



SAW Components

SAW band–stop filter

ISDB–T

Series/type:	B8740
Ordering code:	B39911-B8740-P810
Date:	September 22, 2010
Version:	2.0



SAW Components

B8740

SAW band-stop filter

832.0 / 911.5 MHz

Data Sheet



Revision history: changes compared to previous iteration issue

ISSUE	ORIGINATOR	DETAILED SPECIFICATION CHANGES	DATE
LY01A_v1.0	M. Jungkunz	initial release	Nov 12, 2009
B8740_v1.0	TAY Wee Chuan	adaption of specification for maximum and minimum insertion attenuation and suppression levels	Jul 12, 2010
B8740_v2.0	TAY Wee Chuan	data sheet release	Sept 22, 2010



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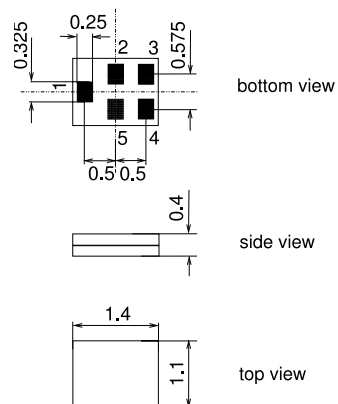
Application

- Low-loss RF band-stop filter for ISDB-T
- Low insertion loss
- Low amplitude ripple and group delay ripple
- Usable pass band width 300 MHz
- Impedance at input and output 50 Ω
- Unbalanced to unbalanced operation



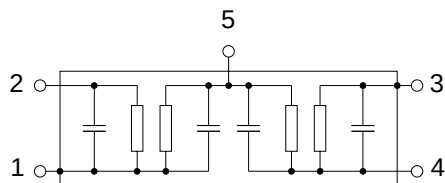
Features

- Package size $1.4 \times 1.1 \times 0.4 \text{ mm}^3$
- Maximum height of 0.45 mm
- Package code QCT5I
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 1 Input
- 2 Coupling pin
- 3 Coupling pin
- 4 Output
- 5 Case ground





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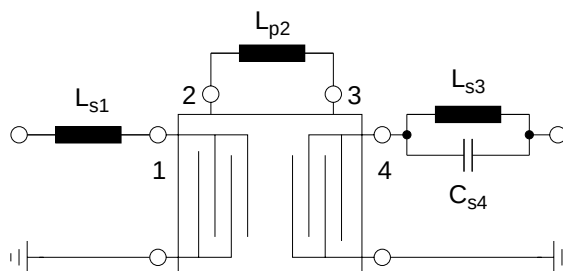


Characteristics (including losses in the matching network)

Temperature range for specification: $T = +25\text{ °C} \pm 2\text{ °C}$
Terminating source impedance: $Z_S = 50\ \Omega$ and matching network
Terminating load impedance: $Z_L = 50\ \Omega$ and matching network

		min.	typ. @ 25 °C	max.	
Nominal center frequency	f_N	—	832.0 911.5	—	MHz
Minimum insertion attenuation	$\alpha_{\min}$	—	1.1	1.3	dB
470.00 ... 770.00 MHz		—			
Maximum insertion attenuation	$\alpha_{\max}$	—	1.7	1.9	dB
470.00 ... 710.00 MHz		—			
710.00 ... 770.00 MHz		—	2.7	3.3	dB
Attenuation	α				
90.00 ... 222.00 MHz		15.0	17.0	—	dB
824.00 ... 840.00 MHz		41.0	43.0	—	dB
898.00 ... 925.00 MHz		44.0	46.0	—	dB
1427.90 ... 1452.90 MHz		48.0	53.0	—	dB
1749.90 ... 1784.90 MHz		45.0	50.0	—	dB
1920.00 ... 1980.00 MHz		46.0	51.0	—	dB
Group delay ripple (p-p)	$\Delta\tau$	—	6	—	ns
470.00 ... 770.00 MHz		—			

Matching network (element values depend on PCB layout)



$L_{s1} = 22\text{ nH}$
 $L_{p2} = 36\text{ nH}$
 $L_{s3} = 16\text{ nH}$
 $C_{s4} = 0.7\text{ pF}$

Q factor of inductors:
40 @ 770 MHz



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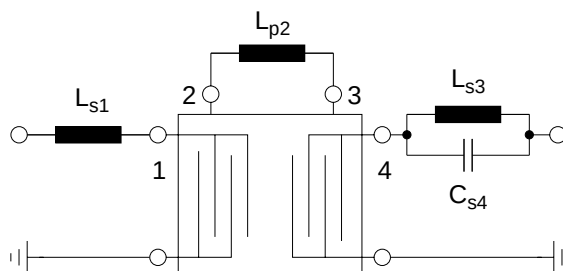


Characteristics (including losses in the matching network)

Temperature range for specification: $T = -30\text{ °C to }+85\text{ °C}$
Terminating source impedance: $Z_S = 50\ \Omega$ and matching network
Terminating load impedance: $Z_L = 50\ \Omega$ and matching network

		min.	typ. @ 25 °C	max.	
Nominal center frequency	f_N	—	832.0 911.5	—	MHz
Minimum insertion attenuation	$\alpha_{\min}$	—	1.1	1.3	dB
470.00 ... 770.00 MHz		—			
Maximum insertion attenuation	$\alpha_{\max}$	—	1.7	2.2	dB
470.00 ... 710.00 MHz		—			
710.00 ... 770.00 MHz		—	2.7	4.2	dB
Attenuation	α				
90.00 ... 222.00 MHz		14.0	17.0	—	dB
824.00 ... 840.00 MHz		36.0	43.0	—	dB
898.00 ... 925.00 MHz		40.0	46.0	—	dB
1427.90 ... 1452.90 MHz		48.0	53.0	—	dB
1749.90 ... 1784.90 MHz		45.0	50.0	—	dB
1920.00 ... 1980.00 MHz		46.0	51.0	—	dB
Group delay ripple (p-p)	$\Delta\tau$	—	6	—	ns
470.00 ... 770.00 MHz		—			

Matching network (element values depend on PCB layout)



$L_{s1} = 22\text{ nH}$
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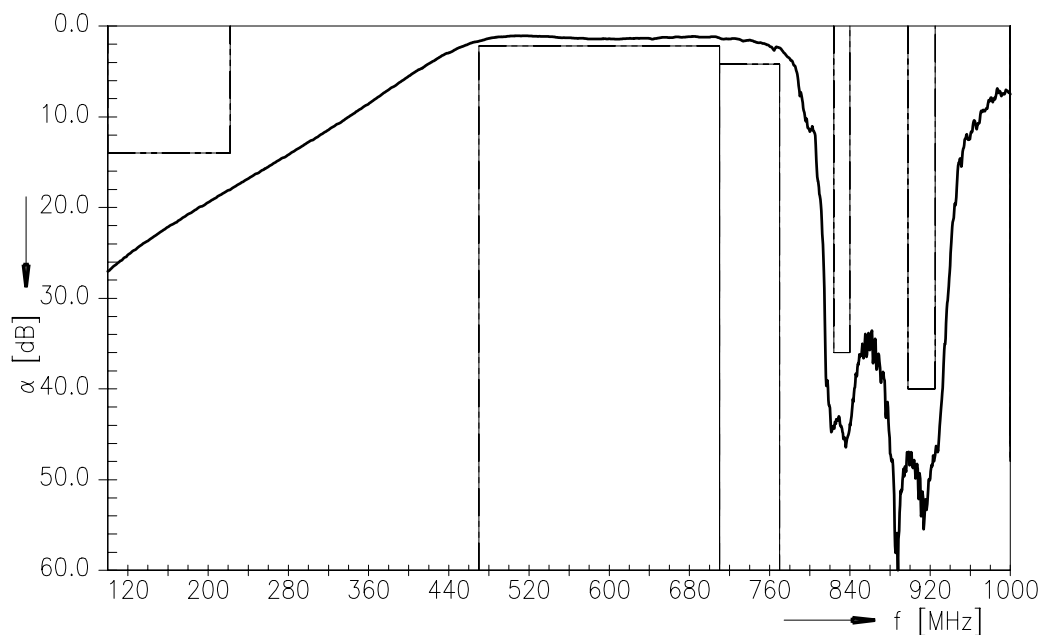


Maximum ratings

Operable temperature range	T	−30/+85	°C	
Storage temperature range	T _{stg}	−40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	machine model, 10 pulses
Source power at 824 ... 840 MHz				
898 ... 925 MHz	P _{IN}	21	dBm	peak power of (W-)CDMA signal

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

Transfer function





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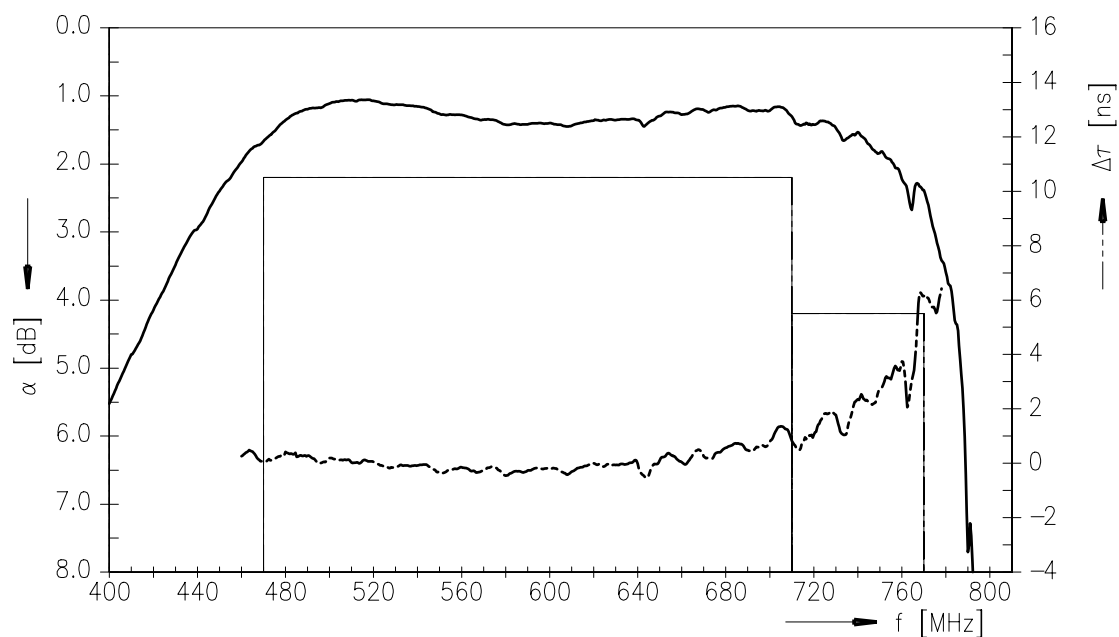
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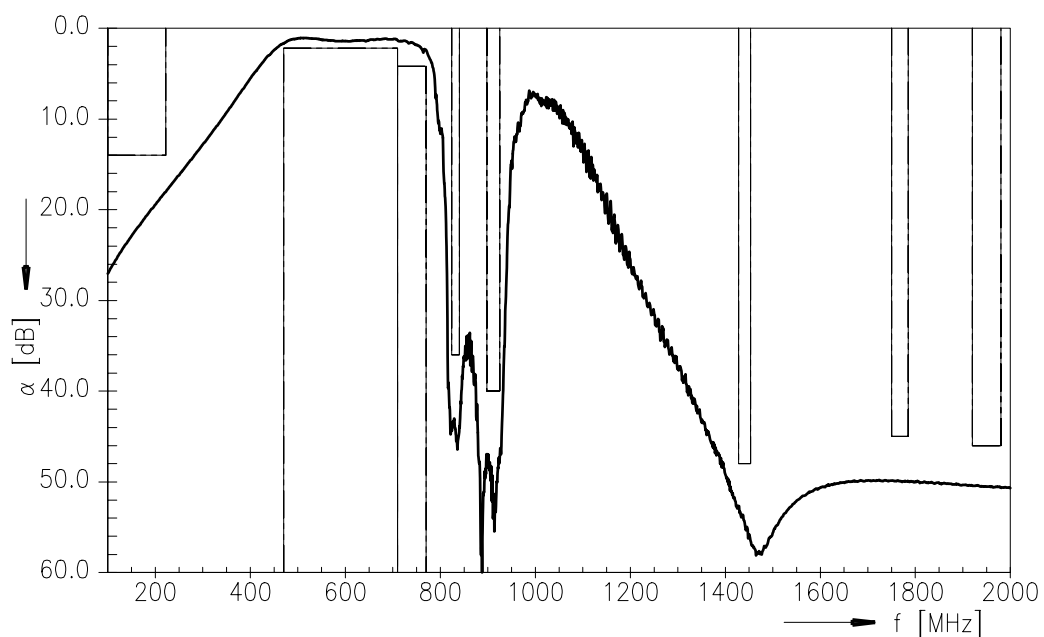
Data Sheet



Transfer function (pass band)



Transfer function (wide band)



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



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Data Sheet	SMD

References

Type	B8740
Ordering code	B39911-B8740-P810
Marking and package	C61157-A8-A33
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	LY01A_WB_UN.s4p (unmatched) LY01A_WB.s2p (matched)
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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