HDMI Video Switch	6	DP/HDMI 4-Lane	4	3.3	50-TFBGA 52-TQFN
PI3WVR12412	2:1 DisplayPort / HDMI Video Switch	6	DP/HDMI 4-Lane	4	3.3	42-TQFN
PI3WVR31310A	1:3 or 3:1 DP DeMux/Mux 3:1 HDMI Mux Video Switch	6	DP/HDMI 4-Lane	4	3.3	60-TQFN
PI3WVR31313A	DisplayPort / HDMI Video Switch, one active (DP to HDMI) output	6	DP/HDMI 4-Lane	4	3.3	60-TQFN

Analog VGA Switches

Part Number	Description	EQ Type	Single Ended Channels	Pins	Power Supply (V)	Package
PI3V713-A	VGA Switch 1.2 Mux/DeMux	Passive	7	32	3.3/ 5	32-TQFN
PI3VST01	VGA HPD Signal Generator SPST	Passive	1	8	3.3/ 5	8-MSOP

DIODES®
INCORPORATED

CORPORATE HEADQUARTERS AND AMERICAS SALES OFFICE
4949 Hedgcoxe Road
Suite 200
Plano, Texas 75024, USA
Tel: (+1) 972-987-3900
Email: inquiries@diodes.com

SILICON VALLEY OFFICE
1545 Barber Lane
Milpitas, California 95035, USA
Tel: (+1) 408-232-9100

EUROPE SALES OFFICE
Kustermann-Park
Balanstrasse 59, 8th Floor
D-81541 Munchen, Germany
Tel: (+49) 89-45-49-49-0
Email: inquiries-europe@diodes.com

ASIA SALES OFFICES
Email: inquiries-asia@diodes.com

DIODES-CHINA

SHANGHAI OFFICE
Room 3001-3002,
International Corporate City,
No. 3000 Zhongshan North Road,
Shanghai 200063, China
Tel: (+86) 21-5241-4882

SHENZHEN OFFICE
16th Floor Skyworth Semiconductor
Design Building East Wing,
No.18 Gaoxin South 4th Road,
Nanshan District,
Shenzhen 518057, China
Tel: (+86) 755-8828-4988

TAIWAN OFFICE
7F, No. 50, Min-Chuan Road
Hsin-Tien District
New Taipei City 23141,
Taiwan, R.O.C.
Tel: (+886) 2-8914-6000

DIODES-JAPAN
8F Humax Ebisu Bldg
1-1-1 Ebisu-Minami, Shibuya-ku
Tokyo 150-0022, Japan
Tel: (+81) 3-6871-9388

DIODES-KOREA
1601 ho, ParkView Tower
Jeongja 1 dong,
Bundang-gu, Seongnam-si,
Gyeonggi-do 463-811, Korea
Tel: (+82) 31-786-0434

For further information please visit www.diodes.com/contact-us

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