



SAW Components

SAW RF low loss filter

Satellite CSS

Series/type:	B1653
Ordering code:	B39122-B1653-B510
Date:	December 18, 2009
Version:	2.0



Data sheet



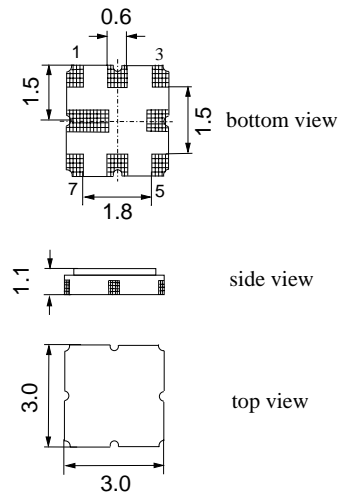
Application

- Low loss RF filter for satellite CSS
- Usable passband 40.0 MHz
- Balanced to balanced operation



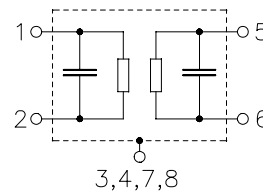
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Maximum height of 1.225 mm
- Package code QCC8F
- 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





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1178.12 MHz

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Characteristics

Temperature range for specification: $T = -40\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 150\ \Omega$ (balanced) and matching network
 Terminating load impedance: $Z_L = 150\ \Omega$ (balanced) and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	1178.12	—	MHz
Maximum insertion attenuation 1158.12 ... 1198.12 MHz	α_{max}	—	2.8	4.5	dB
Pass bandwidth $\alpha_{rel} \leq 1.5\text{ dB}$	$B_{1.5\text{ dB}}$	—	54.1	—	MHz
Amplitude ripple (p-p) 1158.12 ... 1198.12 MHz	$\Delta\alpha$	—	1.0	2.0	dB
Input return loss		8.0	12.5	—	dB
Output return loss		8.0	12.5	—	dB
Group delay ripple (p-p) 1158.12 ... 1198.12 MHz	$\Delta\tau$	—	15.0	45.0	ns
Differential to common mode ratio ($ S_{dd21}/S_{cd21} $) 1158.12 ... 1198.12 MHz		22.0	30.0	—	dB
Deviation from linear phase (rms) in any 30 MHz band 1158.12 ... 1198.12 MHz		—	5.0	7.0	°
Relative attenuation (relative to α_{max})	α				
50.00 ... 1096.06 MHz		42.0	46.0	—	dB
1260.18 ... 2000.00 MHz		36.0	40.0	—	dB
2000.00 ... 6000.00 MHz		15.0	—	—	



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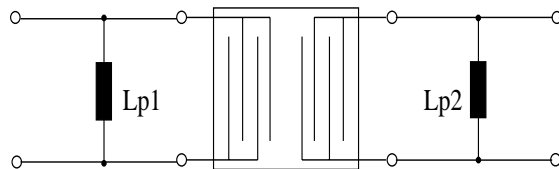
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Matching network (element values depend on PCB layout)



$L_{p1} = 27\text{nH}$

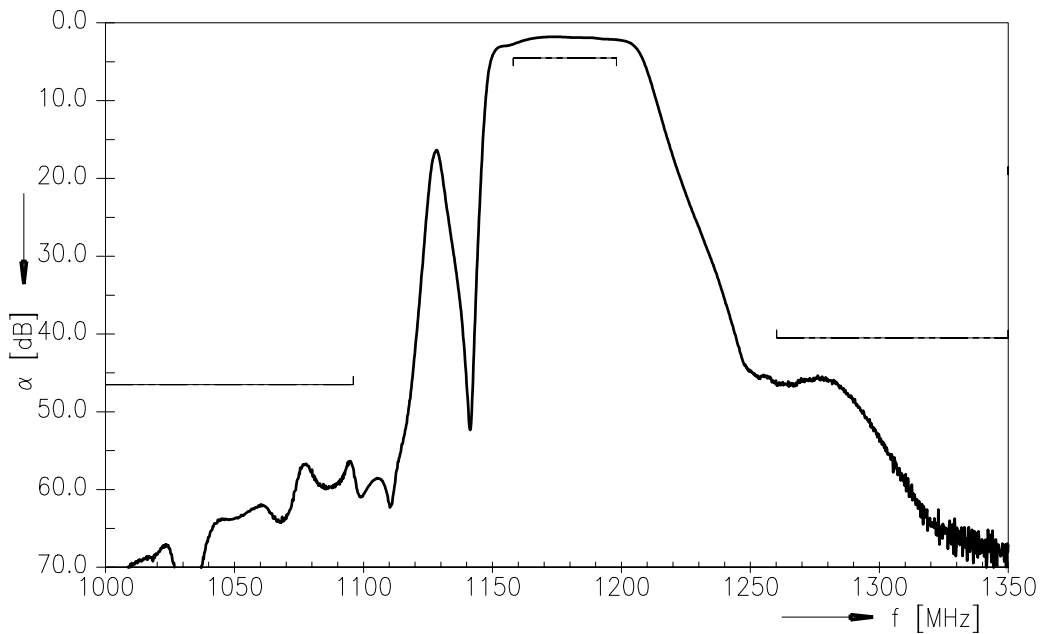
$L_{p2} = 27\text{nH}$

Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 1 pulse
Input power at 1158.12... 1198.12 MHz	P _{IN}	0	dBm	source impedance 150 Ω

1) acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulse.

Transfer function



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



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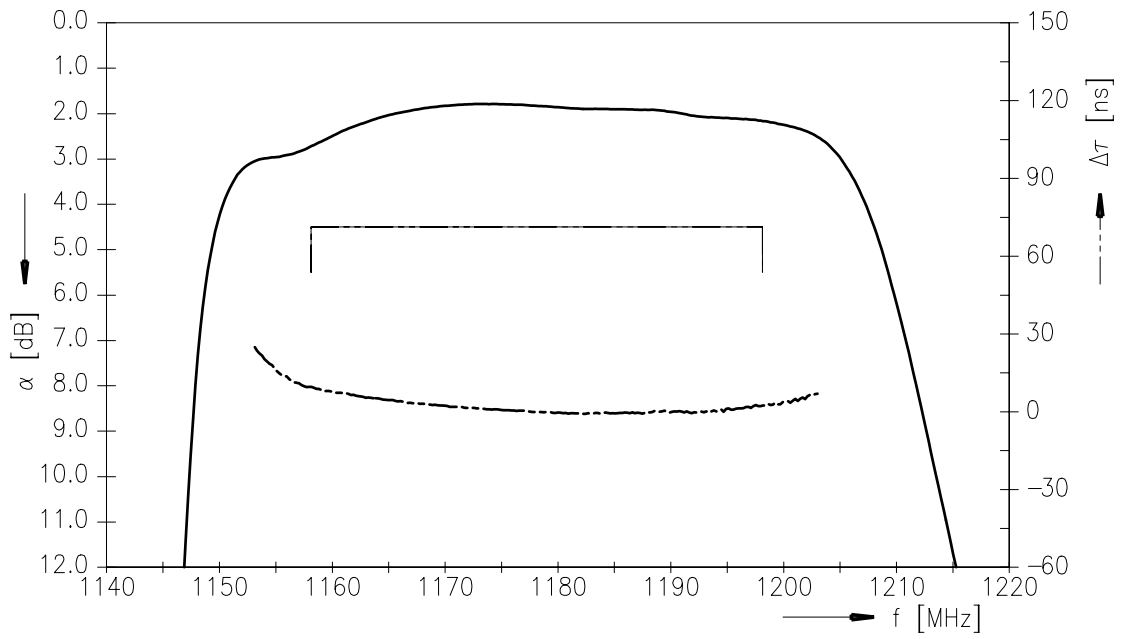
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Transfer function (passband)



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References

Type	B1653
Ordering code	B39122-B1653-B510
Marking and package	C61157-A7-A72
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B1653_NB.s4p See file header for port/pin assignment table.
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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