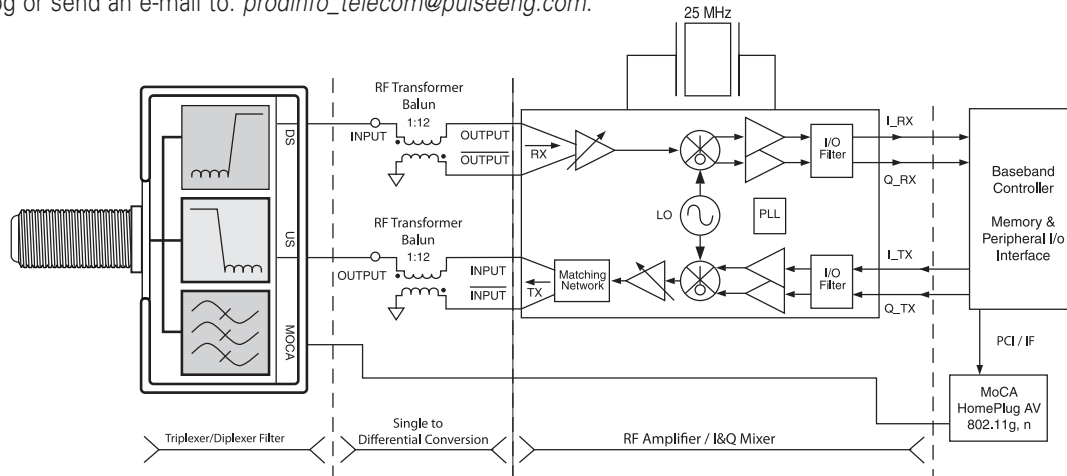




Pulse offers a comprehensive line of RF magnetic components for use in CATV/ Hybrid Fiber Coax applications for set-top boxes and gateway devices, for TELCO TV in gateway devices, and FTTP ONT (optical network termination) units as well as emerging in-home networking products. RF components are also used in medical and industrial devices and equipment.


Platforms consist of diplexer filters that can also include integrated F-connectors, transformers/baluns, single-stage filters, directional couplers and RF splitter/ combiners. Pulse provides both surface mount and through hole components that have minimal insertion loss and excellent return loss to ease the development and manufacturing of today's RF network equipment.

**NOTE:** RoHS versions of some of the products offered in this section are available. To order, add NL at the end of the part number. For more information, call and ask for "Broadband RF and Wireless Applications." Local telephone numbers are on the back cover of this catalog or send an e-mail to: [prodinfo\\_telecom@pulseeng.com](mailto:prodinfo_telecom@pulseeng.com).



## RF, BROADBAND, CATV, TELCO TV APPLICATIONS




### DIPLEX FILTERS with Integrated F-Connectors

| Part Number   | Low Pass (MHz) | High Pass (MHz) | Data Sheet |
|---|----------------|-----------------|------------|
| <b>DOCSIS System</b>  |                |                 |            |
|  |                |                 |            |
| C6026   | 5-44           | 58-860          | C236       |
| CX6026  | 5-44           | 58-860          | C236       |
| C6035   | 5-42           | 88-860          | C236       |
| C6036NL   | 10-55          | 90-770          | C236       |
| C6086NL   | 5-65           | 108-860         | C236       |


### MoCA IC Cross Reference

| IC House | RF Front End | Baseband Controller                  | Triplexer | Diplexer                               | RF Transformer Balun |
|----------|--------------|--------------------------------------|-----------|--|----------------------|
| Entropic | EN1010       | EN2x10<br>EN2x11<br>EN3x30<br>EN3x11 | C6113NL   | C6058<br>CX6155NL<br>C6131SNL<br>C6039 | CX2163LNL            |

### DIPLEX FILTERS with Integrated F-Connectors

| Part Number   | Low Pass (MHz) | High Pass (MHz) | Data Sheet |
|---|----------------|-----------------|------------|
| <b>MoCA Application</b>   |                |                 |            |
|  |                |                 |            |
| C6039   | 5-860          | 975-1525        | C250       |
| C6131SNL  | 5-1002         | 1125-1525       | C250       |
|  |                |                 |            |
| C6058   | 975-1025       | 1125-1525       | C252       |
| C6141NL   | 975-1025       | 1125-1525       | C252       |
|  |                |                 |            |
| CX6077  | 5-860          | 975-1025        | C253       |
| CX6155NL  | 5-870          | 975-1525        | C253       |




### TRIPLEX FILTERS with Integrated F-Connectors

| Part Number   | Low Pass (MHz) | Band Pass (MHz) | High Pass (MHz) | Data Sheet |
|---|----------------|-----------------|-----------------|------------|
|  |                |                 |                 |            |
| C6113NL   | 5-42           | 54-1002         | 1125-1525       | C257       |





Pulse has been a participating member







## RF, BROADBAND, CATV, TELCO TV APPLICATIONS




| Diplexer Filters  |                              |                     |                  |               |            |
|---|------------------------------|---------------------|------------------|---------------|------------|
| Part Number   | Frequency <sup>1</sup> (MHz) | Insertion Loss (dB) | Return Loss (dB) | Package Style | Data Sheet |
|  | 5-42/52-750                  | 1.5                 | 18 or better     | SMT           | C202       |
| C6001   | 5-42/52-870                  | <1.0                | 20 or better     | SMT           | C204       |
| C6001L <sup>3</sup>   | 5-42/52-870                  | <1.0                | 20 or better     | SMT           | C204       |
| CX6006L <sup>3</sup>  | 5-65/85-870                  | <1.2                | 16 or better     | SMT           | C213       |
| CX6006  | 5-65/85-870                  | <1.2                | 18 or better     | SMT           | C213       |
|  | 5-42/88-864                  | <1.0                | 14 or better     | SMT           | C211       |
| CX6008 <sup>1</sup>   | 5-65/85-864                  | 1.0 TYP             | 14/9             | SMT           | C216       |
| CX6002 <sup>1</sup>   | 5-42/54-864                  | <1.5                | 14/9             | SMT           | C230       |
|  | 5-42/54-864                  | <1.5                | 14/9             | SMT           | C248       |

1. **Low Pass Port/High Pass Port**
2. **Leadless**
3. **L = Low cost**

| RF Splitter/Combiners: 2-Way, 0°  |                 |                    |                   |                         |            |
|---|-----------------|--------------------|-------------------|-------------------------|------------|
| Part Number   | Frequency (MHz) | Isolation (dB TYP) | Return Loss (TYP) | Insertion Loss (dB TYP) | Data Sheet |
|  | 5-65            | 40                 | 30                | 0.22                    | C212       |
| CX4004L <sup>2</sup>  | 5-65            | 40                 | 30                | 0.22                    | C212       |
| CX4012L <sup>2</sup>  | 5-1000          | 20                 | 16                | 0.65                    | C220       |
| CX4012  | 40-1000         | 27                 | 22                | 0.65                    | C220       |
| C4036   | 5-1000          | 25                 | 31                | 0.48                    | C241       |
|  | 5-1000          | 25                 | 26                | 0.65                    | C218       |
|  | 96-864          | 25                 | 9                 | 1.7                     | C222       |
|  | 5-1000          | 27                 | 24                | 0.48                    | C223       |
| CX4005  | 5-250           | 24                 | 27                | 0.45                    | C226       |
| CX4024  | 5-1000          | 30                 | 30                | 0.8                     | C220       |

1. **Differential splitter/combiner**
2. **L = Low cost**


| Directional Couplers  |                 |       |                         |                        |            |
|---|-----------------|-------|-------------------------|------------------------|------------|
| Part Number   | Frequency (MHz) | Z (Ω) | Coupling Nom. (dB ±0.5) | Mainline Loss (dB TYP) | Data Sheet |
|  | 5-900           | 75    | 10.0                    | 1.1                    | A102       |
| A5808   | 5-900           | 75    | 7.5                     | 1.6                    | A102       |
| A5809   | 5-900           | 75    | 12.0                    | 0.9                    | A102       |
| A5816   | 5-900           | 75    | 16.0                    | 0.8                    | A102       |
| A5908   | 5-900           | 75    | 7.5                     | 1.6                    | A102       |
| A5910   | 5-900           | 75    | 10.0                    | 1.1                    | A102       |
| A5912   | 5-900           | 75    | 12.0                    | 0.9                    | A102       |
| A5916   | 5-900           | 75    | 16.0                    | 0.8                    | A102       |
|  | 5-900           | 75    | 16.0                    | 0.6                    | C207       |
|  | 5-900           | 75    | 7.5                     | 1.6                    | C243       |
| CX3042  | 5-1000          | 75    | 6.0                     | 1.76                   | C243       |
|  | 10-1000         | 50    | 16.0                    | 0.8                    | C234       |

| Low Pass Filters  |                      |                |                         |                      |            |
|---|----------------------|----------------|-------------------------|----------------------|------------|
| Part Number   | In/Out Impedance (Ω) | Passband (MHz) | Insertion Loss (dB MAX) | Return Loss (dB MIN) | Data Sheet |
|  | 75                   | 5-42           | 1.0                     | 18.0                 | B907       |
| B5005   | 75                   | 5-65           | 1.0                     | 17.5                 | B907       |
|  | 50                   | 1-49           | 1.0                     | 16.0                 | C208       |
|  | 150                  | 1-50           | 1.2                     | 15.0                 | C209       |
| C5003   | 150                  | 1-80           | 1.2                     | 15.0                 | C209       |
| C5005   | 75                   | 1-59.5         | 1.0                     | 15.0                 | C209       |
| CX5013  | 75                   | 1-65           | 1.5                     | 15.0                 | C209       |

SMT - Surface Mount Package    THT - Through Hole Package

## RF, BROADBAND, CATV, TELCO TV APPLICATIONS

### RF Transformers/Baluns

| Part Number   | Impedance Ratio | Bandwidth (MHz TYP) |            |          | Data Sheet |
|---|-----------------|---------------------|------------|----------|------------|
|   |                 | 3 dB                | 2 dB       | 1 dB     |            |
|  | 1:4CT           | 0.100-500           | 0.150-390  | .300-220 | C200       |
| C2020   | 1CT:1CT         | 0.150-210           | .200-150   | .350-90  | C200       |
| CX2038 <sup>1,2</sup>   | 1:1             | —                   | Up to 1500 | 4.5-1000 | C203       |
| CX2039 <sup>1,2</sup>   | 1:1             | —                   | Up to 1500 | 4.5-1000 | C203       |
| CX2040L <sup>1,2</sup>  | 1:1             | 1.5-500             | 2.5-400    | 5-350    | C203       |
| CX2041 <sup>2</sup>   | 1:1             | 0.05-450            | 0.75-300   | 0.1-200  | C203       |
| CX2043L <sup>1,2</sup>  | 1:1.5           | —                   | —          | 1-1000   | C203       |
| CX2044L <sup>1,2</sup>  | 1:1.5           | —                   | 1-500      | 5-100    | C203       |
| CX2039  | 1:1 (50 Ω)      | —                   | Up to 1500 | 4.5-1000 | C203       |
| CX2038  | 1:1 (75 Ω)      | —                   | Up to 1500 | 4.5-1000 | C203       |
| CX2045L <sup>1,2</sup>  | 1:2             | —                   | —          | 3-300    | C203       |
| CX2047L <sup>1,2</sup>  | 1:4             | —                   | .5-300     | 1.5-100  | C203       |
| CX2047 <sup>2</sup>   | 1:4CT           | —                   | 0.50-300   | 1.5-100  | C203       |
| CX2049L <sup>1,2</sup>  | 1:8             | 2-500               | —          | —        | C203       |
| CX2029  | 36:1CT          | 0.05-21             | —          | —        | C203       |
| CX2155  | 1:1             | —                   | —          | 5-500    | C238       |
| CX2163LNL <sup>3,4</sup>  | 1:1             | 800-1900            | —          | 900-1400 | C203       |



|        |       |          |   |   |      |
|--------|-------|----------|---|---|------|
| CX2050 | 1:1   | 0.15-400 | — | — | C206 |
| CX2054 | 1:4CT | 0.20-350 | — | — | C206 |
| CX2059 | 1:9   | 0.15-200 | — | — | C206 |
| CX2052 | 1:1CT | 0.08-200 | — | — | C206 |



|        |         |          |         |        |      |
|--------|---------|----------|---------|--------|------|
| CX2068 | 1:12.25 | 0.1-150  | 0.5-100 | 1.5-50 | C206 |
| CX2060 | 1:1     | 0.15-400 | —       | —      | C206 |
| CX2062 | 1:1CT   | 0.08-200 | —       | —      | C206 |
| CX2064 | 1:4CT   | 0.20-350 | —       | —      | C206 |
| CX2065 | 1:4CT   | 0.02-250 | —       | —      | C206 |



|                       |         |           |           |          |      |
|-----------------------|---------|-----------|-----------|----------|------|
| CX2032 <sup>2,3</sup> | 1:4CT   | —         | —         | 5-165    | C210 |
| C2042 <sup>2</sup>    | 1CT:1CT | 0.30-300  | 0.40-200  | 0.5-90   | C210 |
| CX2157 <sup>2</sup>   | 1:1CT   | 0.4-800   | 0.5-700   | 1-600    | C232 |
| CX2158 <sup>2</sup>   | 1:4CT   | 2-775     | 3-600     | 6-250    | C232 |
| CX2141 <sup>2</sup>   | 4CT:1CT | 0.3-300   | 0.4-200   | 0.5 - 90 | C232 |
| CX2142 <sup>2</sup>   | 1:1     | —         | —         | 50-870   | C232 |
| C2160 <sup>2</sup>    | 2.65:1  | Up to 130 | Up to 100 | 0.40-70  | C232 |






|                     |          |         |            |          |      |
|---------------------|----------|---------|------------|----------|------|
| CX2078              | 1:1      | —       | —          | 5-500    | C215 |
| CX2081              | 1:1.5 CT | 5.0-125 | —          | —        | C215 |
| CX2156              | 1:1      | —       | —          | 2.3-2700 | C215 |
| CX2148              | 1:1      | —       | —          | 5-500    | C224 |
| CX2148A             | 1:1      | —       | —          | 5-500    | C224 |
| C2073 <sup>2</sup>  | 1:4CT    | —       | 1-500      | 1-200    | C224 |
| C2073A <sup>2</sup> | 1:4CT    | —       | 1-500      | 1-200    | C224 |
| CX2072              | 1:1      | —       | Up to 1500 | 10-1000  | C227 |
| CX2076 <sup>2</sup> | 1:1      | —       | Up to 2150 | —        | C233 |

1. L = low cost
2. Leadless

3. Low profile
4. NL = lead free

Continued next column

### RF Transformers/Baluns (continued)

| Part Number   | Impedance Ratio        | Bandwidth (MHz TYP) |            |            | Data Sheet |      |
|---|------------------------|---------------------|------------|------------|------------|------|
|   |                        | 3 dB                | 2 dB       | 1 dB       |            |      |
|  | CX2149 <sup>2</sup>    | 1:1                 | —          | Up to 1500 | 10-1200    | C217 |
| CX2024 <sup>2</sup>   | 1:1                    | —                   | Up to 1500 | 10-1200    | C217       |      |
|  | CX2147                 | 1:1CT               | —          | —          | 1-160      | C242 |
| CX2074  | 1:4CT                  | —                   | —          | 5-170      | C242       |      |
|  | C2139NL <sup>2,4</sup> | 1:1                 | —          | —          | 5-1000     | C244 |

1. L = low cost
2. Leadless

3. Low profile
4. NL = lead free


### Fibre Channel (SAN), Dual Serial Data Interface Transformers

| Part Number             | Turns Ratio | Package Style <sup>1</sup> | Package L/W/H (in.) * | Data Sheet |
|-------------------------|-------------|----------------------------|-----------------------|------------|
|                         |             |                            |                       |            |
| A6801 <sup>2</sup>      | 1CT:1CT     | 16-pin SOIC                | .500/.295/.220        | A100       |
| A6802                   | 1:1         | 16-pin SOIC                | .500/.295/.220        | A100       |
| PE-65507NL <sup>2</sup> | 1:1         | 16-pin SOIC                | .500/.270/.220        | A101       |
| PE-65508NL <sup>2</sup> | 1:1         | 16-pin SOIC                | .500/.270/.220        | A101       |

1. SOIC = 50 mil pitch lead spacing

2. NL = Lead-free

### IEEE 1394, Common Mode Choke

| Part Number   | No. of Lines | Inductance OCL (μH MIN) | Package L/W/H (in.) * | Data Sheet     |      |
|---|--------------|-------------------------|-----------------------|----------------|------|
|  | A1801        | 2                       | 3                     | .290/.240/.150 | A104 |