

SAW Components

SAW IF filter

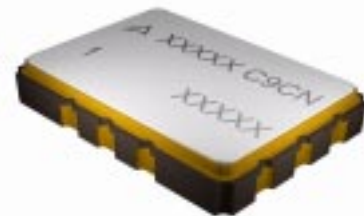
Satellite radio

Series/type:	B1720
Ordering code:	B39121B1720H810
Date:	December 19, 2012
Version:	2.2

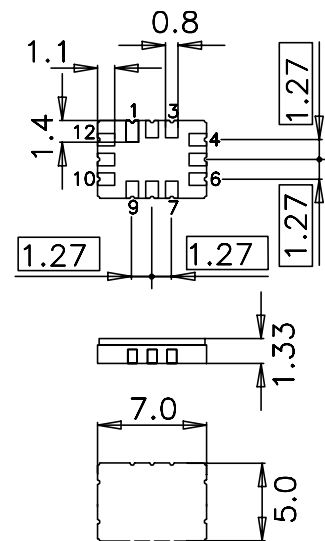
Data sheet

Application

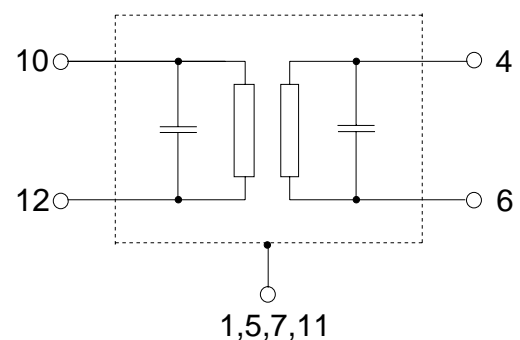
- IF filter for digital radio
- Low insertion attenuation
- Constant group delay
- Balanced to balanced operation


Features

- Package size 7.0 x 5.0 x 1.33 mm³
- Package code QCC12E
- Maximum package height of 1.48 mm
- RoHS compatible
- Approximate weight 0.25 g
- Ceramic package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- AEC-Q200 qualified component family
- **Electrostatic Sensitive Device (ESD)**


Pin configuration

- 10 Input
- 12 Input
- 4 Output
- 6 Output
- 1,5,7,11 Case – ground
- 2,3,8,9 To be grounded



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115.18 MHz
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Characteristics

Temperature range for specification: $T = -40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 200\text{ }\Omega$ and matching network
 Terminating load impedance: $Z_L = 200\text{ }\Omega$ and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	115.18	—	MHz
Minimum insertion attenuation¹⁾	α_{\min}	—	14.2	15.7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
108.9300 ... 110.7875 MHz		—	0.3	1.3	dB
110.7875 ... 112.6450 MHz		—	0.2	1.2	dB
112.6450 ... 115.1550 MHz		—	0.3	1.2	dB
115.2050 ... 117.7150 MHz		—	0.2	1.2	dB
117.7150 ... 119.5725 MHz		—	0.2	1.2	dB
119.5725 ... 121.4300 MHz		—	0.5	1.3	dB
Pass bandwidth					
$\alpha_{\text{rel}} \leq 1.5\text{ dB}$	$B_{1.5\text{dB}}$	—	13.3	—	MHz
$\alpha_{\text{rel}} \leq 3\text{ dB}$	$B_{3\text{dB}}$	—	14.0	—	MHz
Attenuation (relative to α_{\min})	α_{rel}				
Lower sidelobe					
90.000 ... 98.680 MHz		48.0	55.0	—	dB
98.680 ... 104.680 MHz		38.0	42.0	—	dB
Upper sidelobe					
124.180 ... 131.180 MHz		30.0	35.0	—	dB
131.180 ... 140.000 MHz		42.0	48.0	—	dB
Group delay ripple (p-p)	$\Delta\tau$				
108.9300 ... 110.7875 MHz		—	20	—	ns
110.7875 ... 112.6450 MHz		—	20	—	ns
112.6450 ... 115.1550 MHz		—	20	—	ns
115.2050 ... 117.7150 MHz		—	30	—	ns
117.7150 ... 119.5725 MHz		—	30	—	ns
119.5725 ... 121.4300 MHz		—	55	—	ns
Temperature coefficient of frequency	TC_f	—	-18	—	ppm/K

¹⁾ Including losses in the matching network
 Inductor type TOKO LL1005FHL

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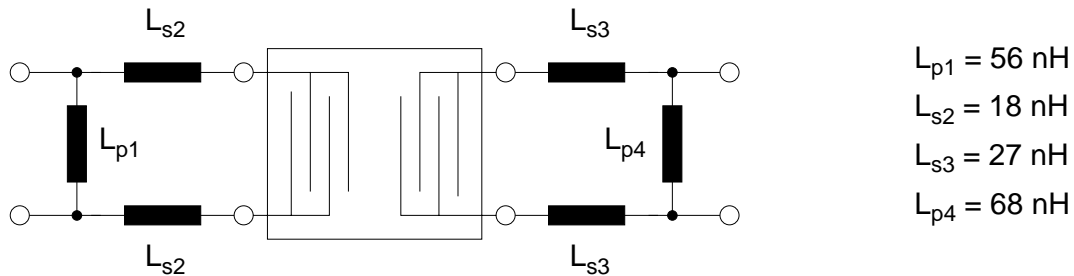
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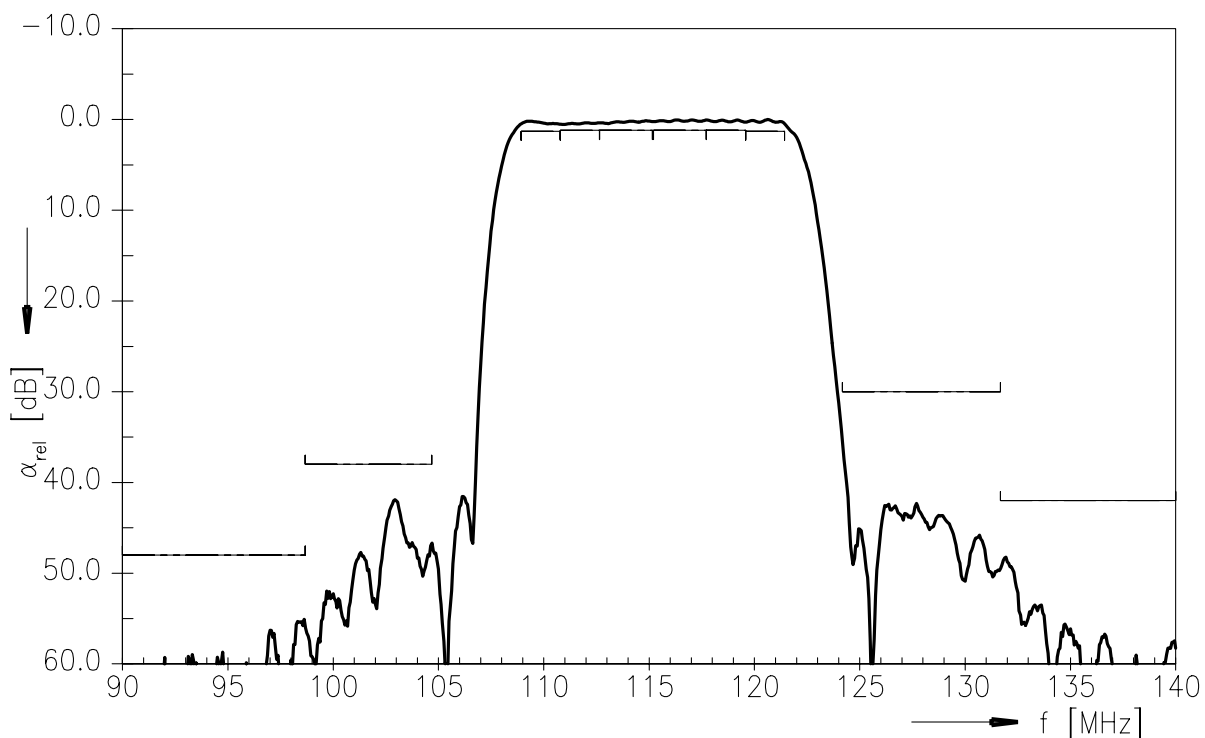
Matching network to 200 Ω (element values depend on PCB layout)



Maximum ratings

Operable temperature range	T	-40/+85	°C
Storage temperature range	T _{stg}	-40/+85	°C
DC voltage	V _{DC}	6	V
Source power	P _S	10	dBm

Transfer function



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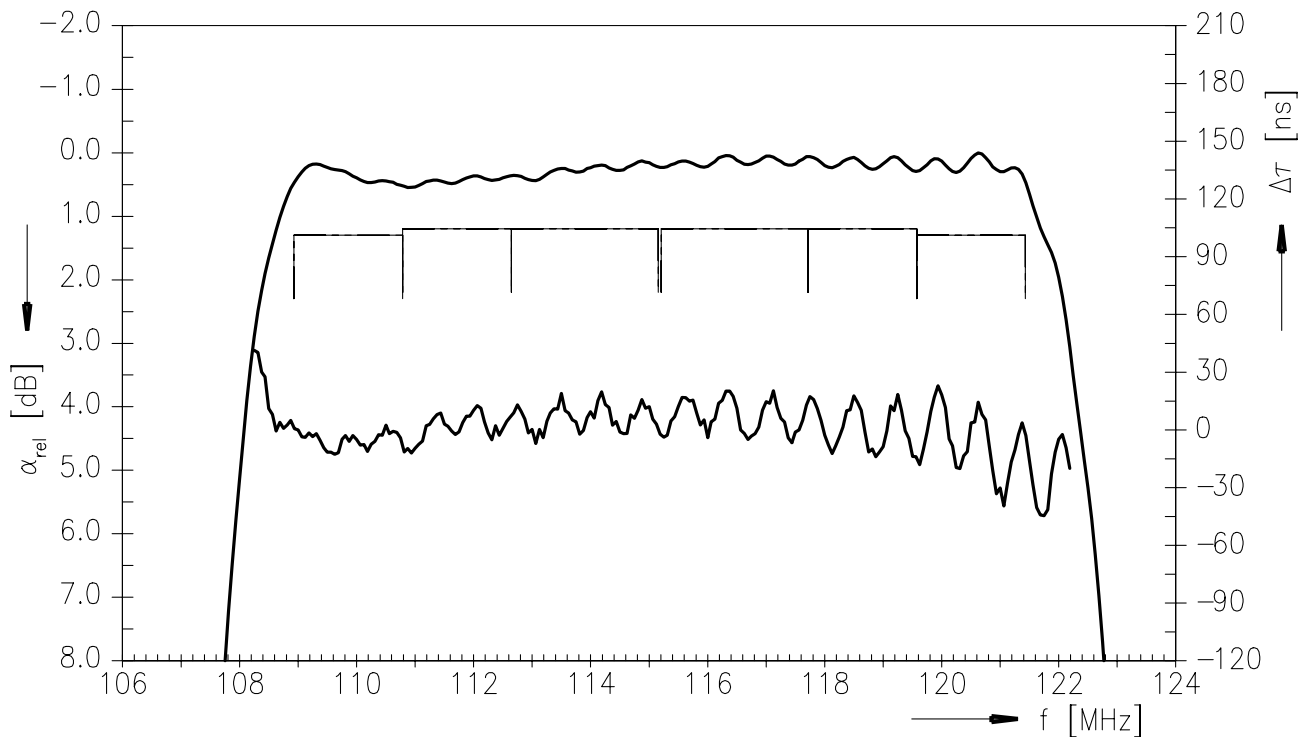
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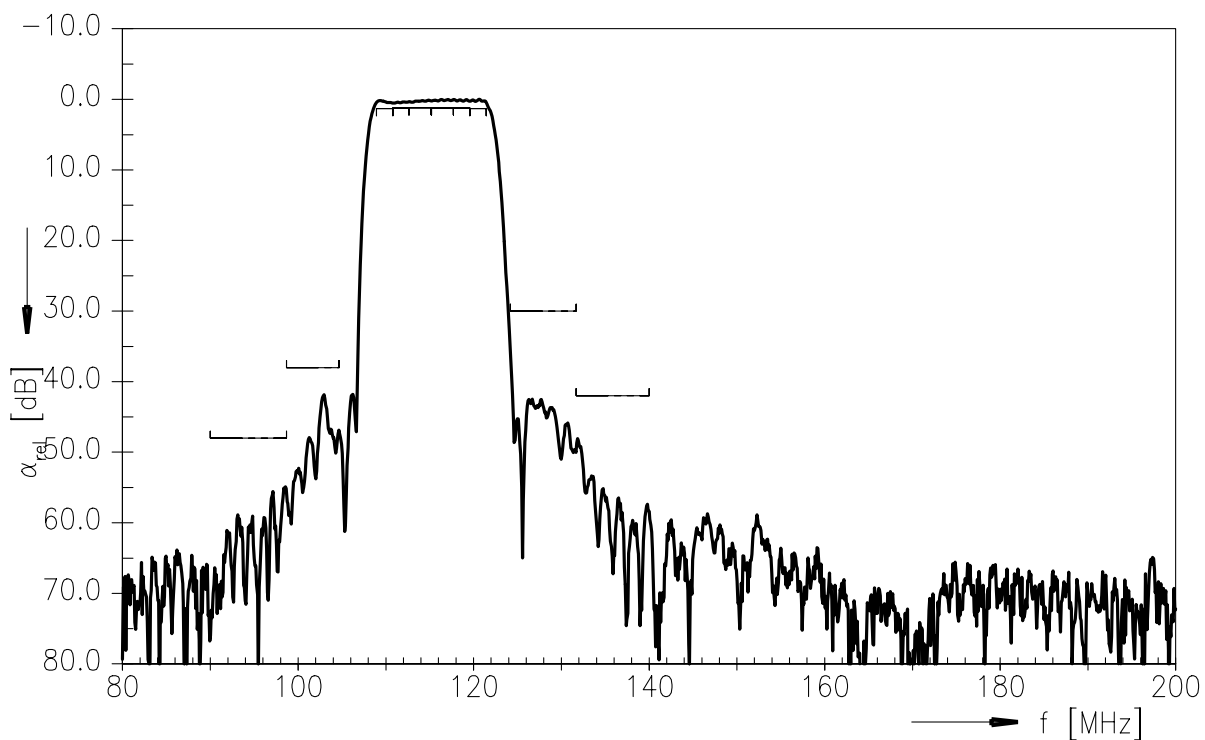
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Transfer function (pass band)



Transfer function (wide band)



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References

Type	B1720
Ordering code	B39121B1720H810
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	B1720_NB_UN.s4p 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.
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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