



SAW Components

SAW IF filter

TD-SCDMA

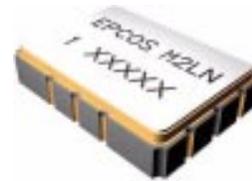
Series/type:	B5213
Ordering code:	B39121B5213H310
Date:	February 24, 2009
Version:	2.0

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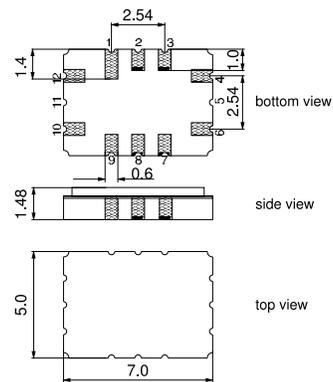
Application

- Low-loss IF filter for TD-SCDMA base station
- Usable passband 20.0 MHz
- Unbalanced or balanced operation



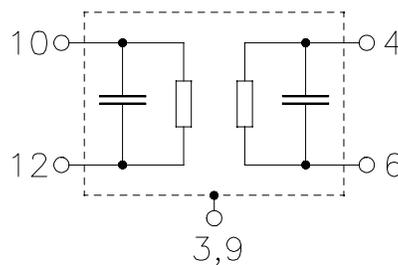
Features

- Package size 7.0 x 5.0 x 1.48 mm³
- Package code QCC12C
- RoHS compatible
- Approximate weight 0.25 g
- Ceramic package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- Filter surface passivated



Pin configuration

- 10 Input
- 12 Input ground or balanced input
- 4 Output
- 6 Output ground or balanced output
- 1, 2, 7, 8 To be grounded
- 3, 9 Case ground



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Characteristics

Temperature range for specification:

 $T = -40\text{ °C to }+85\text{ °C}$

Terminating source impedance:

 $Z_S = 50\ \Omega$ unbalanced and matching network

Terminating load impedance:

 $Z_L = 50\ \Omega$ unbalanced and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	115.2	—	MHz
Minimum insertion attenuation (including matching network)	α_{\min}	—	7.9	9.0	dB
Passband width					
	$\alpha_{\text{rel}} \leq 1.0\text{ dB}$	$B_{1.0\text{dB}}$	20.0	22.6	— MHz
Amplitude ripple (p-p)					
	$f_N \pm 10.0\text{ MHz}$	$\Delta\alpha$	—	0.3	1.0 dB
Group delay ripple (p-p)					
	$f_N \pm 10.0\text{ MHz}$	$\Delta\tau$	—	25	60 ns
Absolute group delay (mean)					
	$f_N \pm 10.0\text{ MHz}$	$\bar{\tau}$	—	0.44	— μs
Relative attenuation (relative to α_{\min})					
	10.0 MHz ... 48.4 MHz	α_{rel}	58	65	— dB
	153.6 MHz		45	60	— dB
	182.0 MHz ... 202.0 MHz		58	65	— dB
	202.0 MHz ... 1.0 GHz		40	53	— dB
1dB compression point			12	—	— dBm
Input IP3			35	—	— dBm
Temperature coefficient of frequency	TC_f	—	-78	—	ppm/K

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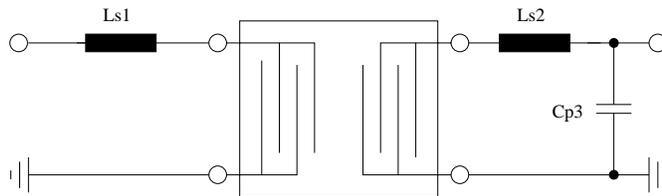
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SMD

Matching network to 50 Ω



$$L_{s1} = 220 \text{ nH}$$

$$L_{s2} = 180 \text{ nH}$$

$$C_{p3} = 27 \text{ pF}$$

Element values depend upon board layout and properties.

Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
Input power	P _{IN}	10	dBm	

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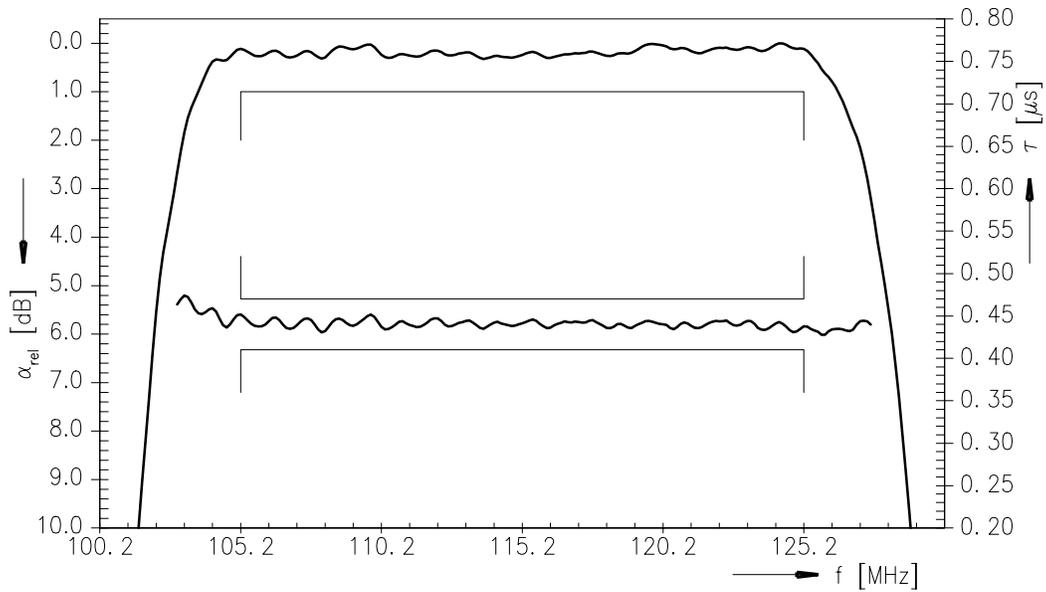
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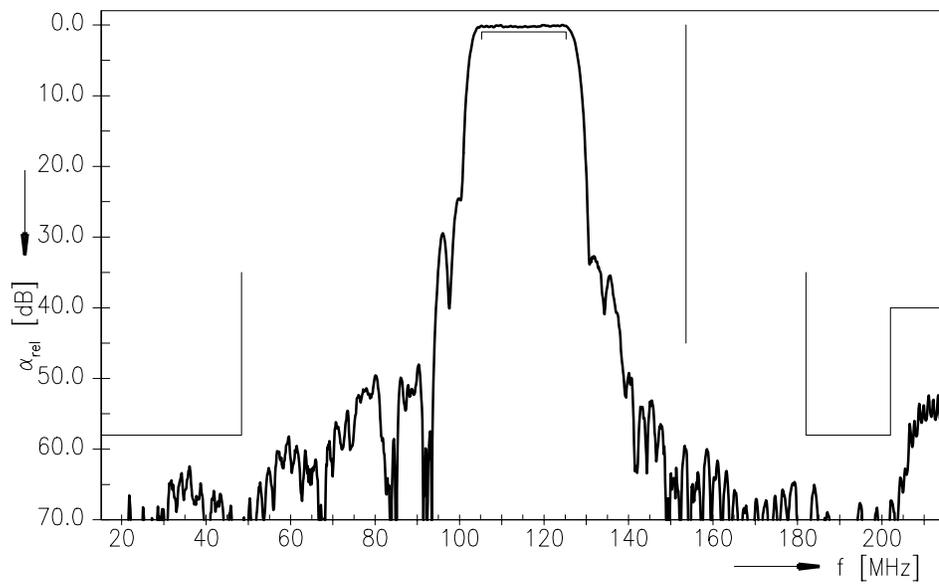
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Transfer function (S21, narrowband, normalized)



Transfer function (S21, wideband, normalized)



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References

Type	B5213
Ordering code	B39121B5213H310
Marking and package	C61157-A7-A95
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

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