



SAW Components

SAW IF filter

Satellite radio

Series/type:	B1720
Ordering code:	B39121B1720H810
Date:	February 19, 2010
Version:	2.1



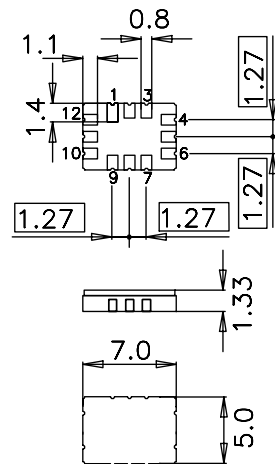
Application

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



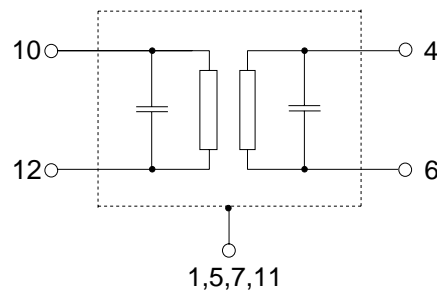
Features

- 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





Data sheet

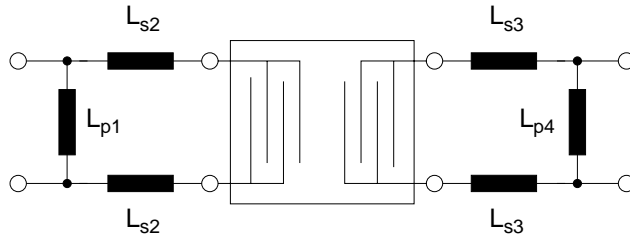


Characteristics

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

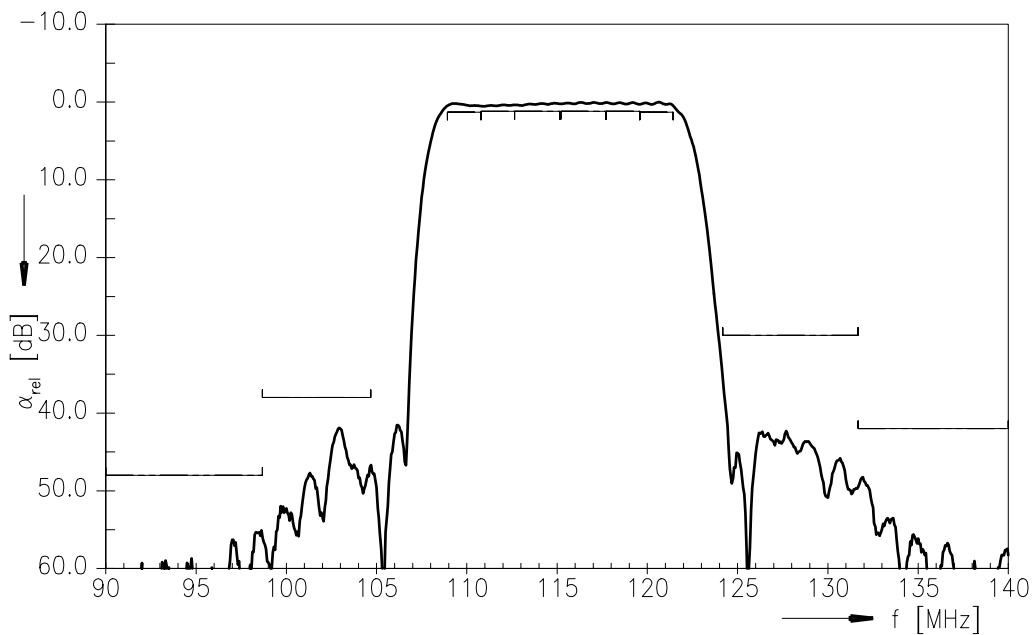
1) Including losses in the matching network
 Inductor type TOKO LL1005FHL

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


$L_{p1} = 56 \text{ nH}$
 $L_{s2} = 18 \text{ nH}$
 $L_{s3} = 27 \text{ nH}$
 $L_{p4} = 68 \text{ nH}$

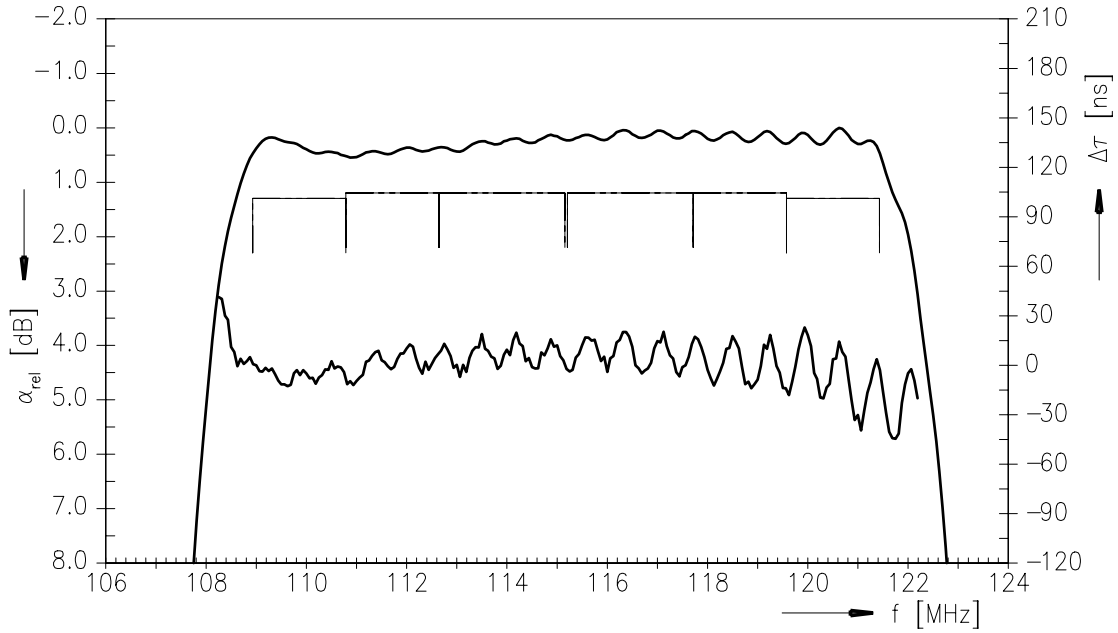
Maximum ratings

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

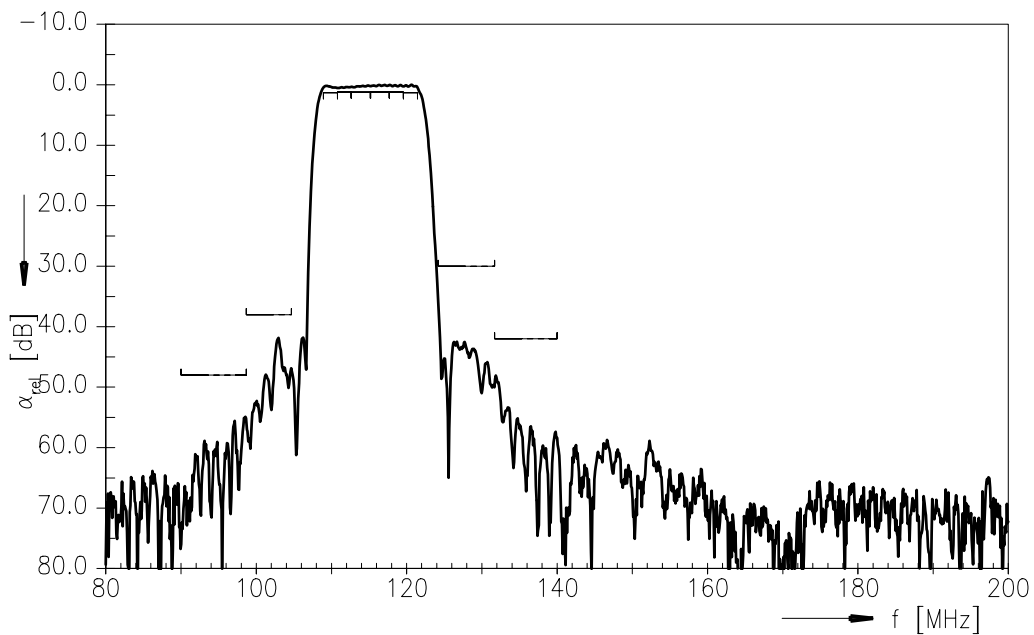
Transfer function




Transfer function (pass band)



Transfer function (wide band)





SAW Components **B1720**

SAW IF filter **115.18 MHz**

Data sheet



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
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."

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

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