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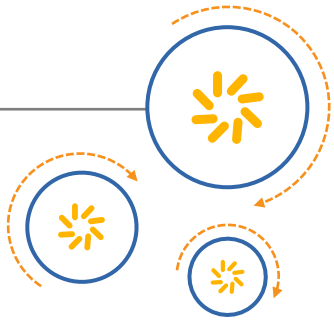

SAW Components

SAW Tx filter

WCDMA Band II

Series/type:	B8815
Ordering code:	B39192B8815P810
Date:	Sept 25, 2015
Version:	2.2

RF360 Europe GmbH, Anzinger Str. 13, München, Germany

SAW Components

SAW Tx filter

WCDMA Band II

Series/Type:	**B8815**
Ordering code:	**B39192B8815P810**
Date:	Sept 25, 2015
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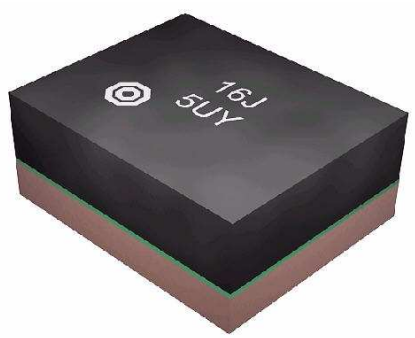
Data sheet SMD

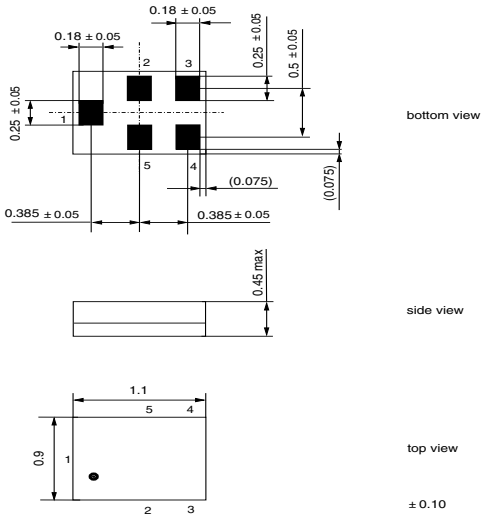
Application

- Low-loss RF filter for mobile telephone WCDMA Band II system, trasmitting path (Tx)
- Suitable for diversity applications
- Impedance 50 ohm input and output
- Unbalanced /unbalanced operation
- Usable passband 60 MHz



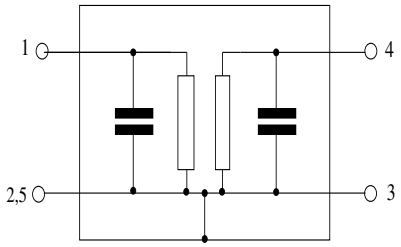
Features

- Package size 1.1 x 0.9mm²
- Max. Package height 0.45mm
- RoHS compatible
- Approx. weight 0.001g
- Package for **S**urface **M**ount **T**echnology(**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice(**ESD**)
- **M**oisture **S**ensitivity **L**evel 3



Pin configuration

- 1 Intput,unbalanced
- 4 Output,unbalanced
- 2,3,5 To be grounded



Data sheet SMD

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25˚C	max.	
Center frequency	f_C	—	1880.0	—	MHz
Maximum insertion attenuation					
1850.625... 1909.375 MHz	α_{max}	—	2.2	3.8	dB
@$f_{Carrier}$ 1852.40... 1907.60 MHz	α_{WCDMA} 1)	—	2.1	3.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1850.625... 1909.375 MHz		—	0.8	2.8	dB
Error Vector Magnitude 2)					
@$f_{Carrier}$ 1852.40... 1907.60 MHz		—	2.0	4.5	
Input VSWR					
1850.625... 1909.375 MHz		—	2.0	2.3	
Output VSWR					
1850.625... 1909.375 MHz		—	2.0	2.6	
Attenuation	α				
10.0 ... 1550.0 MHz		31	34	—	dB
1550.0 ... 1580.0 MHz		33	37	—	dB
1580.0 ... 1770.0 MHz		32	39	—	dB
1770.0 ... 1830.0 MHz		7	19	—	dB
1930.625... 1990.0 MHz		30	33	—	dB
@$f_{Carrier}$ 1932.40... 1987.60 MHz	α_{WCDMA} 2)	33	35	—	dB
1990.0 ... 2032.0 MHz		28	35	—	dB
2032.0 ... 2500.0 MHz		28	34	—	dB
2500.0 ... 3700.0 MHz		28	35	—	dB
3700.0 ... 6000.0 MHz		25	29	—	dB

1) Attenuation of WCDMA signal ("Powertransferfunction", α_{WCDMA}) is determined by

$$\int_{\infty}^{\infty} \left| S_{ds21}(f) H_{RRC}(f - f_{Carrier}) \right|^2 df$$

$f_{Carrier}$ according to 3GPP TS 25.101 (e.g. for band VIII RX passband, $f_{Carrier}$ ranges from 927.4 MHz (lowest Rx channel) to 957.6 MHz (highest Rx channel)). $H_{RRC}(f)$ is the transfer function of the root-raised cosine transmit pulse shaping filter according to 3GPP TS 25.101 with the following normalization:

$$\int_{\infty}^{\infty} \left| H_{RRC}(f) \right|^2 df = 1$$

2) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

Maximum ratings

Storage temperature range	T_{stg}	–40/+85 [1]	˚C	
DC voltage	V_{DC}	5 [2]	V	
ESD voltage	V_{ESD}	50 [3]	V	Machine Model
		150 [4]	V	Human Body Model
		600 [5]	V	Charged Device Model
Input Power at				
1850.0 ... 1910.0 MHz	P_{IN}	15	dBm	Continuous wave for 2000h @ 55˚C

1) extended upperlimit: 168h@125˚C acc. to IEC 60068-2-2 Bb.

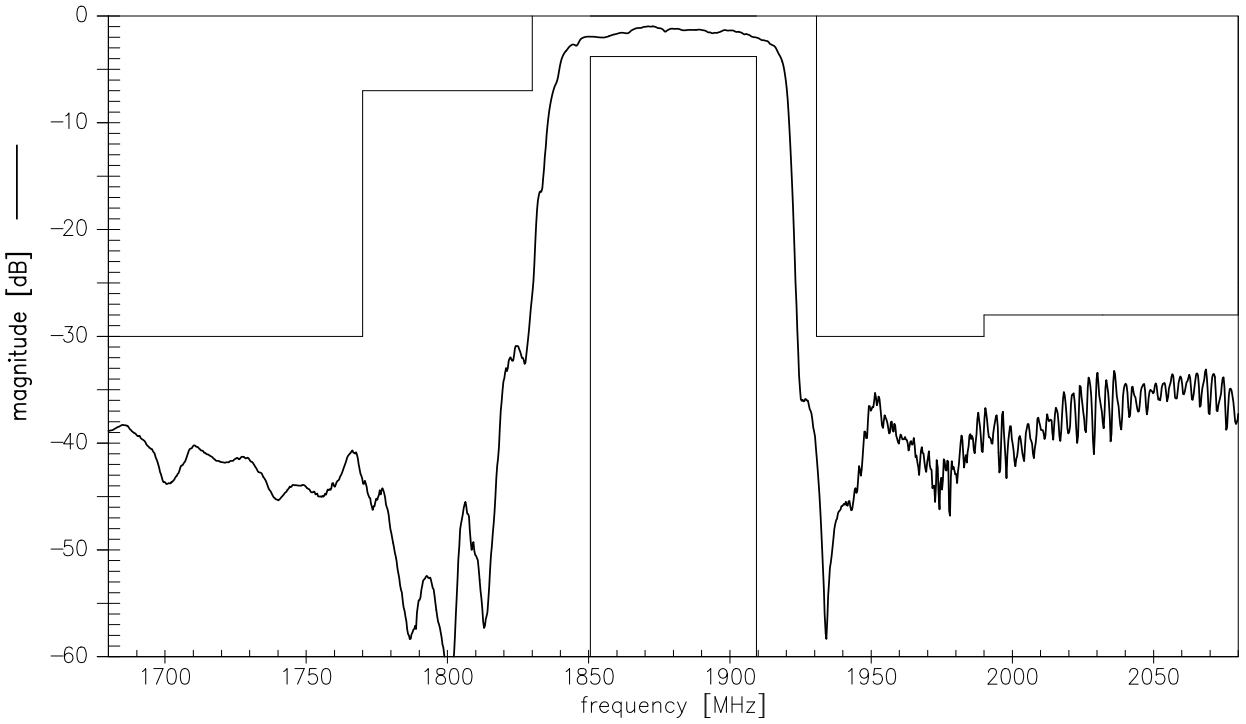
2) 168h Damp Heat Steady State acc. to IEC 60068-2-67 Cy.

3) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses.

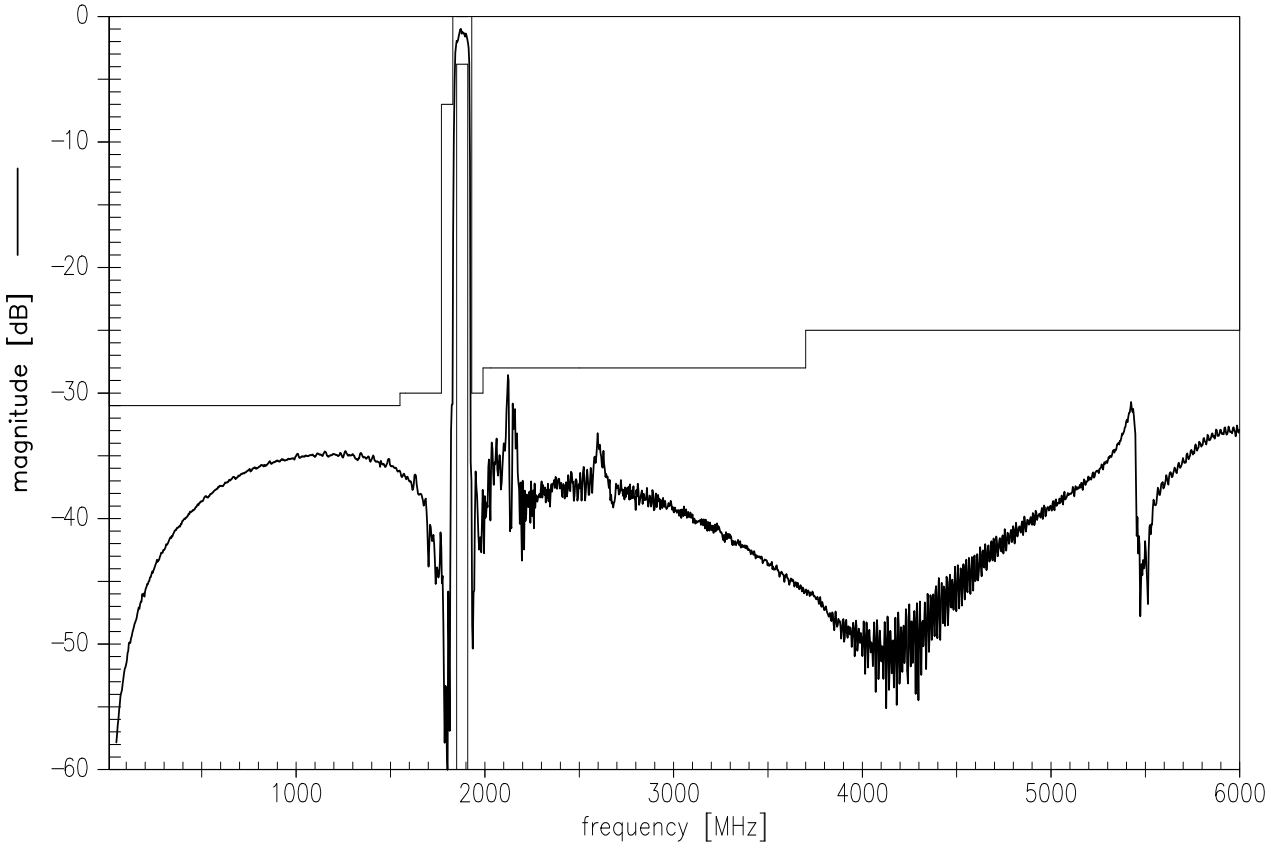
4) acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulses.

5) acc. to JESD22-C101C (CDM - Field Induced Charged Device Model), 3 negative & 3 positive pulses.

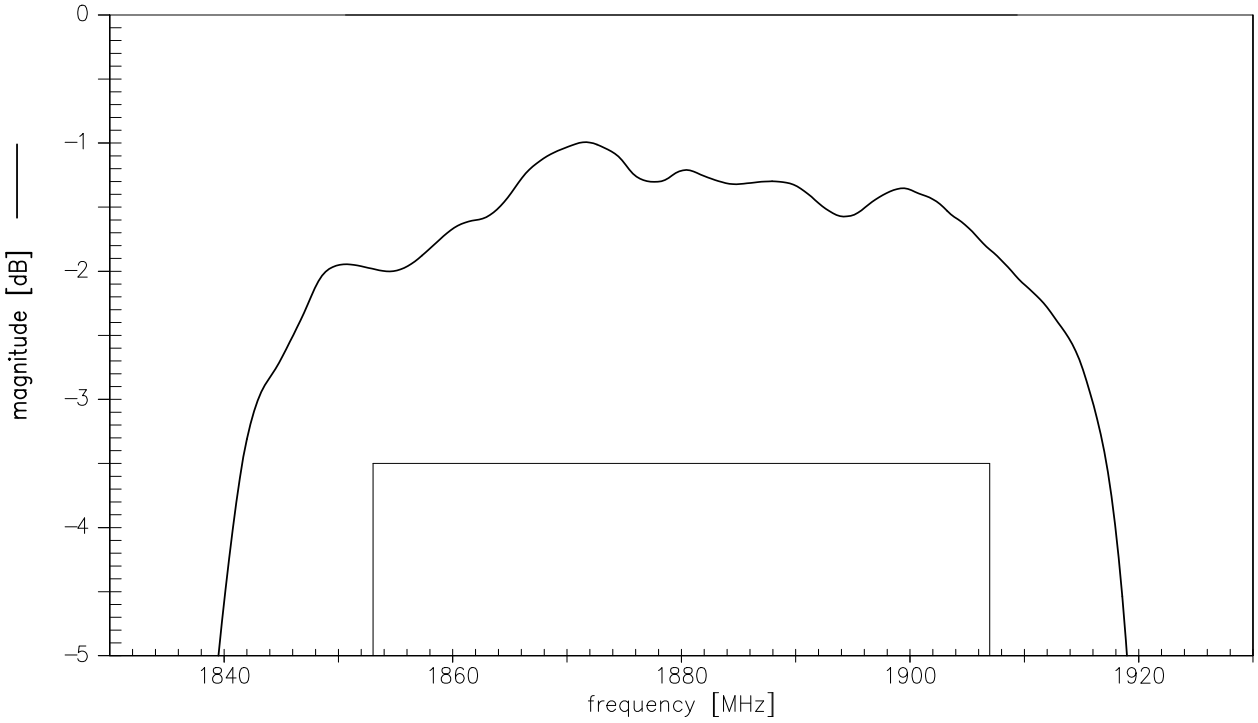
Transfer function (narrrowband)



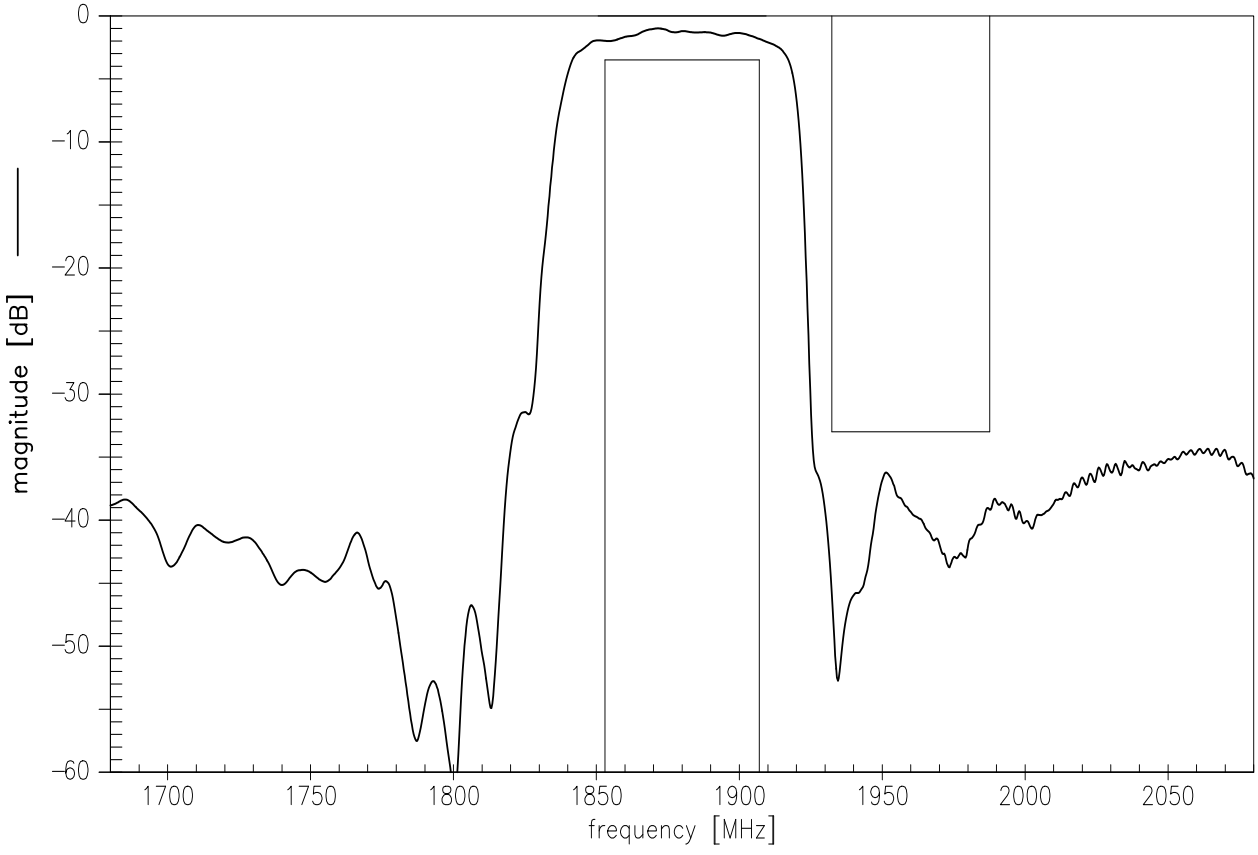
Transfer function (wideband)



Transfer function for WCDMA signals (Powertransferfunction vs. carrier frequency)

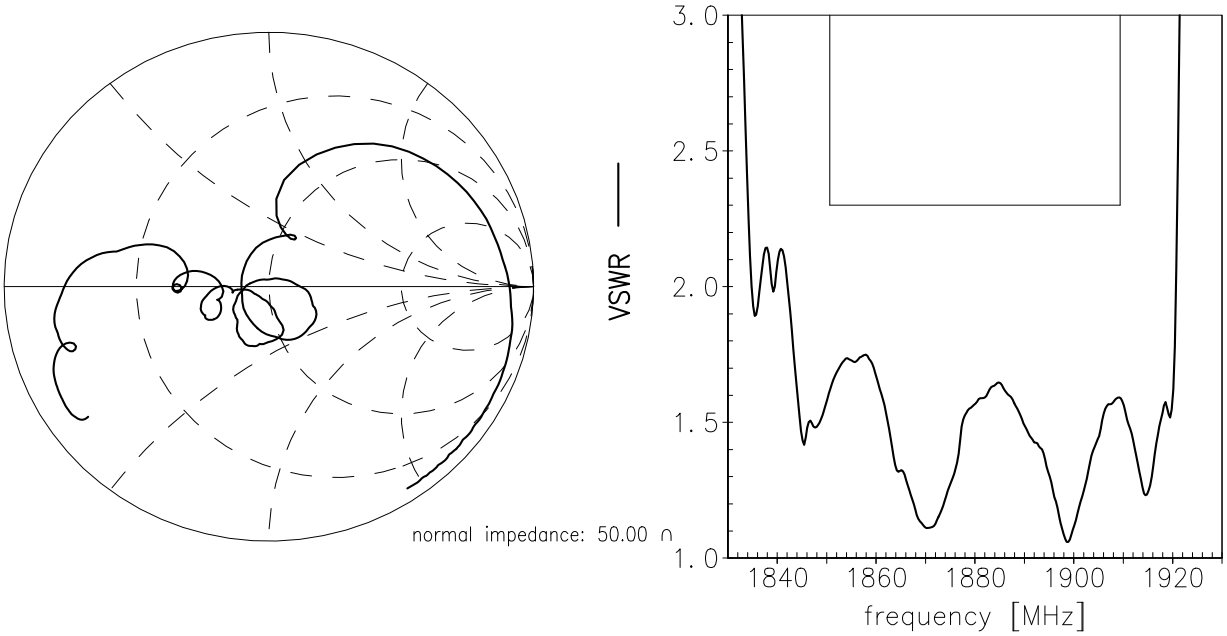


Transfer function for WCDMA signals (Powertransferfunction vs. carrier frequency)

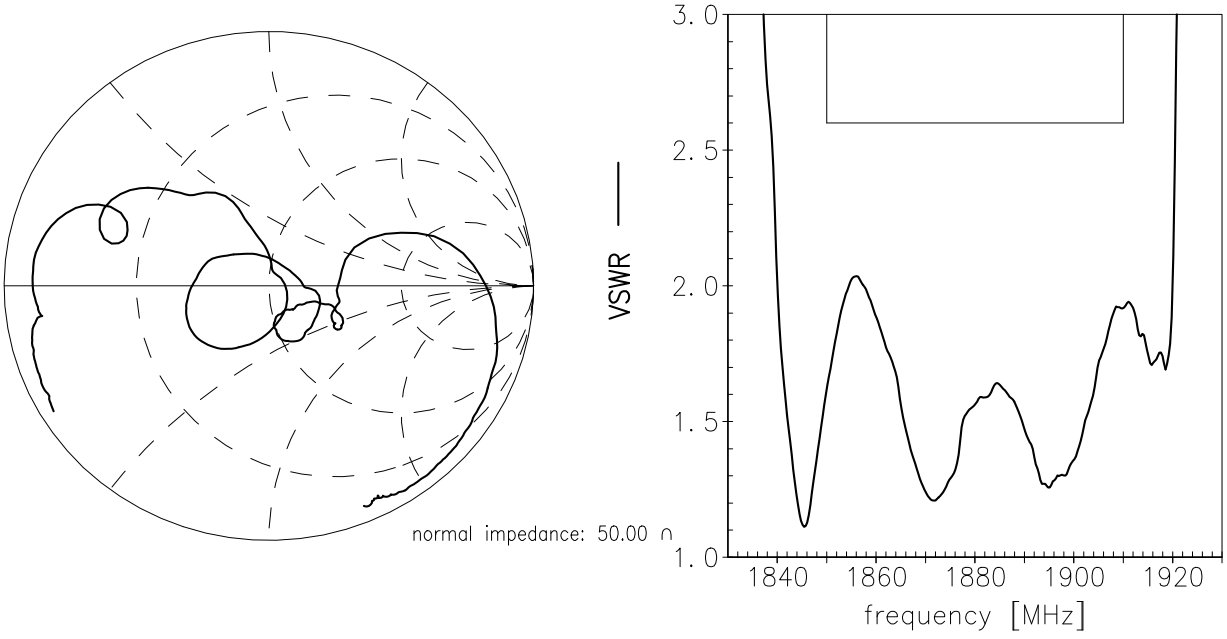


Smith charts

S_{11} function



S_{22} function



References

Type	B8815
Ordering code	B39192B8815P810
Marking and package	C61157-A8-A56-2-27
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B8815_NB.s2p, B8815_WB.s2p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
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Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils.

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