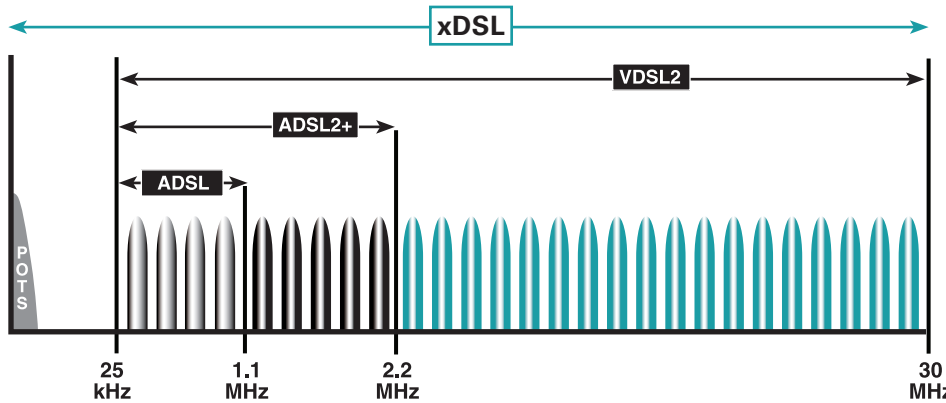
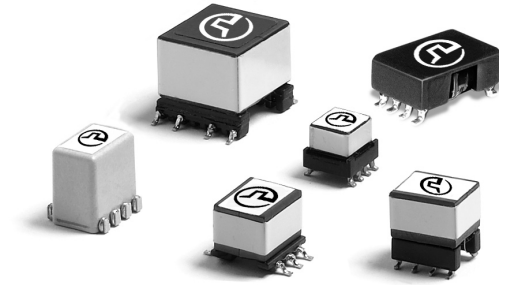


# xDSL & HPN PRODUCTS

Broadband has come a long way in the past few years. Pulse continues to lead the way with a broad range of components that enable twisted-pair copper, fiber and coaxial cable to deliver high-speed services to homes and businesses. Pulse components are also used in cable modems and the consumer electronics that provide home networking services.

Our high-performance transformers, inductors and splitter filter modules support ADSL, VDSL, VoIP, CO/CPE splitters, and home phoneline and power line networks. These transformers are designed to exceed ANSI and ETSI standards, and have excellent THD performance and small footprints. Surface mount models are available upon request.

Our splitter/filter modules are part of the SMART™ family, offering convenient and cost effective design solutions.



ADSL uses frequencies up to 1.1 MHz. But, later variations ADSL2+ and VDSL2 make use of a wider frequency band in order to achieve higher data rates. Use of these higher frequencies requires higher performance components.

## HOME NETWORKING PRODUCTS

Filters				
Part Number	Primary Application	Secondary Application	Isolation Voltage	Data Sheet
<b>CopperGate HPNA3 Chipset</b>				
B6104NL	HPNA	—	1500	B891
B6105NL	HPNA	—	1500	B891
B6106NL	HPNA	—	1500	B891
<b>Entropic: c.LINK™</b>				
C6039	MoCA®	—	—	C250

Transformers					
Part Number	Application	Turns Ratio	Inductance (µH MIN)	Isolation Voltage (V)	Data Sheet
PE-68629	UPA/PLC	1:1	40	3000	T606
B6080	HomePlug	1:1	250	2000	B805

## COMMON MODE CHOKES

For ADSL/VDSL <sup>1</sup>					
Part Number	Common Mode Attenuation (dB TYP)			Isolation Voltage (V <sub>RMS</sub> )	Data Sheet
	500 kHz	1 MHz	10 MHz		
B2005NL	45	47	43	1500	B902
B2013NL	45	47	43	1500	B902
BX8213NL	45	47	43	500	B829
B4001NL <sup>1</sup>	45	49	35	1500	B912
B4003NL <sup>1</sup>	45	49	35	1500	B912
BX4053NL <sup>2</sup>	45	49	35	1500	B912
PE-65885NL	40	51	38	500	T626
<b>30 kHz      1 MHz      2 MHz</b>					
BX8191NL	30	51	45	1500	B824
BX8192NL <sup>2</sup>	30	51	45	1500	B824

1. To reduce common mode noise from AM or HAM radio      2. Dual

## VDSL TRANSFORMERS

VDSL Hybrid Transformers					
Part Number	Insertion Loss (dB MAX)	Isolation Voltage (V <sub>RMS</sub> )	Impedance (Ω)		Data Sheet
			TX	RX	
100 kHz - 20 MHz		300 kHz - 30 MHz			
<b>Broadcom: BCM 6010 Chipset</b>					
B4008	—	0.50	2000	2:1	1:1 B925

## VDSL Line Transformers & Chipsets

Part Number	Inductance (µH ±10%)	Isolation Voltage (V <sub>RMS</sub> )	Turns Ratio TX	RX	Data Sheet
<b>General Use</b>					
B4004	—	1500	1CT:1CS	—	B975
B4006	—	3000	1:1	—	B975
B4023	—	3000	1:1CT	—	B975
<b>Broadcom: BCM 6315 Chipset</b>					
B4020	190	3000	1CT:1CT	—	B981
B4021	190	1500	1CT:1CT	—	B981
BX4055	190	1500	1:1	—	B981
BX4056	190	1500	1:1.16	—	B981
<b>Broadcom: VDSL2 BCM 6505 Chipset</b>					
BX4157L	420	1500	1:2	—	B894
BX4167L	100	1500	1:2	—	B894
<b>Conexant: VDSL2 Accelity Chipset</b>					
BX4131W	800	1500	2:1	—	B877
BX4120L	800	1500	1.1:1	—	B877
<b>Ikanos: SmartLeap Chipset</b>					
BX4052W <sup>1</sup>	1.30	1500	3:1	—	B831
BX4082W <sup>1</sup>	1.30	1500	3:1	—	B831

1. BX4052W supplementary insulation; BX4082W operational insulation per IEC 950 250 V<sub>RMS</sub>

SMT - Surface Mount Package

THT - Through Hole Package

# xDSL & HPN PRODUCTS

## VDSL TRANSFORMERS (continued)

VDSL Line Transformers & Chipsets					
Part Number	Inductance (µH ±10%)	Isolation Voltage (V <sub>RMS</sub> )	Turns Ratio TX	RX	Data Sheet
<b>Ikanos: VDSL Chipset</b>					
BX4154L	340	1500	1.5:1	—	B887
BX4185L	340	1500	1.86:1	—	B887
BX4187L	100	1500	1.86:1	—	B887
BX4197L	470	1500	1.86:1	—	B887
<b>Infineon: VDSL5000i and 6000i CO/CPE* Chipsets</b>					
BX4102W	2000	1500	4:3	—	B874
BX4104V	770	1500	1:1.16	—	B875
BX4107	800	1500	4:3	—	B876
<b>Infineon: VDSL2 Chipsets</b>					
BX4175WNL	270	1500	4:3	—	B875
<b>Metalink: VDSL Chipset</b>					
B4033	1000	1500	1:3	2:3	B998
B4034	1600	1500	1:3.5	2:3.5	B998
<b>Metalink: MTV9141 Chipset</b>					
B4064	1130	1500	1:3.6	2:3.6	B846
<b>Metalink: MTV9142 Chipset</b>					
BX4081W	280	1500	1:3	2:3.6	B846
<b>Texas Instruments TNETD8000 Chipset</b>					
B4020	190	3000	1CT:1CT	—	B981
B4021	190	1500	1CT:1CT	—	B981

VDSL Filter Solutions					
Part Number	Passband Frequency (dB MAX)	Insertion Loss (dB MIN)	Return Loss TX	Impedance (Ω) RX	Data Sheet
<b>Quadport CO Filter Modules for 2-band, 10Base-S Infineon Chipsets<sup>2</sup></b>					
BX4037 <sup>1</sup>	1 MHz–7.9 MHz	1.5	12	40 270	B809
BX4038 <sup>1</sup>	1 MHz–7.9 MHz	1.5	12	40 270	B809
<b>Single Port CPE Filter Modules for PEB22811/12/22 Infineon Chipsets<sup>3</sup></b>					
BX4039 <sup>4</sup>	1 MHz–7.9 MHz	1.0	12	40 270	B819
BX4040 <sup>4</sup>	1 MHz–7.9 MHz	1.0	12	40 270	B819
<b>Quadport CO Filter Modules for 4-band Plan 998 Infineon Chipsets<sup>1</sup></b>					
BX4041A	0.9 MHz–11.9 MHz	—	12	40 270	B832
BX4044	0.9 MHz–11.9 MHz	—	12	40 270	B832
<b>Single Port CPE Filter Modules for 4-band Plan 998 Infineon Chipsets<sup>2</sup></b>					
BX4042	0.13 MHz–11.9 MHz	—	12	40 270	B833
BX4045	0.13 MHz–11.9 MHz	—	12	40 270	B833

- BX4037** for ADSL over ISDN, **BX4038** for Smartphone applications
- Including** HPF splitter, hybrid transformer, TX & RX separation filters and common mode chokes
- Including** HPF splitter, hybrid transformer, TX & RX separation filters
- BX4039** for over ISDN, **BX4040** for Smartphone applications

## ADSL TRANSFORMERS

ADSL Transformers & Chipsets					
Part Number	Application*	Isolation Voltage (V <sub>RMS</sub> )	Turns Ratio Chip-Line	Inductance (µH ±10%)	Data Sheet
<b>Analog Devices: AD20msp910/AD20msp918 ADSL Chipsets</b>					
B2031	CO/CPE	1500	1:1	5000	B906
B2032	CO/CPE	1500	1:1	5000	B906
B2104	CO/CPE	1500	1:1.27	2000	B950
B2105	CO/CPE	1500	1:1.27	2000	B950
<b>Analog Devices: AD20msp930 ADSL Chipset</b>					
B2136	CO	1500	1:1.1	1750	B955
B2137 <sup>1</sup>	CO	1500	1:1.1	1750	B955
B2162 <sup>1</sup>	CO	1500	1:1.1	1750	B957
B2168 <sup>1</sup>	ADSL/ISDN CO	1500	1:1	100	B955
B2188	ADSL/ISDN CO	1500	1:1	100	B955
<b>Analog Devices: Eagle I &amp; Eagle II</b>					
BX2506J <sup>1</sup>	CPE	1500	1:2.29	1200	B840
<b>Broadcom: BCM6410/20 - ADSL Bladerunner Chipsets</b>					
BX2303WA <sup>1</sup>	ADSL/ISDN CO	1500	1:1.41	100	B811
BX2302WA <sup>1</sup>	CO	1500	1:1.41	410	B811
BX2619W <sup>1</sup>	CO	1500	1:2	420	B811
BX2644L <sup>1</sup>	CO	1599	1:2	420	B811
<b>Broadcom: BCM6335 and BCM6345</b>					
BX2483W <sup>1</sup>	CPE	1500	1:2	410	B847
<b>Broadcom: BCM6335 and BCM6338</b>					
BX2542L <sup>1</sup>	CPE	1500	1:4.25/1:1	400	B848
BX2606LNL <sup>1</sup>	ADSL/ISDN CPE	1500	1:4.25/1:1	100	B848
<b>Centillium: CT-L50SC04/CT-L50ST81, CT-L21SC08/CT-L41SC04 ADSL Chipsets</b>					
B2178 <sup>1</sup>	CO	1500	1:1	450	B979
B2189 <sup>1</sup>	CO/CPE	1500	1:1.8	450	B979
<b>Centillium: CT-L21ST30, CT-L22Sx15/30, CT-L4xSx15/30, CT-L5/L6xSx81 ADSL Chipsets</b>					
BX2353 <sup>1</sup>	CPE	1500	1:2.13	5000	B999
BX2358 <sup>1</sup>	CPE	1500	1:1	5000	B999
BX2511L <sup>1</sup>	CO	1500	1:0.9	1000	B862
BX2512J <sup>1</sup>	CO	1500	1:0.9	1000	B862

- When ordering Tape & Reel on SMT parts, add a "T" suffix to the part number.**
- Alternative** footprint options are on the data sheet.

ADSL Transformers & Chipsets					
Part Number	Application*	Isolation Voltage (V <sub>RMS</sub> )	Turns Ratio Chip-Line	Inductance (µH ±10%)	Data Sheet
<b>Centillium: Palladia CPT73X01 CPE ADSL Chipsets</b>					
BX2460 <sup>1</sup>	CPE	1500	1:2.5	5000	B828
BX2462 <sup>1</sup>	CPE	1500	1:1	5000	B828
<b>Centillium: CT-L53/63/73SC08 ADSL Chipsets</b>					
BX2347	CO	1500	1:1	850	B994
BX2348 <sup>1</sup>	CO	1500	1:1	850	B994
BX2380	CO	1500	1:1.8	850	B994
BX2349 <sup>1</sup>	CO	1500	1:1.8	850	B994
<b>Centillium: MAXIMUS ADSL Chipsets</b>					
BX2349 <sup>1</sup>	CO	1500	1:1.8	850	B994
BX2538L <sup>1</sup>	CO	1500	1:1.2	850	B839
<b>Conexant: ADSL G7000 DMT Chipset</b>					
BX2564W <sup>1</sup>	CO	1500	1:0.92	850	B867
B2139	CPE	1875	1:1	407	B958
<b>Conexant: Titanium Forte ADSL Chipsets</b>					
BX2367 <sup>1</sup>	CO	1500	1:2	474	B997
BX2369JB/WA <sup>1,3</sup>	CO	1500	1:1.41	474	B991
BX2372JB/WA <sup>1,3</sup>	CO	1500	1:1.15	474	B991
<b>Conexant: Jupiter, Saturn G16, G18, Octane ADSL Chipsets</b>					
B2414JB <sup>1,3</sup>	CO	1500	1:0.95	750	B991
<b>Conexant: Octane, G24 ADSL Chipsets with Intersil Drivers</b>					
B2517JB <sup>1</sup>	CO	1500	1:0.95	760	B836
BX2485L <sup>1</sup>	CO	1500	1:0.9	1000	B836
BX2575L <sup>1</sup>	CO	1500	1:0.9	1000	B864
<b>Conexant: Octane Plus ADSL Chipsets with Intersil Drivers</b>					
BX2511L <sup>1</sup>	CO	1500	1:0.9	1000	B862
BX2512J <sup>1</sup>	CO	1500	1:0.9	1000	B862

- When ordering Tape & Reel on SMT parts, add a "T" suffix to the part number.**

Continued on next page

\*CO - Central Office, CPE - Customer Premises Equipment

SMT - Surface Mount Package

THT - Through Hole Package

# xDSL & HPN PRODUCTS

## ADSL TRANSFORMERS *(continued)*

### ADSL Transformers & Chipsets *(continued)*

Part Number	Application*	Isolation Voltage (V <sub>RMS</sub> )	Turns Ratio Chip-Line	Inductance (μH ±10%)	Data Sheet
<b>Conexant: Octane, G24 ADSL Chipsets with Legerity Drivers</b>					
BX2510W <sup>1</sup>	CO	1500	1:0.408	750	B855
BX2516W <sup>1</sup>	CO	1500	1:0.408	1100	B855
BX2572W <sup>1</sup>	ADSL/ISDN CO	1500	1:0.408	100	B854
<b>Conexant: Viking and Café CPE ADSL Chipsets</b>					
BX2577L <sup>1</sup>	CPE	1500	1:4/1:2	700	B841
<b>Infineon: PEB22716 - GEMINAX ADSL Chipset</b>					
BX2274J <sup>1</sup>	CO	1500	1.33:1	1400	B812
BX2569L <sup>1</sup>	CO	1500	1.31:1	1400	B895
<b>Infineon: Amazon ADSL Chipset</b>					
BX2913LNL <sup>1</sup>	CPE	1500	1:4.2/1:2	1400	B889
BX2917LNL <sup>1</sup>	ADSL/ISDN CPE	1500	1:3/6/1:1.85	200	B889
<b>Texas Instruments: TNETD4000C ADSL Chipset</b>					
B2132 <sup>1</sup>	CO	1500	1:1.95	1500	B954
<b>Texas Instruments: TNETD4500x ADSL Chipset</b>					
B2243 <sup>1</sup>	CO	1500	1:2	400	B823
B2133 <sup>1</sup>	ADSL/ISDN CO	1500	1:2	75	B823
<b>Texas Instruments: AC5, AC6 Chipset</b>					
B2205 <sup>1</sup>	CO	1500	1:1.9	400 <sup>2</sup>	B985
BX2375 <sup>1</sup>	ADSL/ISDN CO	1500	1:1.9	92.5	B985
<b>Texas Instruments: AC7 CO Chipset</b>					
BX2513W <sup>1</sup>	CO	1500	1:1.11	400 <sup>2</sup>	B873
<b>Texas Instruments: AP5, AR5, and AU5 Chipsets</b>					
BX2361 <sup>1</sup>	CPE	1500	1:2	1500 <sup>2</sup>	B988
BT2361 <sup>1</sup>	CPE	1500	1:2	1500 <sup>2</sup>	B806
BX2382 <sup>1</sup>	CPE	1500	1:2	1500 <sup>2</sup>	B988
<b>Texas Instruments: AP7, AR7, and AU7 Chipsets</b>					
BX2479H	CPE	1500	1:2	1500	B834
BX2479W <sup>1</sup>	CPE	1500	1:2	1500	B834
BX2243H	ADSL/ISDN CPE	1500	1:2	400	B834

1. **When ordering Tape & Reel on SMT parts, add a "T" suffix to the part number.**
2. **±5%**
3. **Alternative footprint options are on the data sheet.**

## HDSL2/G.SHDSL

### Transformers

Part Number	Matched to:	Turns Ratio Chip-Line (±3%)	Inductance Line Side	Data Sheet
<b>Infineon Chipsets</b>				
B1093	PEB22622 PEF22623/24622 PEB22622	3.2:1:1	3.00	B993
B1063	PEF22623/24622	3.2:1:1	3.00	B993
BX1196L	Socrates	4.5:1	3.00	B888
BX1194W	PEB22622 PEF22623/24622	3.2:1:1	3.00	B835
<b>Conexant Chipsets</b>				
B1074B	Orion	1:5.4	3.00	B803

\*CO - Central Office, CPE - Customer Premises Equipment



G003.Y (6/11)

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## CUSTOMER PREMISE EQUIPMENT

### DSL Microfilters

Part Number	Specification	Region
Z-330PJ	ANSI T1.421	North America
Z-369LS	Anatel Approved	Latin America
Z-470P2J	ETSI TS 101 952-1-5	Europe

**NOTE:** See CPE section for additional products and applications.

SMT - Surface Mount Package

THT - Through Hole Package