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RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

SAW Components

SAW RF low loss filter

Satellite CSS

Series/type:	B1650
Ordering code:	B39202B1650B510
Date:	December 10, 2012
Version:	2.0

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SAW Components**B1650****SAW RF low loss filter****2040.0 MHz**

Data sheet

**Revision History: Changes compared to previous iteration issue**

ISSUE	ORIGINATOR	DETAIL SPEC CHANGES	DATE
DGLW72S01			
0.1	HuA	Initial release	12.03.2010
LW72A			
1.0	HuA	First sample run release	12.05.2010
LW72B			
1.0	QuekJ	Improvement of CMDR and stop band attenuation	14.01.2011
LW72C			
1.0	QuekJ	Improvement of insertion attenuation	27.06.2011
1.1	HuA	Revision history page included	17.10.2011
2.0	HuA	Mass Production release	10.12.2012

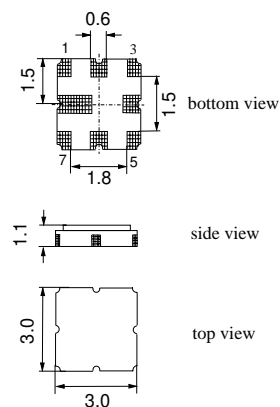
Data sheet

Application

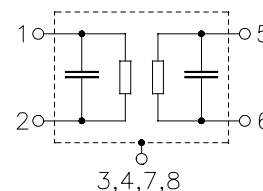
- Low loss RF filter for satellite CSS
- Usable passband 60.0 MHz
- Balanced to balanced operation


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, to be grounded



SAW Components
B1650
SAW RF low loss filter
2040.0 MHz

Data sheet

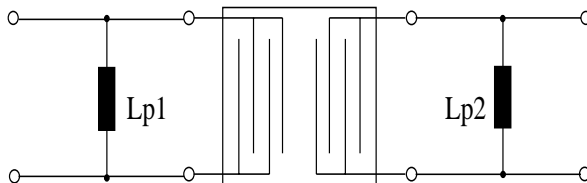

Characteristics

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	—	2040.0	—	MHz
Maximum insertion attenuation 2010.0 ... 2070.0 MHz	α_{\max}	—	4.1	5.0	dB
Pass bandwidth $\alpha_{\text{rel}} \leq 1.5\text{ dB}$	$B_{1.5\text{ dB}}$	—	79.0	—	MHz
Amplitude ripple (p-p) 2010.0 ... 2070.0 MHz	$\Delta\alpha$	—	1.2	2.0	dB
Input return loss		7.4	9.5	—	dB
Output return loss		7.4	9.5	—	dB
Group delay ripple (p-p) 2010.0 ... 2070.0 MHz	$\Delta\tau$	—	20.0	40.0	ns
CMDR 2010.0 ... 2070.0 MHz		20.0	27.0	—	dB
Deviation from linear phase (rms) in any 30 MHz band 2010.0 ... 2070.0 MHz		—	4.0	6.0	°
Attenuation	α				
50.0 ... 1950.0 MHz		40	48	—	dB
2130.0 ... 3000.0 MHz		40	43	—	dB
3000.0 ... 6000.0 MHz		35	46	—	dB

SAW Components
B1650
SAW RF low loss filter
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Data sheet


Matching network (element values depend on PCB layout)


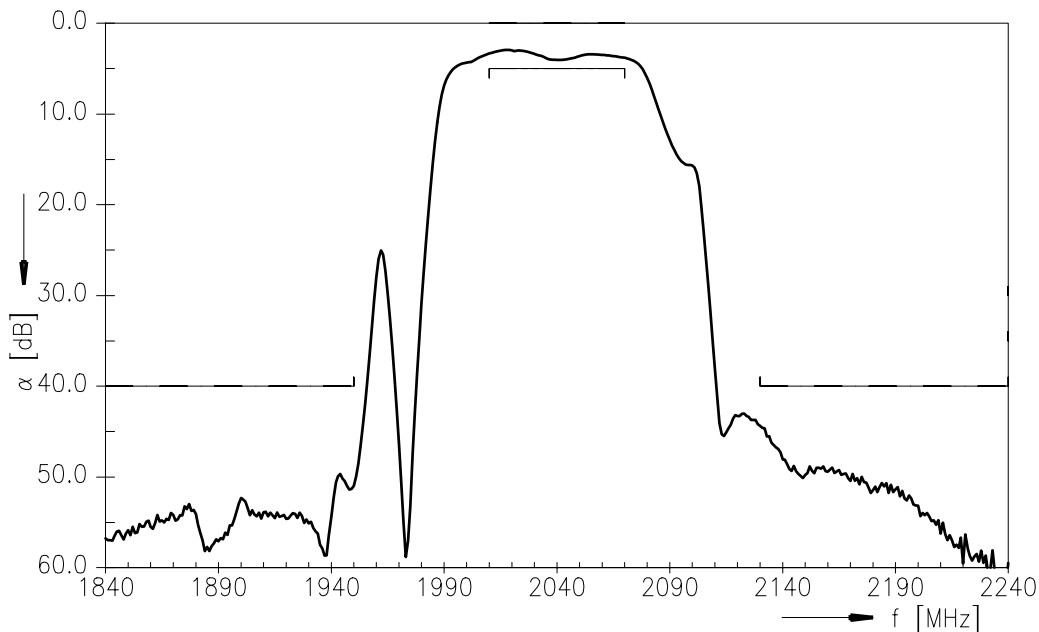
$$L_{p1} = 12 \text{ nH}$$

$$L_{p2} = 12 \text{ nH}$$

Maximum ratings

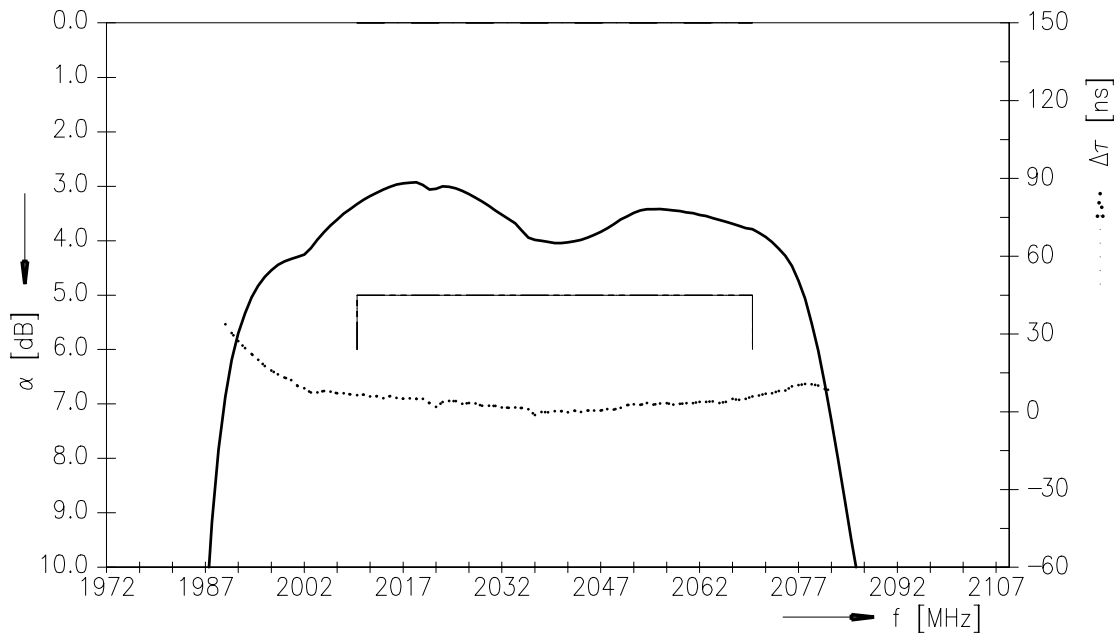
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 1 pulse
Input power at 1390.0... 1450.0 MHz	P _{IN}	0	dBm	source impedance 150 Ω

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

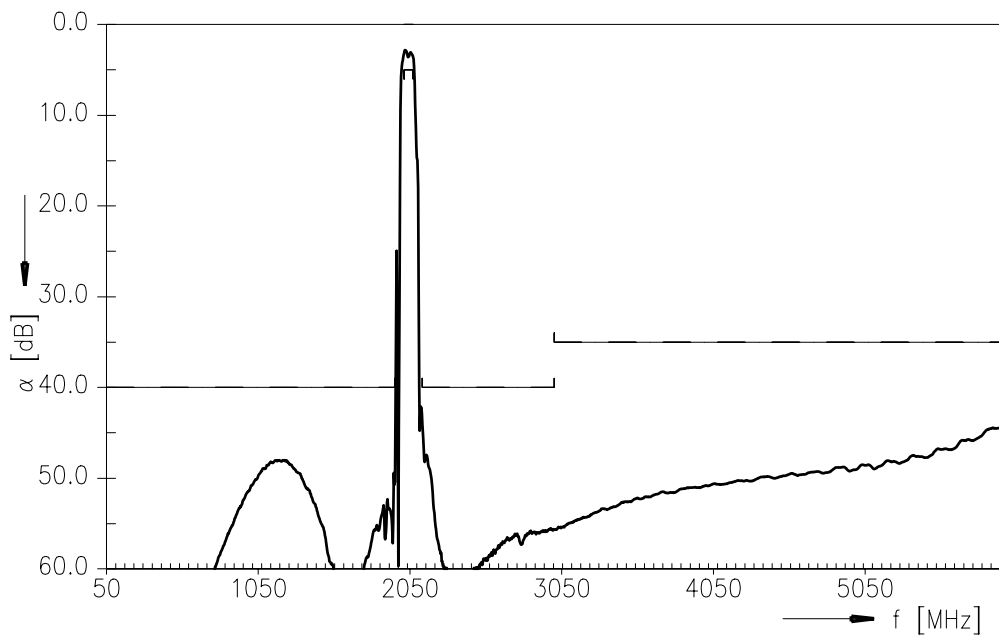
Transfer function S_{dd21}

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



Transfer function S_{dd21} (passband)



Transfer function S_{dd21} (wideband)




References

Type	B1650
Ordering code	B39202B1650B510
Marking and package	C61157-A7-A72
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B1650_NB.s4p; B1650_WB.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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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

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