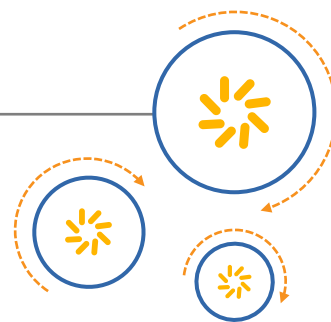




RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW Duplexer for femtocell

Band 5 (3G/LTE)

Series/type: B7925
Ordering code: B39881B7925P810

Date: April 12, 2013
Version: 2.1

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Band 5 (3G/LTE)

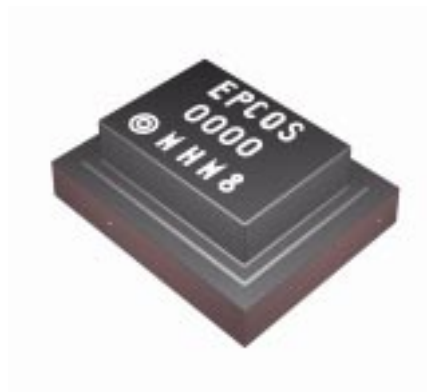
Series/type:	B7925
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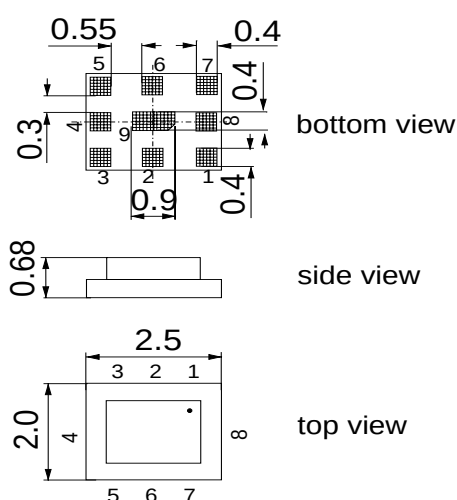
Application

- Low-loss SAW duplexer for WCDMA femtocell systems
- Low insertion attenuation
- Usable passband 25 MHz
- High power durability



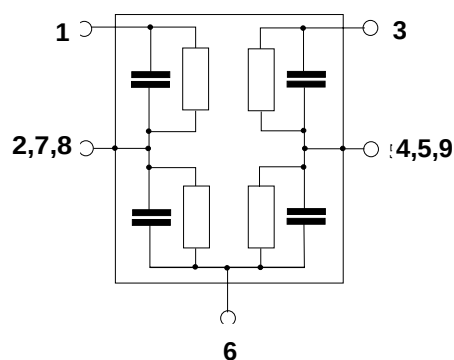
Features

- Package size 2.5 * 2.0 * 0.68 mm³
- RoHS compatible
- Package for **Surface Mount Technology (SMT)**
- Ni, Au-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**
- Rx = UPLINK = 824-849 MHz
- Tx = DOWNLINK = 869-894 MHz



Pin configuration

- 3 Rx output
- 1 Tx input
- 6 Antenna
- 2, 4, 5, 7, 8, 9 To be grounded



SAW Components
B7925
SAW Duplexer
836.5 / 881.5 MHz
DataSheet

Characteristics

Temperature range for specification: $T = -30\text{ }^{\circ}\text{C to }+85\text{ }^{\circ}\text{C}$
 TX terminating impedance: $Z_{Tx} = 50\text{ }\Omega$
 ANT terminating impedance: $Z_{Ant} = 50\text{ }\Omega \parallel 8.7\text{ nH}$
 RX terminating impedance: $Z_{Rx} = 50\text{ }\Omega$

Characteristics ANT-Rx				min.	typ. @ 25 °C	max.	
Center frequency		f_c		-	836.5	-	MHz
Maximum insertion attenuation		α					
824	...	849	MHz	-	2.6	3.0	dB
Amplitude ripple (p-p)		$\Delta\alpha$					
824	...	849	MHz	-	1.2	1.8	dB
Input VSWR (Rx port)							
824	...	849	MHz	-	1.7	2.1	
Output VSWR (Ant Port)							
824	...	849	MHz	-	1.7	2.0	
Attenuation		α					
869.0	...	894.0	MHz	50	54	-	dB
1840.0	...	1870.0	MHz	25	37	-	dB
1930.0	...	1990.0	MHz	25	36	-	dB
2110.0	...	2170.0	MHz	25	35	-	dB
2400.0	...	2484.0	MHz	25	34	-	dB
1648.0	...	1698.0	MHz	25	39	-	dB
2472.0	...	2547.0	MHz	25	34	-	dB
3296.0	...	3396.0	MHz	20	31	-	dB

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SAW Duplexer
836.5 / 881.5 MHz
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Characteristics

 Temperature range for specification: $T = -30\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$

 TX terminating impedance: $Z_{Tx} = 50\text{ }\Omega$

 ANT terminating impedance: $Z_{Ant} = 50\text{ }\Omega \parallel 8.7\text{ nH}$

 RX terminating impedance: $Z_{Rx} = 50\text{ }\Omega$

Characteristics Tx-ANT				min.	typ. @ 25 °C	max.	
Center frequency	f_c			-	881.5	-	MHz
Maximum insertion attenuation	α						
869.0 ... 894.0 MHz				-	1.7	2.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$						
869.0 ... 894.0 MHz				-	0.8	1.3	dB
Input VSWR (Tx port)							
869.0 ... 894.0 MHz				-	1.7	2.0	
Output VSWR (Ant Port)							
869.0 ... 894.0 MHz				-	1.8	2.1	
Attenuation	α						
824.0 ... 849.0 MHz				48	51	-	dB
1574.4 ... 1576.4 MHz				45	50	-	dB
1602.5 ... 1615.5 MHz				35	49	-	dB
1738.0 ... 1788.0 MHz				30	47	-	dB
1850.0 ... 1910.0 MHz				40	45	-	dB
1920.0 ... 1980.0 MHz				40	45	-	dB
2400.0 ... 2484.0 MHz				21	42	-	dB
2607.0 ... 2682.0 MHz				21	39	-	dB
3476.0 ... 3576.0 MHz				15	29	-	dB

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836.5 / 881.5 MHz
DataSheet

Characteristics

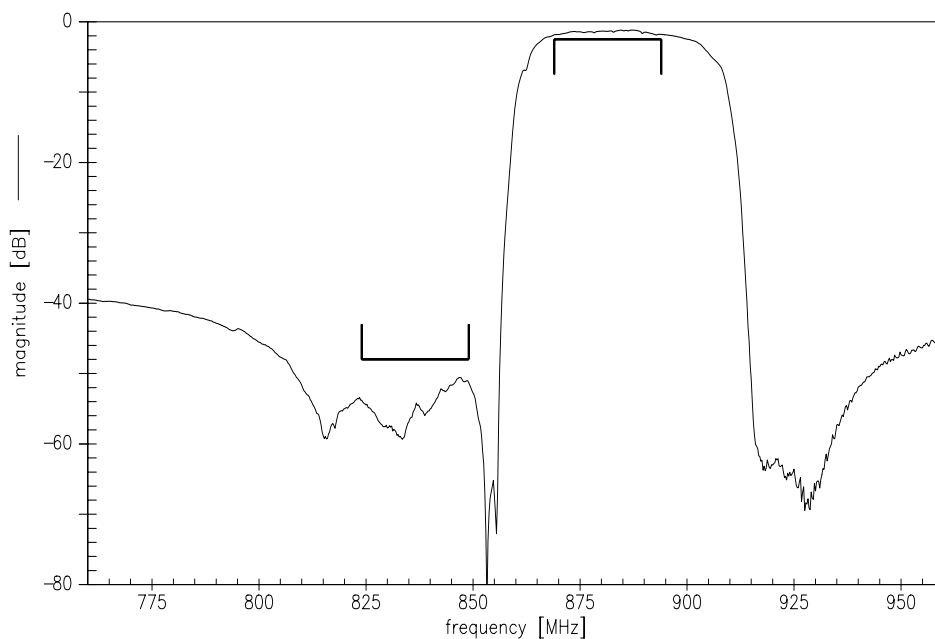
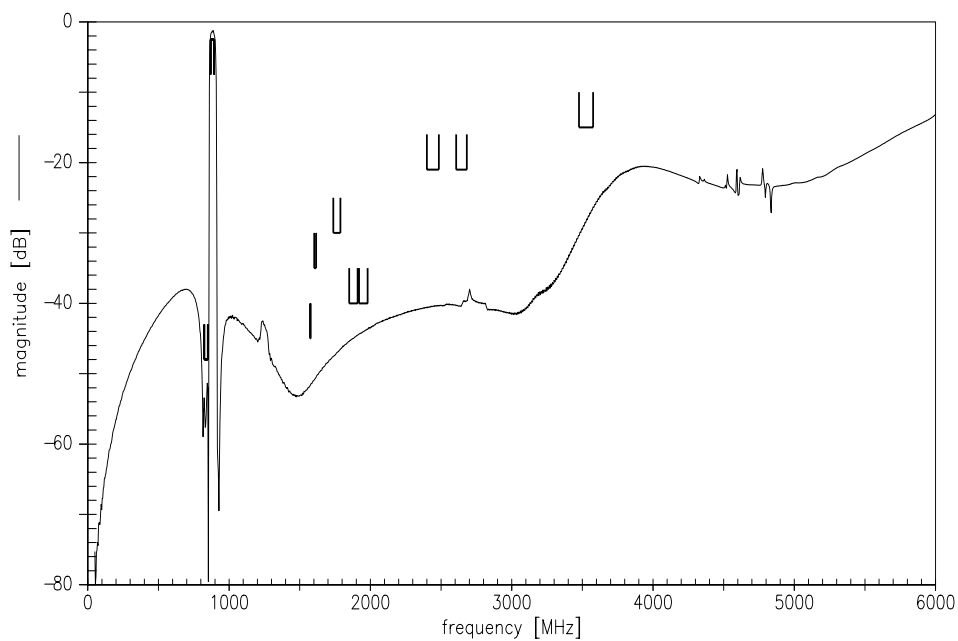
Temperature range for specification:	$T = -30\text{ °C to }+85\text{ °C}$
TX terminating impedance:	$Z_{Tx} = 50\ \Omega$
ANT terminating impedance:	$Z_{Ant} = 50\ \Omega \parallel 8.7\text{ nH}$
RX terminating impedance:	$Z_{Rx} = 50\ \Omega$

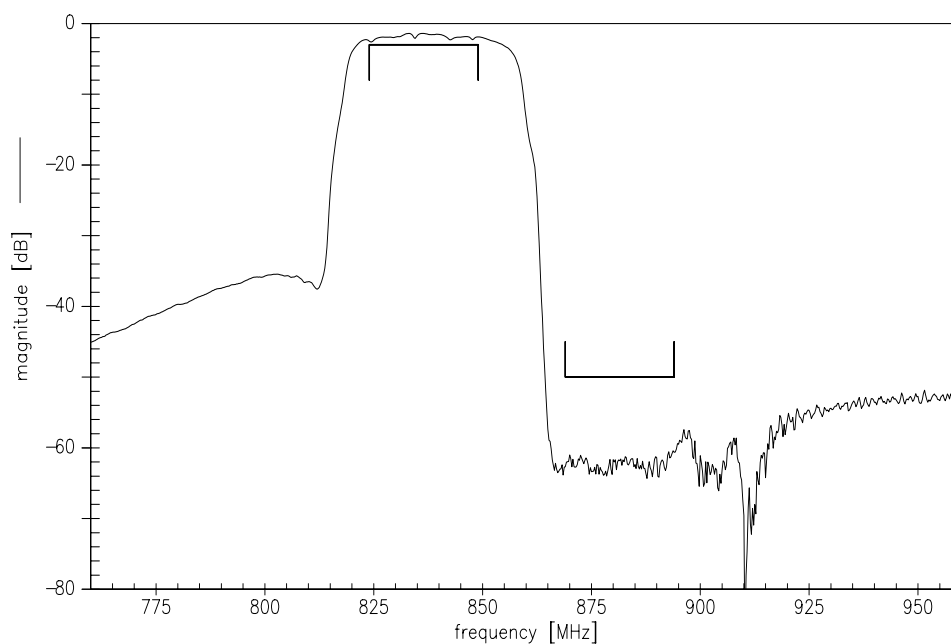
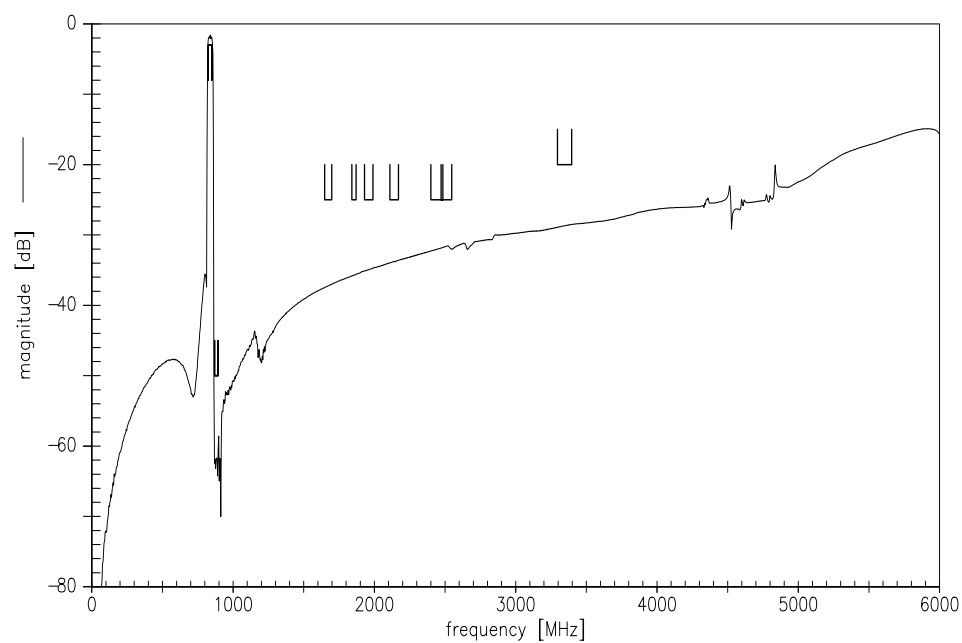
Characteristics Tx-Rx				min.	typ. @ 25 °C	max.	
Attenuation α							
869.0	...	894.0	MHz	53	57	-	dB
824.0	...	849.0	MHz	49	53	-	dB

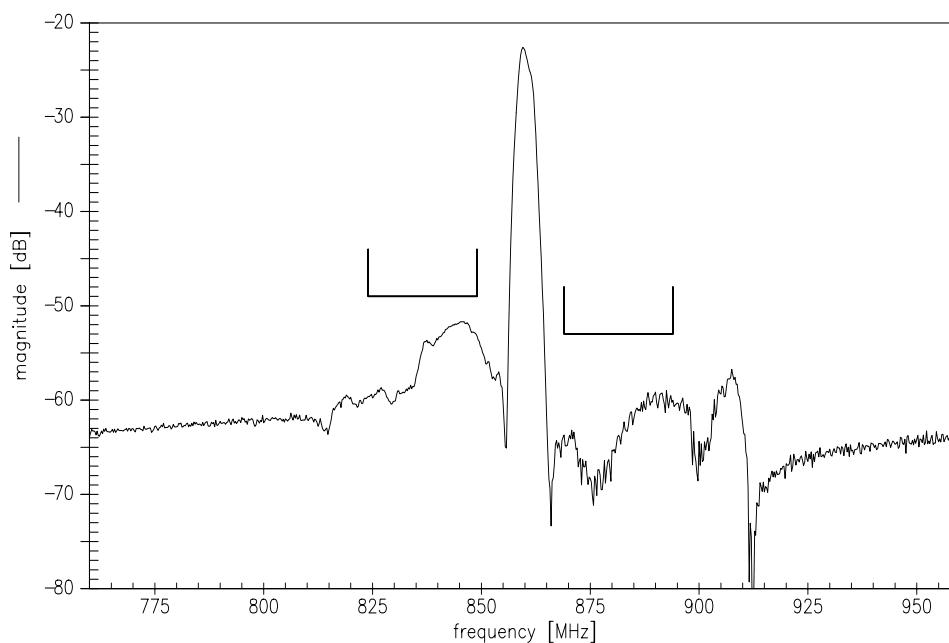
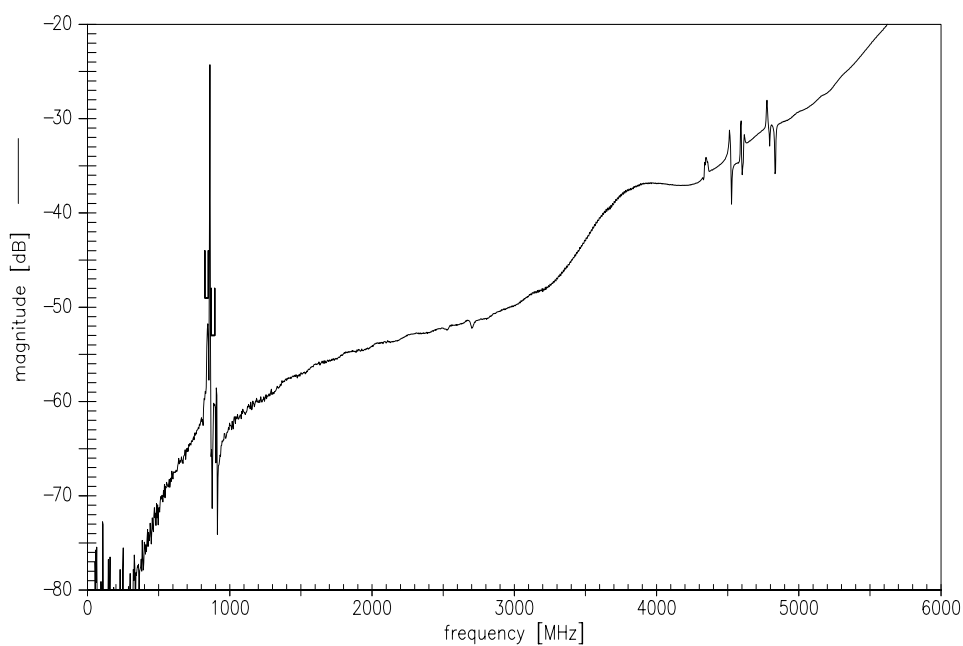
Maximum Ratings

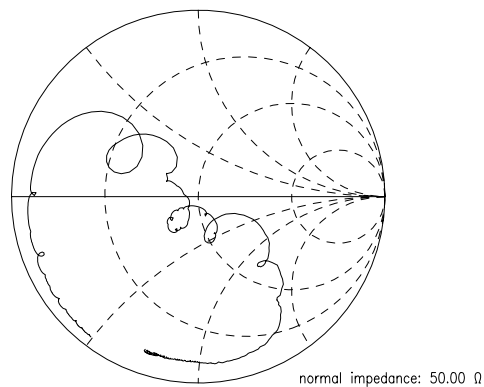
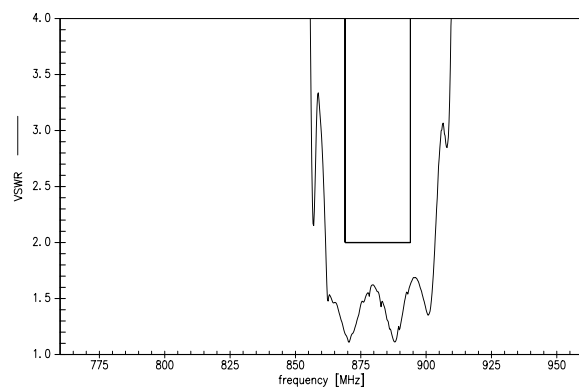
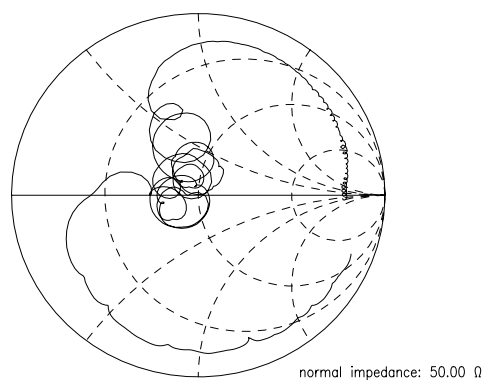
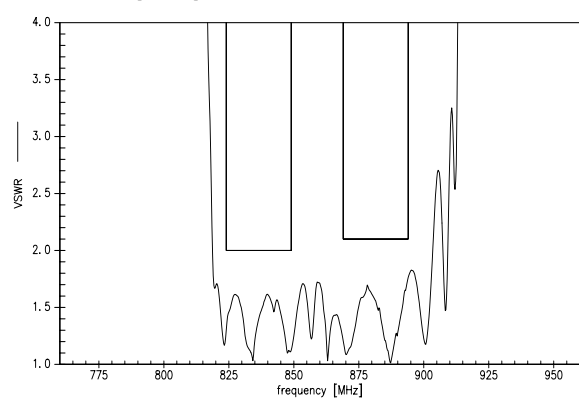
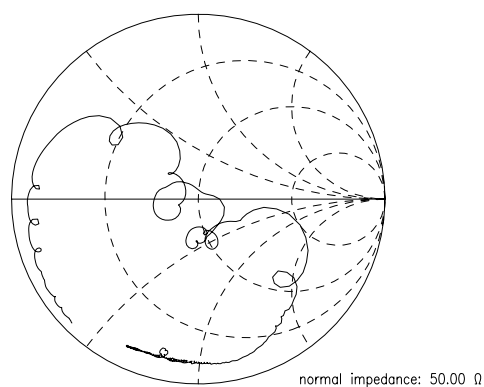
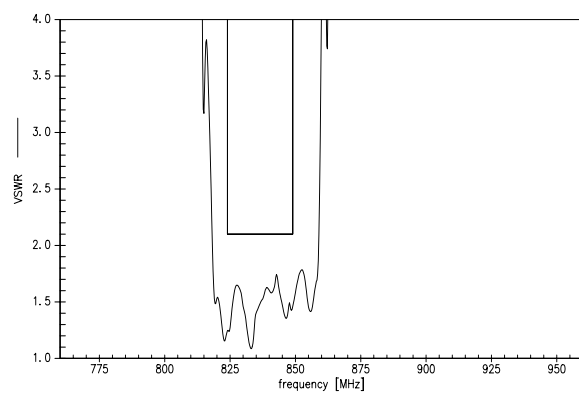
Storage temperature range	T_{stg}	-40/+85	°C	machine model, 1 pulse source and load impedance 50 Ω } LTE 5 MHz downlink average power T = 55°C, 50.000 h
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50 ¹⁾	V	
Input power at pin 1				
871.5 ...891.5 MHz	P_{in}	30	dBm	} average power T = 55°C, 50.000 h
elsewhere	P_{in}	10	dBm	

¹⁾ According to JESD22-A115A (machine model), 1 negative and 1 positive pulses.

Frequency Response TX-ANT

Frequency Response TX-ANT


Frequency Response ANT-RX

Frequency Response ANT-RX


Frequency Response TX-RX

Frequency Response TX-RX


S11 VSWR (TX)

S22 VSWR (ANT)

S33 VSWR (RX)


SAW Components
B7925
SAW Duplexer
836.5 / 881.5 MHz

DataSheet



References

Type	B7925
Ordering code	B39881B7925P810
Marking and package	C61157-A3-A54
Packaging	F61074-V8153-Z000
Date codes	L_1126
S-parameters	B7925_NB.s3p B7925_WB.s3p 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 8 th , 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

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