



# Surface Mount Wideband RF Transformers



- Cost effective surface mount wideband transformers
- 300 V interwinding isolation, 1/4 Watt RF input power
- 250 mA max current rating.

**Core material** Ferrite

**Terminations** RoHS compliant tin-silver-copper over tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight** 250 – 270 mg

**Ambient temperature** –40°C to +85°C

**Storage temperature** Component: –40°C to +85°C.

Tape and reel packaging: –40°C to +80°C

**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

60 per billion hours / 16,666,667 hours, calculated per Telcordia SR-332

**Packaging** 250/7" reel; 1000/13" reel Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 5.0 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf

## Typical Frequency Response

| Part number | 3 dB (MHz)   | 2 dB (MHz)   | 1 dB (MHz)  |
|-------------|--------------|--------------|-------------|
| PWB-1-AL_   | 0.08 – 450   | 0.13 – 325   | 0.30 – 190  |
| PWB-1.5-AL_ | 0.03 – 300   | 0.035 – 250  | 0.06 – 150  |
| PWB-2-AL_   | 0.05 – 200   | 0.06 – 160   | 0.10 – 100  |
| PWB-4-AL_   | 0.15 – 500   | 0.24 – 300   | 0.60 – 140  |
| PWB-16-AL_  | 0.05 – 80    | 0.06 – 75    | 0.11 – 30   |
| PWB1010L_   | 0.0035 – 125 | 0.0045 – 100 | 0.007 – 80  |
| PWB1010-1L_ | 0.03 – 250   | 0.04 – 225   | 0.06 – 200  |
| PWB1015L_   | 0.07 – 225   | 0.10 – 200   | 0.20 – 125  |
| PWB1040L_   | 0.15 – 400   | 0.25 – 350   | 0.80 – 250  |
| PWB-1-BL_   | 0.13 – 425   | 0.18 – 325   | 0.32 – 190  |
| PWB-1.5-BL_ | 0.50 – 250   | 0.80 – 175   | 1.50 – 120  |
| PWB-2-BL_   | 0.20 – 400   | 0.225 – 275  | 0.50 – 150  |
| PWB-4-BL_   | 0.14 – 700   | 0.20 – 400   | 0.40 – 150  |
| PWB-16-BL_  | 0.075 – 90   | 0.11 – 75    | 0.20 – 65   |
| PWB2010L_   | 0.0035 – 125 | 0.0045 – 100 | 0.007 – 80  |
| PWB2010-1L_ | 0.03 – 250   | 0.04 – 225   | 0.06 – 200  |
| PWB2040L_   | 0.15 – 400   | 0.25 – 350   | 0.80 – 250  |
| PWB-1-CL_   | 0.10 – 300   | 0.13 – 200   | 0.20 – 150  |
| PWB-1.5-CL_ | 0.15 – 200   | 0.225 – 150  | 0.35 – 100  |
| PWB-2-CL_   | 0.13 – 285   | 0.20 – 175   | 0.325 – 125 |
| PWB-4-CL_   | 0.14 – 500   | 0.20 – 230   | 0.40 – 110  |
| PWB3010L_   | 0.0035 – 125 | 0.0045 – 100 | 0.007 – 80  |
| PWB3010-1L_ | 0.03 – 250   | 0.04 – 225   | 0.06 – 200  |
| PWB3015L_   | 0.07 – 225   | 0.10 – 200   | 0.20 – 125  |
| PWB3040L_   | 0.15 – 400   | 0.25 – 350   | 0.80 – 250  |



www.coilcraft.com

**US** +1-847-639-6400 sales@coilcraft.com

**UK** +44-1236-730595 sales@coilcraft-europe.com

**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw

**China** +86-21-6218 8074 sales@coilcraft.com.cn

**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

Document 591-1 Revised 09/01/11

© Coilcraft Inc. 2013

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.



# Surface Mount Wideband RF Transformers

| Type       | Part number <sup>1</sup> | Impedance ratio <sup>2</sup><br>pri:sec | Bandwidth (MHz) | Idc (mA) | Insertion loss max (dB) | Primary (pins 1-3)      |                | Secondary (pins 6-4)    |                |
|------------|--------------------------|-----------------------------------------|-----------------|----------|-------------------------|-------------------------|----------------|-------------------------|----------------|
|            |                          |                                         |                 |          |                         | L min <sup>3</sup> (μH) | DCR max (Ohms) | L min <sup>3</sup> (μH) | DCR max (Ohms) |
| <br>Type A | PWB-1-AL_                | 1:1                                     | 0.08 - 450      | 250      | 0.60                    | 40                      | 0.070          | 40                      | 0.070          |
|            | PWB-1.5-AL_              | 1:1.5                                   | 0.03 - 300      | 250      | 0.35                    | 110                     | 0.080          | 160                     | 0.110          |
|            | PWB-2-AL_                | 1:2                                     | 0.05 - 200      | 250      | 0.25                    | 75                      | 0.088          | 150                     | 0.120          |
|            | PWB-4-AL_                | 1:4                                     | 0.15 - 500      | 250      | 0.50                    | 25                      | 0.075          | 98                      | 0.135          |
|            | PWB-16-AL_               | 1:16                                    | 0.05 - 80       | 250      | 0.35                    | 75                      | 0.260          | 1250                    | 0.910          |
|            | PWB1010L_                | 1:1                                     | 0.0035 - 125    | 250      | 0.20                    | 780                     | 0.320          | 780                     | 0.320          |
|            | PWB1010-1L_              | 1:1                                     | 0.03 - 250      | 250      | 0.20                    | 95                      | 0.200          | 95                      | 0.200          |
|            | PWB1015L_                | 1:1.5                                   | 0.07 - 225      | 250      | 0.40                    | 51                      | 0.130          | 80                      | 0.145          |
| PWB1040L_  | 1:4                      | 0.15 - 400                              | 250             | 0.40     | 25                      | 0.115                   | 95             | 0.160                   |                |
| <br>Type B | PWB-1-BL_                | 1:1                                     | 0.13 - 425      | 250      | 0.40                    | 22                      | 0.070          | 22                      | 0.070          |
|            | PWB-1.5-BL_              | 1:1.5                                   | 0.50 - 250      | 250      | 0.40                    | 140                     | 0.100          | 200                     | 0.120          |
|            | PWB-2-BL_                | 1:2                                     | 0.20 - 400      | 250      | 0.35                    | 75                      | 0.088          | 150                     | 0.130          |
|            | PWB-4-BL_                | 1:4                                     | 0.14 - 700      | 250      | 0.50                    | 25                      | 0.075          | 98                      | 0.135          |
|            | PWB-16-BL_               | 1:16                                    | 0.075 - 90      | 250      | 0.30                    | 75                      | 0.260          | 1250                    | 0.910          |
|            | PWB2010L_                | 1:1                                     | 0.0035 - 125    | 250      | 0.20                    | 780                     | 0.320          | 780                     | 0.320          |
|            | PWB2010-1L_              | 1:1                                     | 0.03 - 250      | 250      | 0.20                    | 95                      | 0.200          | 95                      | 0.200          |
|            | PWB2040L_                | 1:4                                     | 0.15 - 400      | 250      | 0.40                    | 25                      | 0.115          | 95                      | 0.160          |
| <br>Type C | PWB-1-CL_                | 1:1                                     | 0.10 - 300      | 250      | 0.60                    | 22                      | 0.070          | 22                      | 0.070          |
|            | PWB-1.5-CL_              | 1:1.5                                   | 0.15 - 200      | 250      | 0.30                    | 140                     | 0.110          | 200                     | 0.120          |
|            | PWB-2-CL_                | 1:2                                     | 0.13 - 285      | 250      | 0.30                    | 75                      | 0.105          | 150                     | 0.130          |
|            | PWB-4-CL_                | 1:4                                     | 0.14 - 500      | 250      | 0.50                    | 25                      | 0.075          | 98                      | 0.135          |
|            | PWB3010L_                | 1:1                                     | 0.0035 - 125    | 250      | 0.20                    | 780                     | 0.320          | 780                     | 0.320          |
|            | PWB3010-1L_              | 1:1                                     | 0.03 - 250      | 250      | 0.20                    | 95                      | 0.200          | 95                      | 0.200          |
|            | PWB3015L_                | 1:1.5                                   | 0.07 - 225      | 250      | 0.40                    | 51                      | 0.130          | 80                      | 0.145          |
|            | PWB3040L_                | 1:4                                     | 0.15 - 400      | 250      | 0.40                    | 25                      | 0.115          | 95                      | 0.160          |

1. When ordering, please specify **termination** and **packaging** codes:

PWB-3010-1LD

**Termination:** L = RoHS compliant tin-silver-copper over tin over nickel over phos bronze.  
Special order: S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine ready reel. EIA-481 embossed plastic tape, 250 parts per full reel.

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.

D = 13" machine ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (1000 parts per full reel).

2. Impedance ratio is for the full primary winding to the full secondary winding.

3. Inductance tested at 130 kHz, 0.1 Vrms, 0 Adc.

4. Electrical specifications at 25°C. Measurements are referenced to 50 Ohms.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



www.coilcraft.com

US +1-847-639-6400 sales@coilcraft.com  
 UK +44-1236-730595 sales@coilcraft-europe.com  
 Taiwan +886-2-2264 3646 sales@coilcraft.com.tw  
 China +86-21-6218 8074 sales@coilcraft.com.cn  
 Singapore + 65-6484 8412 sales@coilcraft.com.sg

Document 591-2 Revised 09/01/11

© Coilcraft Inc. 2013

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.



# Type A Transformers



Attenuation measured on a network analyzer (re: 50 Ohms)



**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

Document 591-3 Revised 09/01/11  
 © Coilcraft Inc. 2013  
 This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.



# Type B Transformers



Attenuation measured on a network analyzer (re: 50 Ohms)



**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

Document 591-4 Revised 09/01/11

© Coilcraft Inc. 2013

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.



# Type C Transformers



Attenuation measured on a network analyzer (re: 50 Ohms)



**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

Document 591-5 Revised 09/01/11  
 © Coilcraft Inc. 2013  
 This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9