



SAW Components

SAW RF low loss filter

Cable modem

Series/type:	B1642
Ordering code:	B39132-B1642-U810
Date:	June 25, 2008
Version:	2.2

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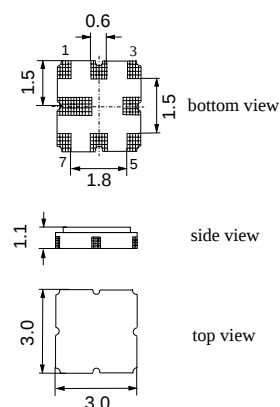
Data Sheet

Application

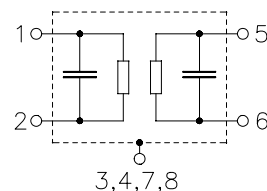
- Low-loss RF filter for cable modem
- Balanced to balanced operation
- Low insertion attenuation
- Low amplitude ripple
- Low group delay ripple
- Usable passband 96.0 MHz


Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Maximum height of 1.225 mm
- Package code QCC8D
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**


Pin configuration

- 1 Input
- 2 Input
- 5 Output
- 6 Output
- 3,7 To be grounded
- 4,8 Case ground, to be grounded

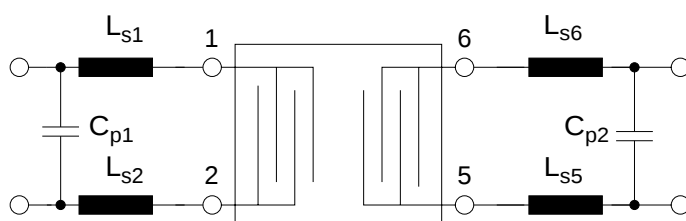


SAW Components
B1642
SAW RF low loss filter
1250.0 MHz
Data Sheet

Characteristics

Temperature range for specification:	$T = 0\text{ }^{\circ}\text{C to } +70\text{ }^{\circ}\text{C}$
Terminating source impedance:	$Z_{Sd} = 180\text{ }\Omega$ (differential) $Z_{Sc} = 45\text{ }\Omega$ (common) and matching network
Terminating load impedance:	$Z_{Ld} = 180\text{ }\Omega$ (differential) $Z_{Lc} = 45\text{ }\Omega$ (common) and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	1250.0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	7.4	8.0	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.0	1.5	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 6MHz band(p-p)	$\Delta\alpha$	—	0.6	1.0	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 8MHz band(p-p)	$\Delta\alpha$	—	0.7	1.1	dB
1202.0 ... 1298.0 MHz					
Group delay ripple (p-p)	$\Delta\tau$	—	28.0	40.0	ns
1202.0 ... 1298.0 MHz					
Group delay ripple in any 8MHz band (p-p)	$\Delta\tau$	—	13.0	25.0	ns
1202.0 ... 1298.0 MHz					
Attenuation	α				
54.0 ... 1052.0 MHz		50	58	—	dB
1052.0 ... 1152.0 MHz		48	55	—	dB
1152.0 ... 1170.0 MHz		38	50	—	dB
1450.0 ... 2429.6 MHz		40	47	—	dB
2429.6 ... 6000.0 MHz		65	70	—	dB

Matching network (element values depend on PCB layout)


$L_{S1} = 10.0\text{ nH}$
 $L_{S2} = 11.0\text{ nH}$
 $C_{p1} = 1.6\text{ pF}$
 $L_{S5} = 9.1\text{ nH}$
 $L_{S6} = 10.0\text{ nH}$
 $C_{p2} = 1.1\text{ pF}$

SAW Components

B1642

SAW RF low loss filter

1250.0 MHz

Data Sheet

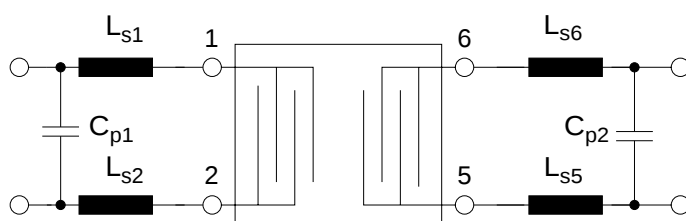


Characteristics

Temperature range for specification:	$T = -40\text{ }^{\circ}\text{C to } +85\text{ }^{\circ}\text{C}$
Terminating source impedance:	$Z_{Sd} = 180\text{ }\Omega$ (differential) $Z_{Sc} = 45\text{ }\Omega$ (common) and matching network
Terminating load impedance:	$Z_{Ld} = 180\text{ }\Omega$ (differential) $Z_{Lc} = 45\text{ }\Omega$ (common) and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	1250.0	—	MHz
Maximum insertion attenuation	α_{max}	—	7.4	8.6	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.0	2.2	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 6MHz band(p-p)	$\Delta\alpha$	—	0.6	1.5	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 8MHz band(p-p)	$\Delta\alpha$	—	0.7	1.7	dB
1202.0 ... 1298.0 MHz					
Group delay ripple (p-p)	$\Delta\tau$	—	28.0	40.0	ns
1202.0 ... 1298.0 MHz					
Group delay ripple in any 8MHz band (p-p)	$\Delta\tau$	—	13.0	30.0	ns
1202.0 ... 1298.0 MHz					
Attenuation	α				
54.0 ... 1052.0 MHz		50	58	—	dB
1052.0 ... 1152.0 MHz		48	55	—	dB
1152.0 ... 1170.0 MHz		38	50	—	dB
1450.0 ... 2429.6 MHz		40	47	—	dB
2429.6 ... 6000.0 MHz		65	70	—	dB

Matching network (element values depend on PCB layout)

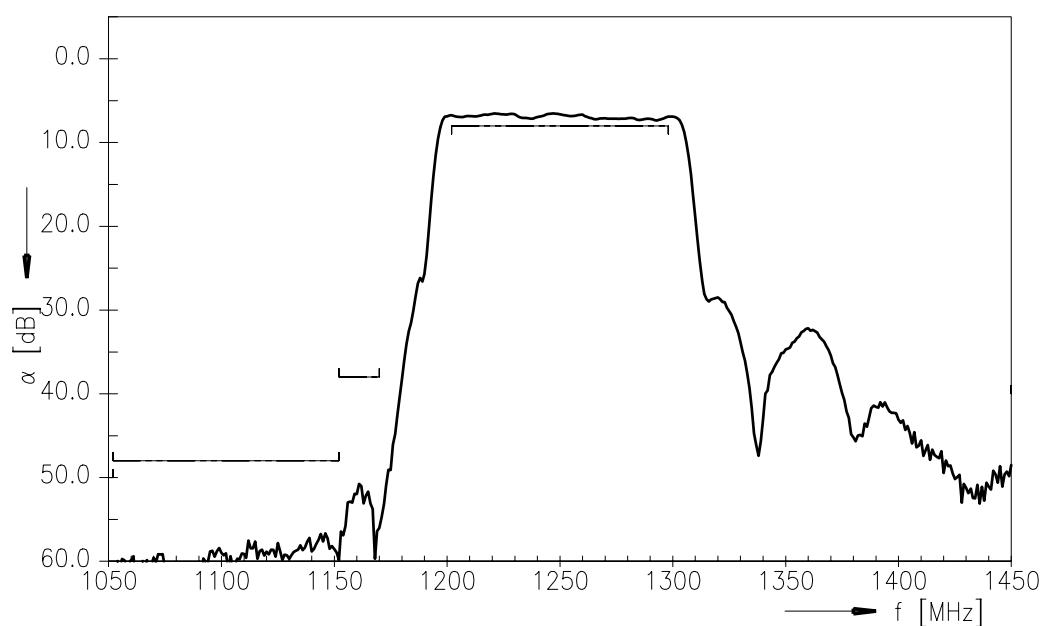


$L_{s1} = 10.0\text{ nH}$
 $L_{s2} = 11.0\text{ nH}$
 $C_{p1} = 1.6\text{ pF}$
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 $L_{s6} = 10.0\text{ nH}$
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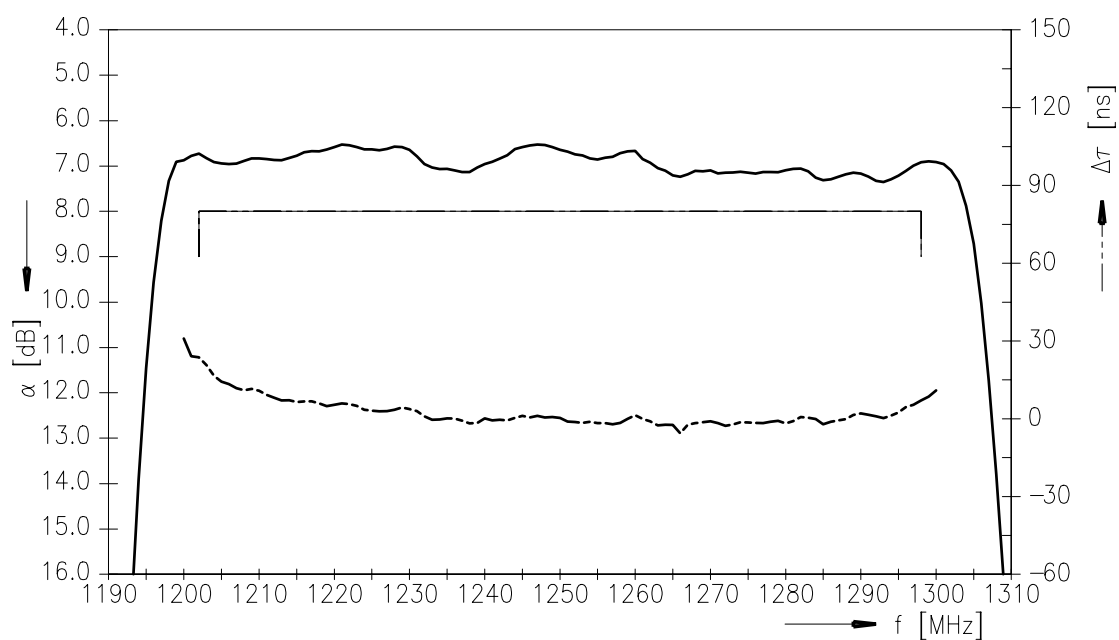
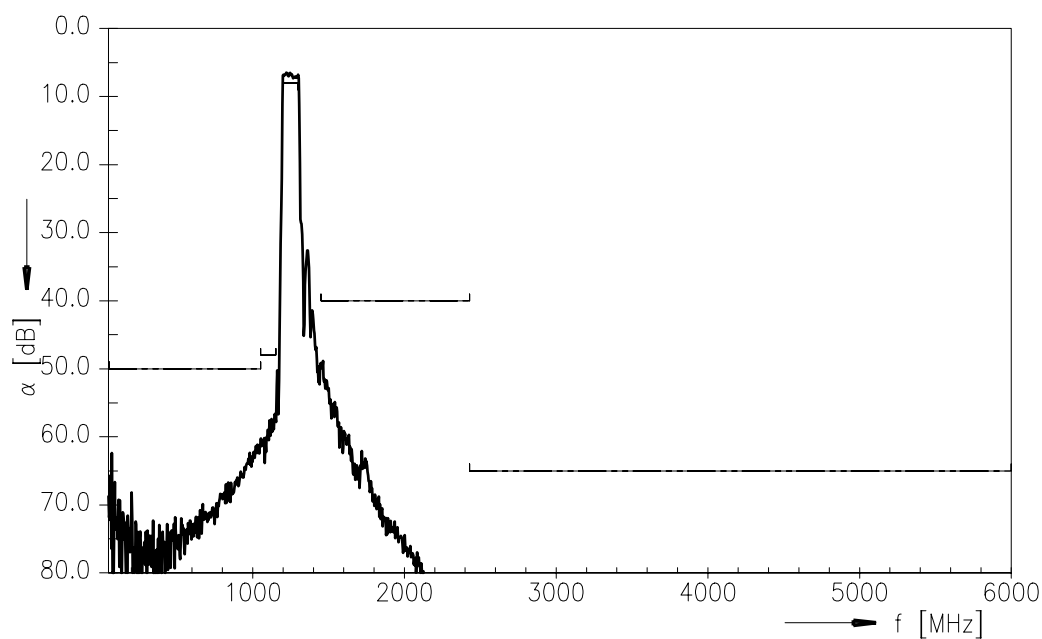
SAW Components
B1642
SAW RF low loss filter
1250.0 MHz
Data Sheet

Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	Tstg	-40/+85	°C	
DC voltage	V _{DC}	0	V	
Source power	P _S	0	dBm	source impedance 180 Ω

Transfer function S_{dd21}


Please read *cautions and warnings* and *important notes* at the end of this document.

Transfer function S_{dd21} (passband)

Transfer function S_{dd21} (wideband)


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Data Sheet


References

Type	B1642
Ordering code	B39132-B1642-U810
Marking and package	C61157-A7-A72
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B1642_NB_UN.s4p B1642_WB_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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Surface Acoustic Wave Components Division

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