SAW Components

SAW filter

MediaFLO

Series/type:	**B7738**
Ordering code:	**B39721B7738K710**
Date:	May 16, 2006
Version:	2.0

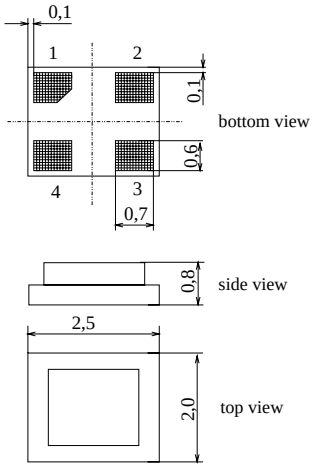
EPCOS

Application

- Low-loss RF filter for MediaFLO TV application in mobile telephone systems
- High selectivity
- Usable passband: 5 MHz
- No matching required for operation at 50Ω

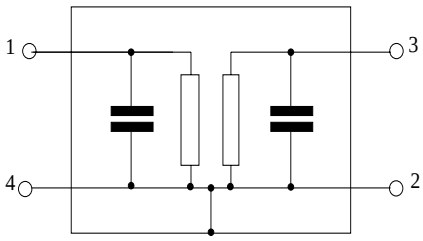
Features

- Package size 2.5 x2.0 x 0.8 mm^3
- Package code DCS4H
- RoHS compatible
- Approximate weight 0.015 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
- 3 Output
- 2,4 To be grounded



Data sheet SMD

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	719.0	—	MHz
Maximum insertion attenuation	α_{max}				
716.5 ... 721.5MHz		—	2.6	3.0	dB_{INT} 1)
Amplitude ripple (p-p)	Δα				
716.5 ... 721.5MHz		—	0.4	2.0	dB
Return Loss (Input/Output)					
716.5 ... 721.5MHz		10.0	16.0	—	
Group delay ripple (p-p)					
716.5 ... 721.5MHz		—	20	80	ns
Attenuation	α				
0.1 ... 690.0MHz		40.0	46.0	—	dB
690.0 ... 704.0MHz		35.0	40.0	—	dB
704.0 ... 710.0MHz		30.0	40.0	—	dB_{INT}
710.0 ... 716.0MHz		4.5 2)	9.5	—	dB_{INT}
722.0 ... 728.0MHz		4.5 3)	9.0	—	dB_{INT}
728.0 ... 734.0MHz		30.0	36.0	—	dB_{INT}
734.0 ... 750.0MHz		29.0	34.0	—	dB
750.0 ... 824.0MHz		40.0	45.0	—	dB
824.0 ... 960.0MHz		45.0	50.0	—	dB
960.0 ... 2500.0MHz		32.0	37.0	—	dB

1) dB_{INT} is integrated rejection (see formula below)

$$dB_{INT} = \frac{\sum_{2}^{N} \frac{Loss(F_{n-1}) + Loss(F_n)}{2} \times (F_n - F_{n-1})}{F_N - F_1}$$

Where $Loss(F_n) = 10^{(S_{21}indB)/20}$

N = Number of frequency, insertion pairs

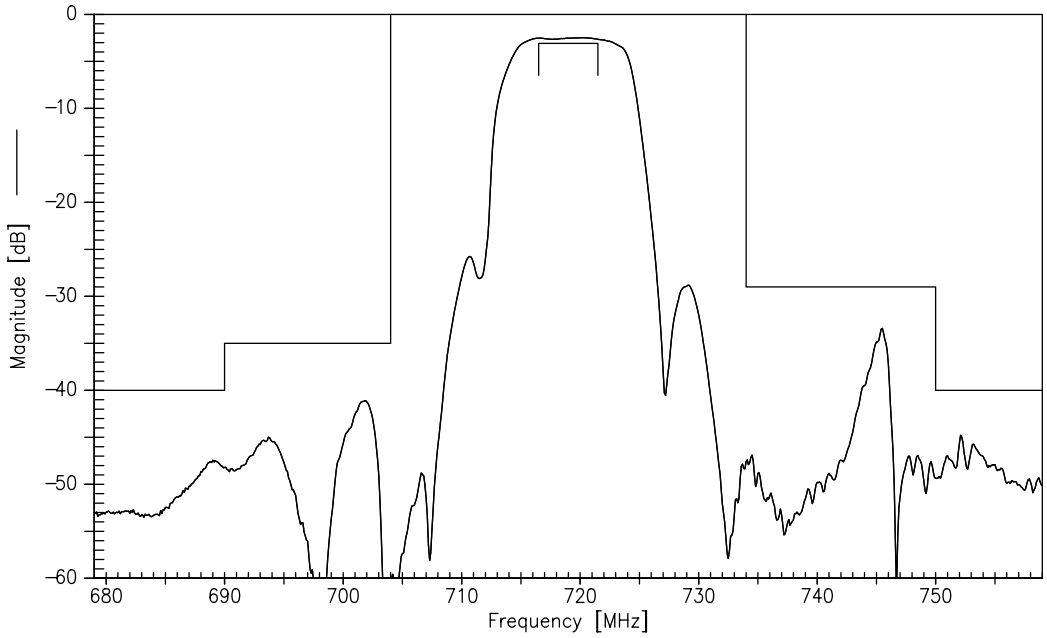
2) 7.0dB_{INT} at 25˚C
3) 7.0dB_{INT} at 25˚C

Maximum ratings

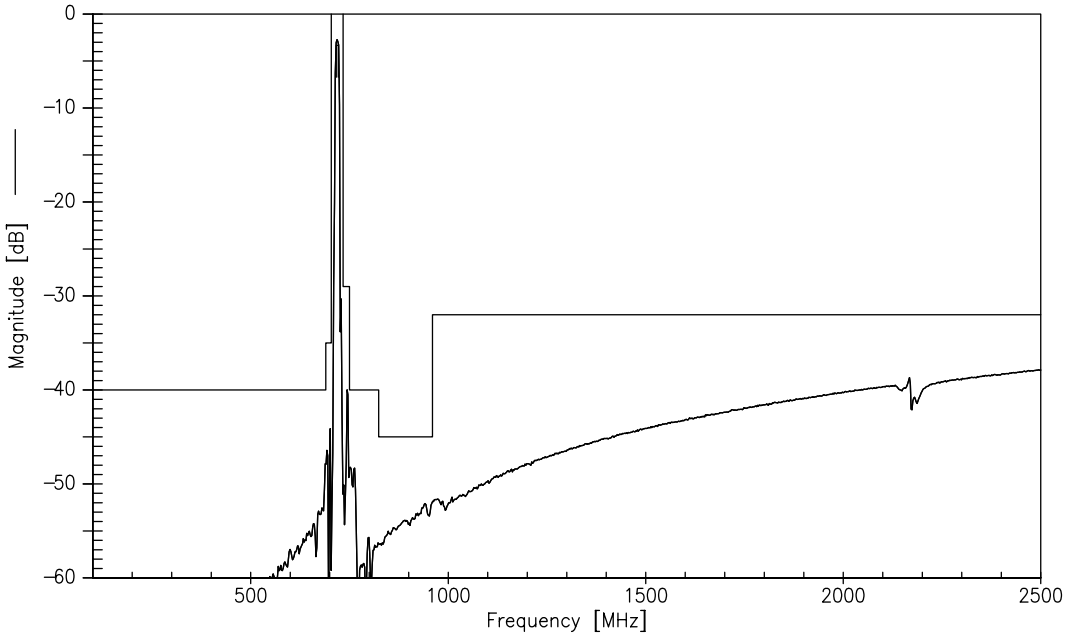
Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	3	V	
ESD voltage	V_{ESD}	100[1)]	V	machine model, 10 pulses
Input power at 400.0 ... 500.0MHz 800.0 ... 2500.0MHz	P_{IN}	15	dBm	CW

1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

Transfer function

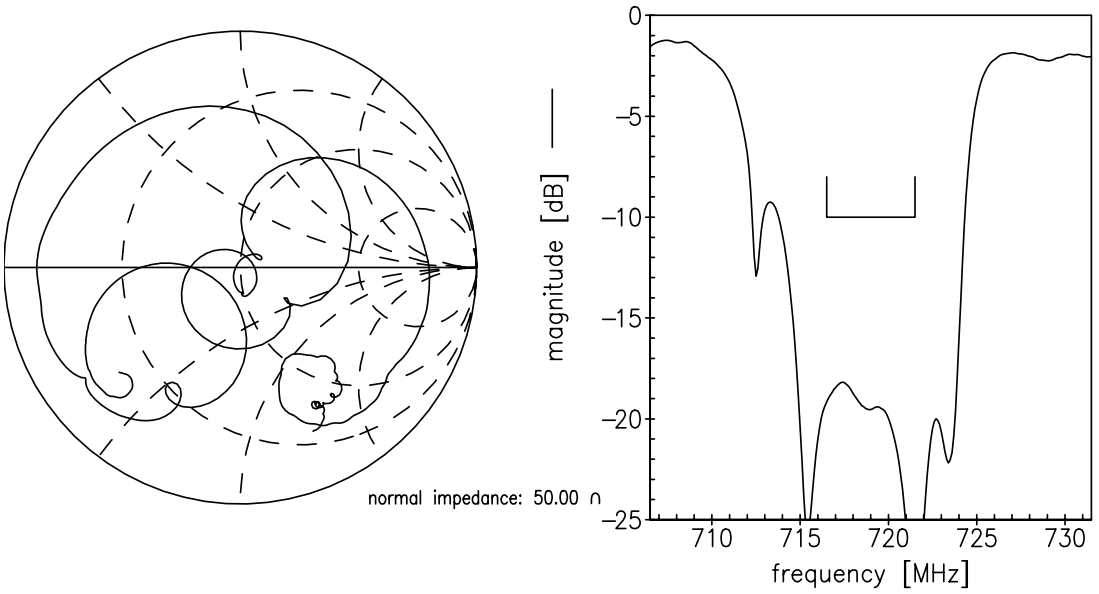


Transfer function (wideband)

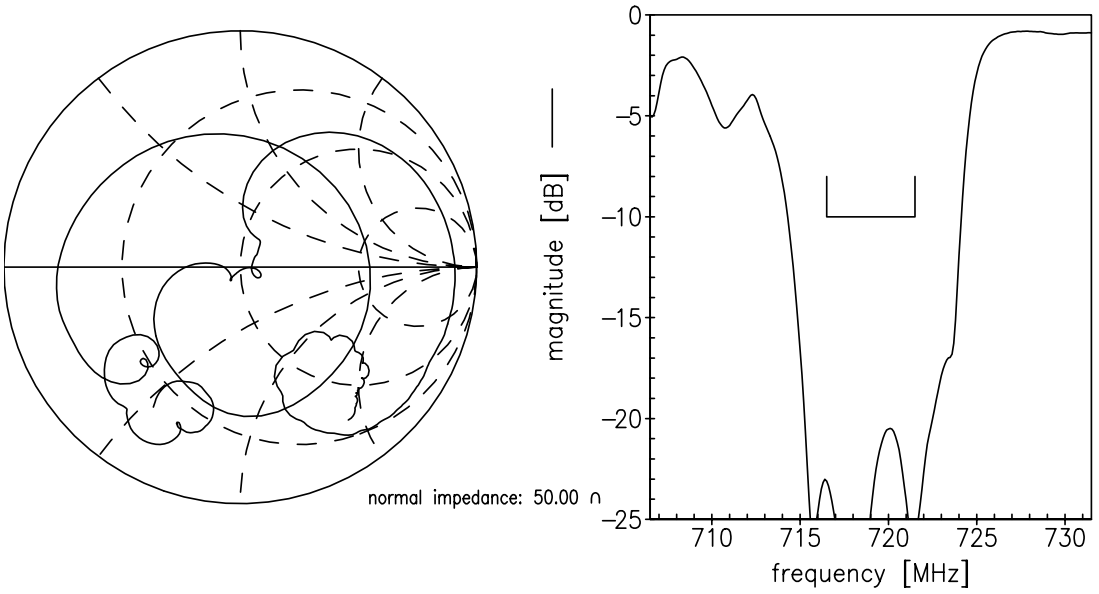


Smith charts

S_{11} function



S_{22} function



References

Type	B7738
Ordering code	B39721B7738K710
Marking and package	C61157-A7-A80
Packaging	F61074-V8189-Z000
Date codes	L_1126
S-parameters	B7738_NB.s2p B7738_WB.s2p
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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