SAW Components

SAW filter

TD-SCDMA

Series/type:	**B5140**
Ordering code:	**B39202B5140U410**
Date:	August 15, 2012
Version:	1.0

Revision History: Changes compared to previous iteration issue

ISSUE	ORIGINATOR	DETAIL SPEC CHANGES	DATE
DGLV70S01			
0.1	Kok Meng	Initial Release	07.01.2009
DGLV70S02			
0.2	Kok Meng	Improve IL from 3dB to 2.5dB Change attenuation frequency range from 2690...4360MHz to 2690...3500MHz at 15dB 4360...5000MHz to 3500...5000MHz at 5dB	14.01.2009
LV70A			
1.0	Kok Meng	Relaxation of IL from 3dB to 3.3dB Improvement of AR from 0.9dB to 0.7dB Improvement of Attenuation @ 10.0...1805.0 MHz from 30dB to 38dB 1805.0...1880.0 MHz from 25dB to 38dB 1880.0...1900.0 MHz from 20dB to 38dB 2045.0...2071.0 MHz from 2dB to 3dB 2309.0...2340.0 MHz from 35dB to 38dB 2340.0...2690.0 MHz from 30dB to 38dB 2690.0... 4360.0 MHz from 5dB to 20dB 4360.0...5000.0 MHz from 5dB to 15dB	25.02.2009
DGLV70S03			
0.3	Kok Meng	Change in customer spec for attenuation frequency	19.05.2009
LV70B			
1.0	Kok Meng	Spec complient with reference to DGLV70S03	15.06.2009
LV70C			
1.0	Kok Meng	Sample release according to Datang requirement	08.12.2009
LV70C			
1.1	Kok Meng	Include Attenuation values @1980...2000MHz and 2035...2045MHz	24.12.2009
B5140			
1.0	Kok Meng	Relaxation of attenuation@ 1700...1860MHz from 40dB to 36dB 2170...4000MHz from 37dB to 33dB	15.08.2012

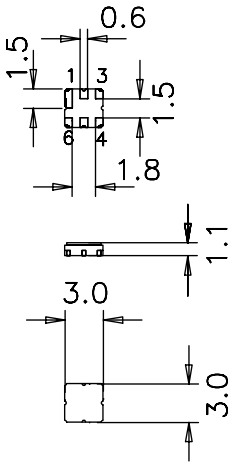
Preliminary datasheet SMD

Application

- Low-loss RF ftiler for TD-SCDMA
- Low amplitude ripple
- Usable passband of 15 MHz
- Unbalanced to unbalanced operation
- No matching required for operation at 50 Ω

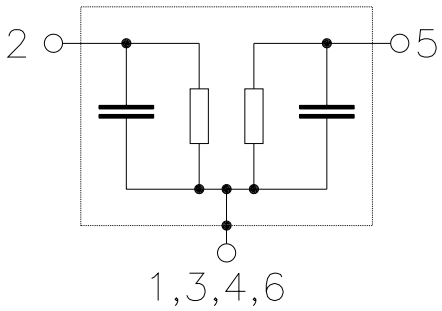
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- Electrostatic Sensitive Device (ESD)
- **M**oisture **S**ensitive **L**evel 1
- Filter surface passivated



Pin configuration

- 2 Input
- 5 Output
- 1,3,4,6 Case grounded



Preliminary datasheet SMD

Characteristics

Temperature range for specification: T = -40 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		B5140[1)]			
		min.	**typ. @ 25 ˚C**	**max.**	
Center frequency	f_C	—	2017.5	—	MHz
Maximum insertion attenuation	α_{max}				
2010.0 ... 2025.0 MHz		—	4.0	5.3	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2010.0 ... 2025.0 MHz		—	0.4	1.7	dB
VSWR					
2010.0 ... 2025.0 MHz		—	1.7	1.9	
Absolute Attenuation	α_{abs}				
1700.0 ... 1785.0 MHz		36	39	—	dB
1800.0 ... 1860.0 MHz		36	39	—	dB
1920.0 ... 1970.0 MHz		30	39	—	dB
1970.0 ... 1980.0 MHz		20	34	—	dB
1980.0 ... 2000.0 MHz		3	6	—	dB
2035.0 ... 2045.0 MHz		3	4	—	dB
2045.0 ... 2050.0 MHz		4	11	—	dB
2050.0 ... 2070.0 MHz		6	18	—	dB
2070.0 ... 2085.0 MHz		30	38	—	dB
2170.0 ... 4000.0 MHz		33	35	—	dB

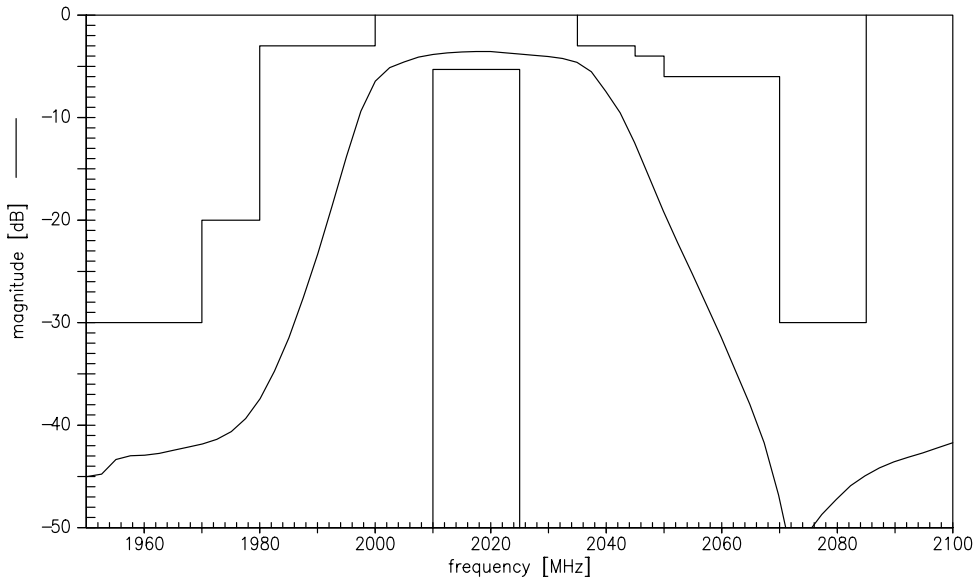
1) Values in columns min, typ and max indicate the development status of the current version.

Maximum ratings

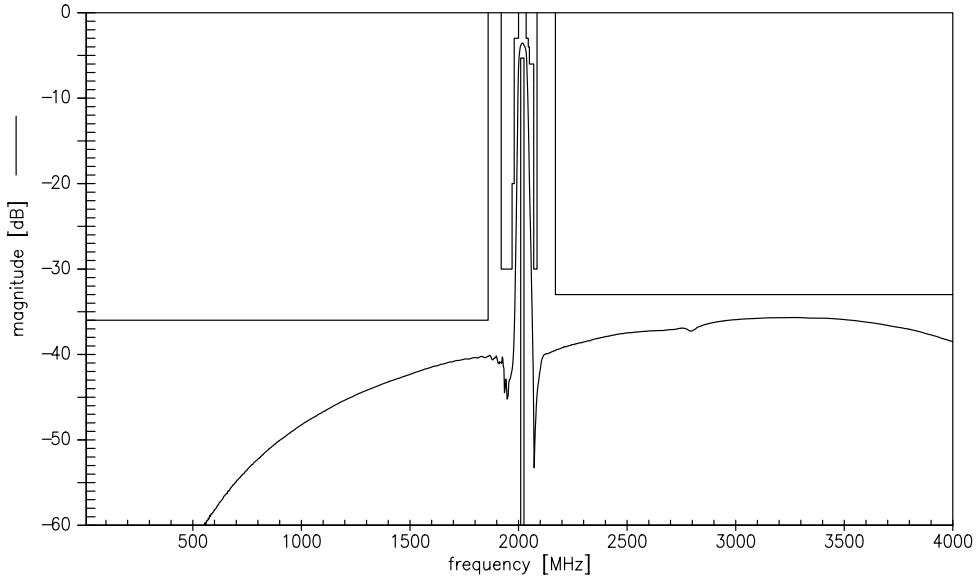
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Input power at				
2010.0 ... 2025.0	P_{IN}	23	dBm	CW, 24hours @55 ˚C

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

Transfer function

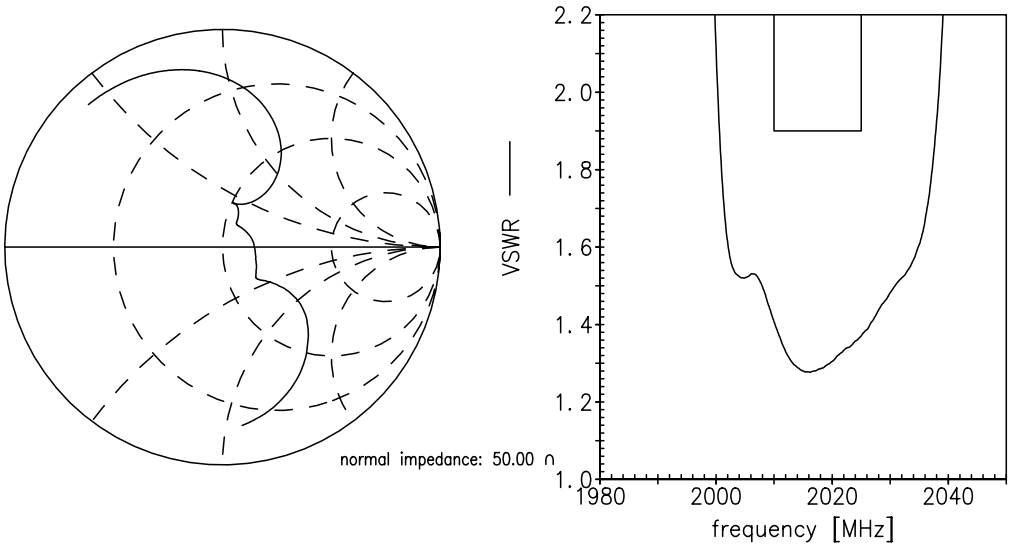


Transfer function (wideband)

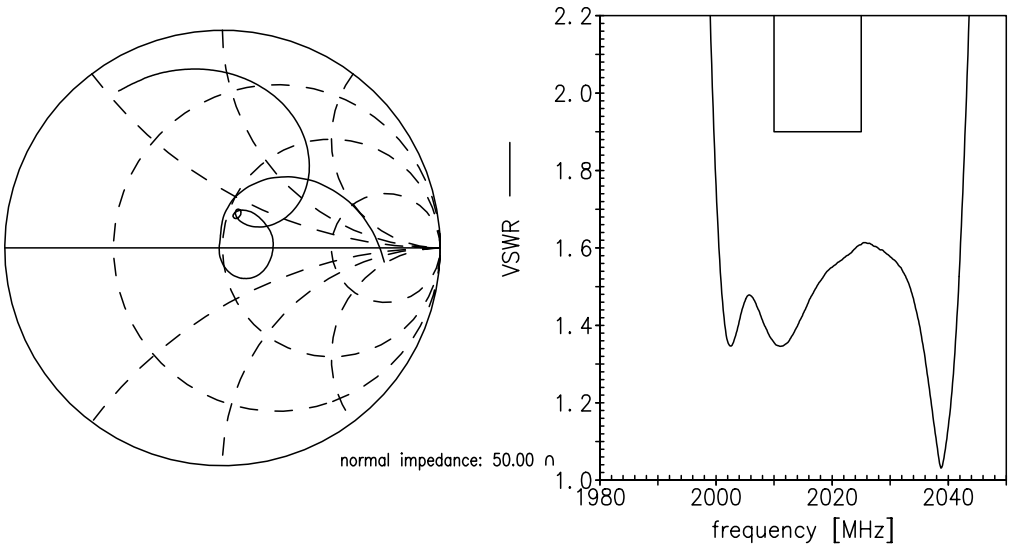


Smith charts

S_{11} function



S_{22} function



References

Type	B5140
Ordering code	B39202B5140U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B5140_NB.s2p, B5140_WB.s2p 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."
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 a large variety of matching coils.

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