SAW Components

SAW RF low loss filter

Satellite CSS

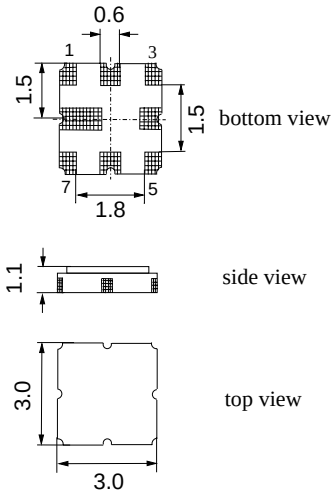
Series/type:	**B1653**
Ordering code:	**B39122-B1653-B510**
Date:	December 18, 2009
Version:	2.0

Application

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

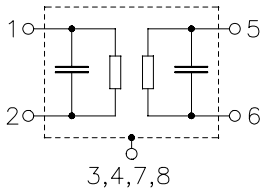
Features

- Package size 3.0 x 3.0 x 1.1 mm^3
- Maximum height of 1.225 mm
- Package code QCC8F
- RoHS compatible
- Approximate weight 0.037 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

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

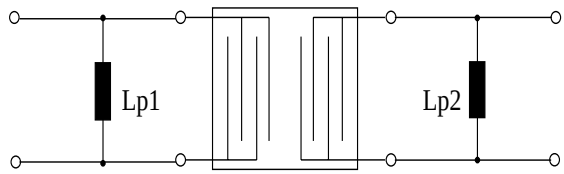


Characteristics

Temperature range for specification: T = –40 ˚C to +85 ˚C
Terminating source impedance: Z_S = 150 Ω (balanced) and matching network
Terminating load impedance: Z_L = 150 Ω (balanced) and matching network

		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	1178.12	—	MHz
Maximum insertion attenuation	α_{max}				
1158.12 ... 1198.12 MHz		—	2.8	4.5	dB
Pass bandwidth					
$\alpha_{rel} \leq$ 1.5 dB	$B_{1.5\ dB}$	—	54.1	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
1158.12 ... 1198.12 MHz		—	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)	$\Delta\tau$				
1158.12 ... 1198.12 MHz		—	15.0	45.0	ns
Differential to common mode ratio ($\lvert S_{dd21}/S_{cd21} \rvert$)					
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	—	—	

Matching network (element values depend on PCB layout)



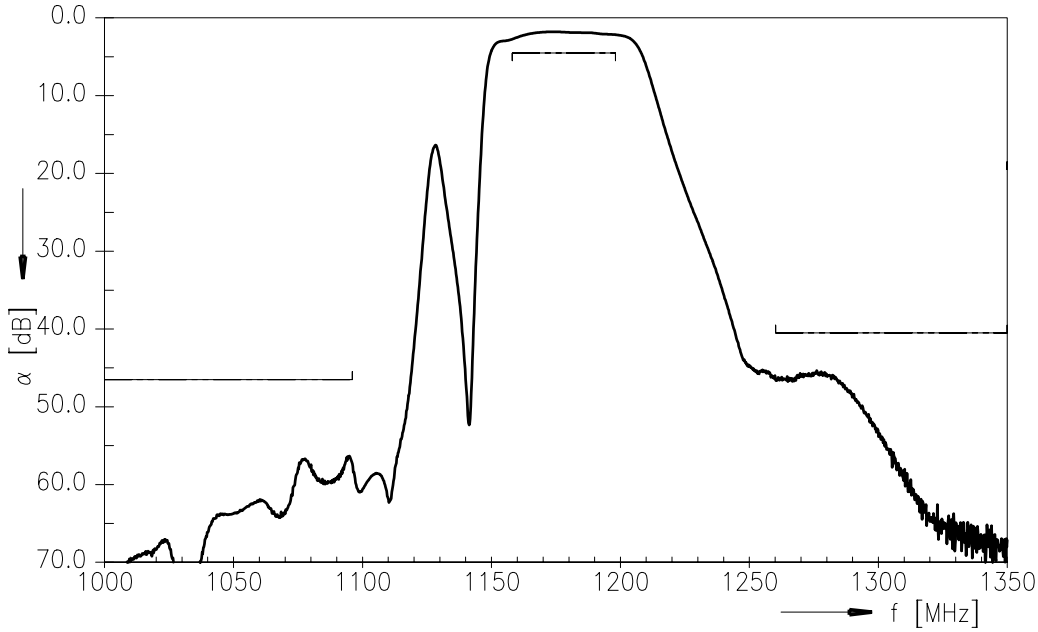
L_{p1} = 27nH
L_{p2} = 27nH

Maximum ratings

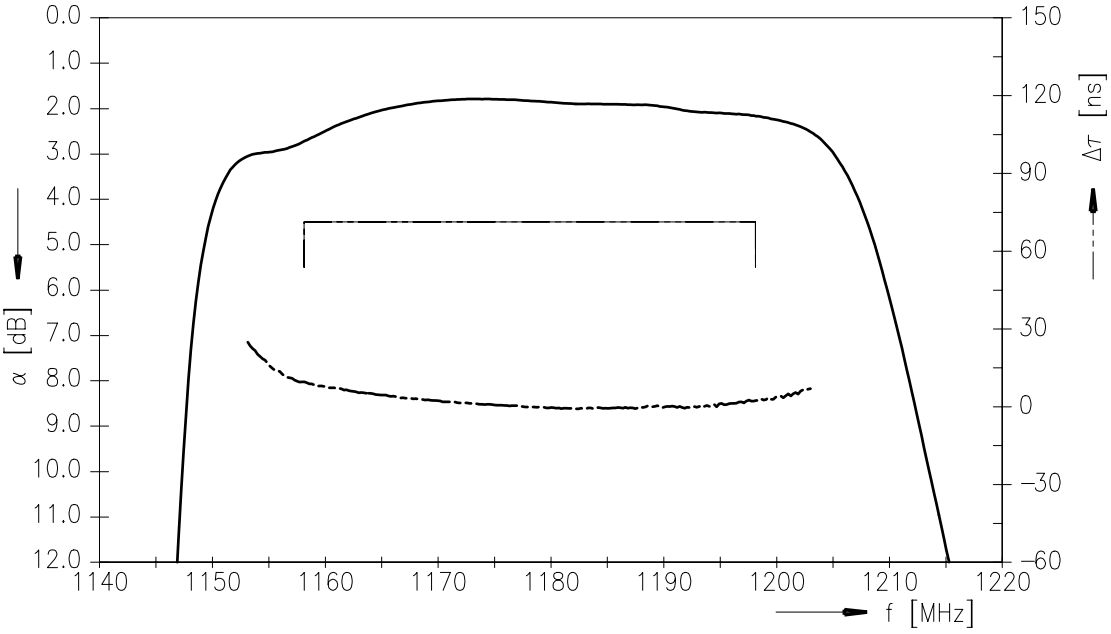
Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 1 pulse
Input power at				
1158.12... 1198.12 MHz	P_{IN}	0	dBm	source impedance 150 Ω

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

Transfer function



Transfer function (passband)



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."

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