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RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

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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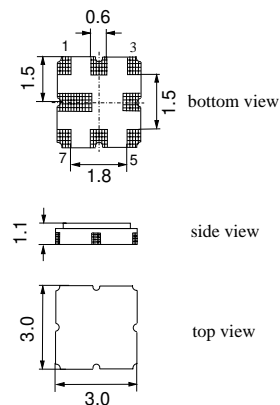
Data Sheet

Application

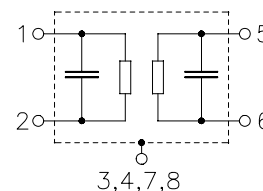
- Low-loss RF filter for cable modem
- Balanced to balanced operation
- Low insertion attenuation
- Low amplitude ripple
- Low group delay ripple
- Usable passband 96.0 MHz


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

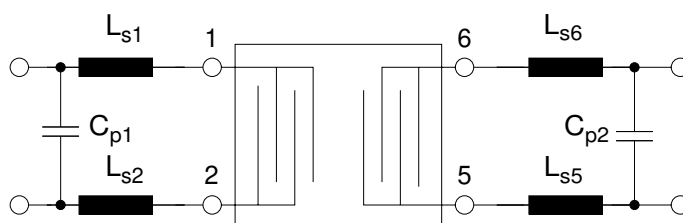


SAW Components
B1642
SAW RF low loss filter
1250.0 MHz
Data Sheet

Characteristics

Temperature range for specification:	T = 0 °C to +70 °C
Terminating source impedance:	Z _{Sd} = 180 Ω (differential) Z _{Sc} = 45 Ω (common) and matching network
Terminating load impedance:	Z _{Ld} = 180 Ω (differential) Z _{Lc} = 45 Ω (common) and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	—	1250.0	—	MHz
Maximum insertion attenuation	α _{max}	—	7.4	8.0	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple (p-p)	Δα	—	1.0	1.5	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 6MHz band(p-p)	Δα	—	0.6	1.0	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 8MHz band(p-p)	Δα	—	0.7	1.1	dB
1202.0 ... 1298.0 MHz					
Group delay ripple (p-p)	Δτ	—	28.0	40.0	ns
1202.0 ... 1298.0 MHz					
Group delay ripple in any 8MHz band (p-p)	Δτ	—	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)


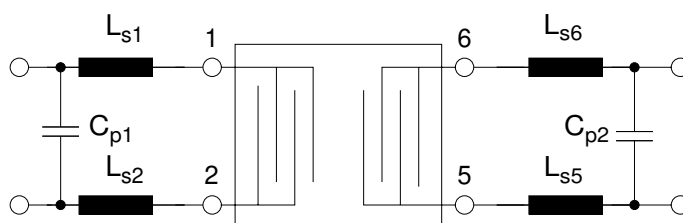
L_{s1} = 10.0 nH
 L_{s2} = 11.0 nH
 C_{p1} = 1.6 pF
 L_{s5} = 9.1 nH
 L_{s6} = 10.0 nH
 C_{p2} = 1.1 pF

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

Characteristics

Temperature range for specification:	T = -40 °C to +85 °C
Terminating source impedance:	Z _{Sd} = 180 Ω (differential)
	Z _{Sc} = 45 Ω (common)
	and matching network
Terminating load impedance:	Z _{Ld} = 180 Ω (differential)
	Z _{Lc} = 45 Ω (common)
	and matching network

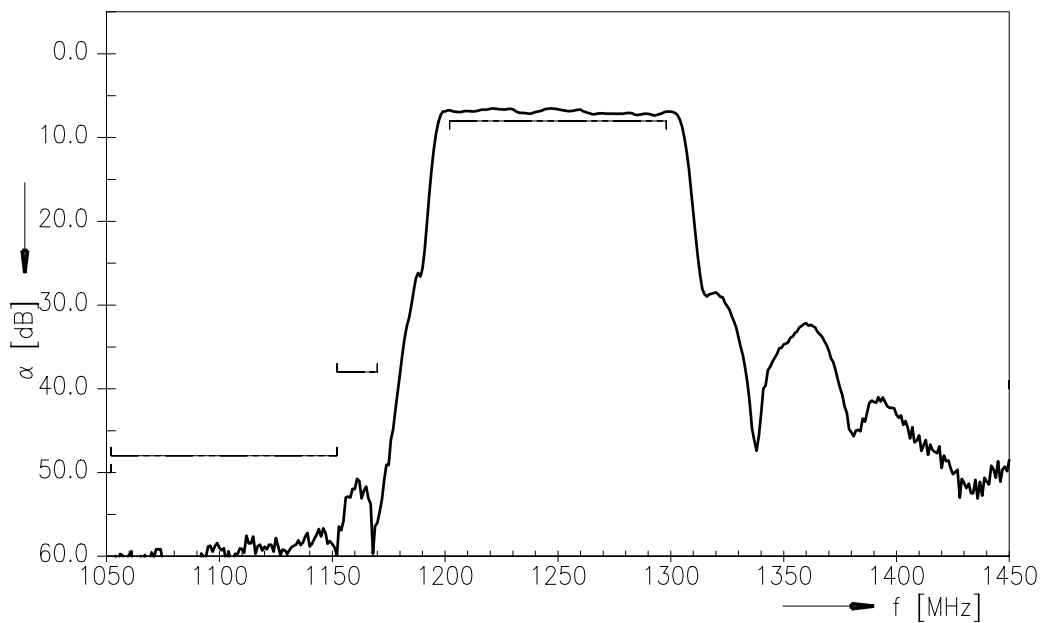
		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	—	1250.0	—	MHz
Maximum insertion attenuation	α _{max}	—	7.4	8.6	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple (p-p)	Δα	—	1.0	2.2	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 6MHz band(p-p)	Δα	—	0.6	1.5	dB
1202.0 ... 1298.0 MHz					
Amplitude ripple in any 8MHz band(p-p)	Δα	—	0.7	1.7	dB
1202.0 ... 1298.0 MHz					
Group delay ripple (p-p)	Δτ	—	28.0	40.0	ns
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Group delay ripple in any 8MHz band (p-p)	Δτ	—	13.0	30.0	ns
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Matching network (element values depend on PCB layout)


L_{s1} = 10.0 nH
 L_{s2} = 11.0 nH
 C_{p1} = 1.6 pF
 L_{s5} = 9.1 nH
 L_{s6} = 10.0 nH
 C_{p2} = 1.1 pF

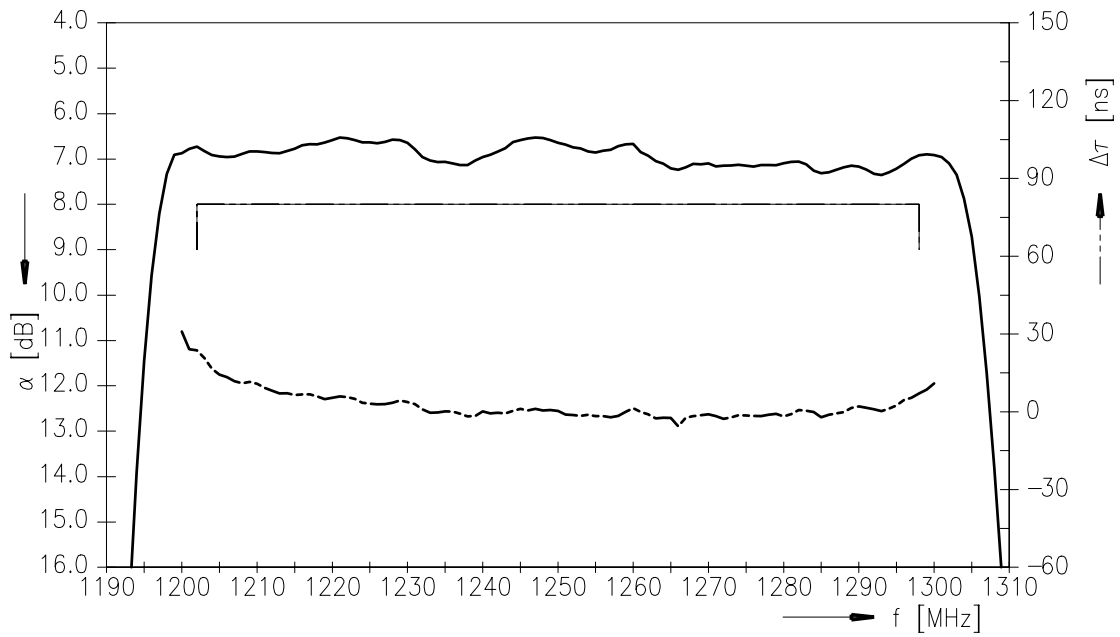

Maximum ratings

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	0	dBm	source impedance 180 Ω

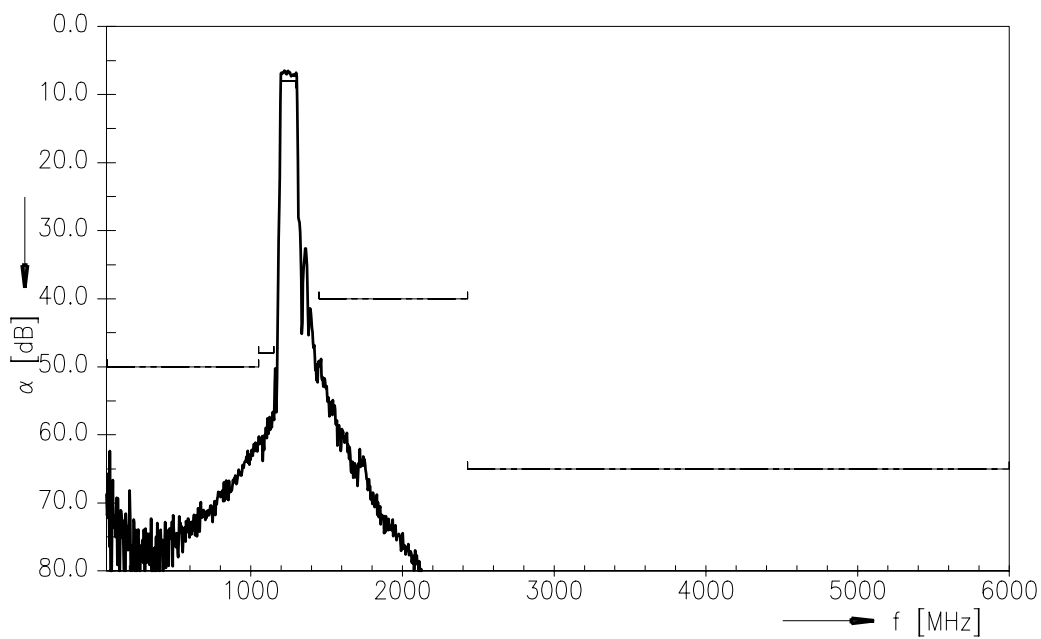
Transfer function S_{dd21}




Transfer function S_{dd21} (passband)



Transfer function S_{dd21} (wideband)




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."

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Published by EPCOS AG
Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY

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