



SAW Components

SAW CELL / GPS / PCS Triplexer

Series/type:	B9100
Ordering code:	B39162B9100L410
Date:	October 16, 2009
Version:	2.1



Data Sheet



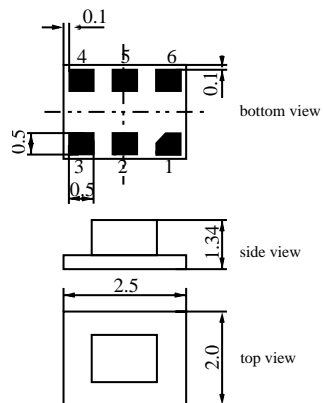
Application

- Low loss LTCC Triplexer for mobile phones covering Cellular, GPS and PCS band
- Usable passbands 70 MHz (CELL), 2 MHz (GPS), 140 MHz (PCS)
- Very low insertion attenuation in CELL, GPS and PCS band
- Very low amplitude ripple in all bands
- Integrated low loss GPS filter with single ended output 50 Ω
- Diversity antenna pinning
- No switches and control lines required
- Shunt inductor from ANT pin to ground used for ESD protection and matching



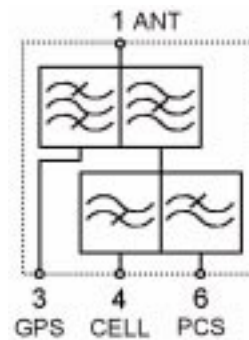
Features

- Package size 2.5 x 2.0 x 1.34 mm³
- Package code DCS6W
- RoHS compatible
- Approximate weight 0.022 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 1 ANT Input
- 3 GPS Output
- 4 CELL Output
- 6 PCS Output
- 2,5 Ground





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859.0 / 1575.42 / 1920.0 MHz

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Characteristics

Temperature range for specification: T = -30 °C to +85 °C
 Terminating source impedance: Z_S = 50 Ω || 6.8 nH (ANT)
 Terminating load impedance: Z_L = 50 Ω (CELL, GPS + 1.5 nH or || 20n H, PCS)

		B9100			
		min.	typ. @ 25 °C	max.	
ANT - CELL					
Center frequency	f _C	—	859.0	—	MHz
Maximum insertion attenuation	α _{max}	—	0.6	0.8	dB
824.0 ... 894.0 MHz					
VSWR		—	1.25	1.6	
824.0 ... 894.0 MHz					
ANT - PCS					
Center frequency	f _C	—	1920.0	—	MHz
Maximum insertion attenuation	α _{max}	—	0.65	0.9	dB
1850.0 ... 1990.0 MHz					
VSWR		—	1.25	1.6	
1850.0 ... 1990.0 MHz					
ANT - GPS					
Center frequency	f _C	—	1575.42	—	MHz
Maximum insertion attenuation	α _{max}	—	1.25	1.8	dB
1574.42 ... 1576.42 MHz					
VSWR		—	1.5	1.8	
1574.42 ... 1576.42 MHz					
Attenuation	α				
824.0 ... 849.0 MHz		32	45	—	dB
1495.0 ... 1515.0 MHz		25	37	—	dB
1610.0 ... 1625.0 MHz		10	25	—	dB
1635.0 ... 1655.0 MHz		25	40	—	dB
1710.0 ... 1755.0 MHz		35	42	—	dB
1850.0 ... 1980.0 MHz		32	40	—	dB
2400.0 ... 2500.0 MHz		23	29	—	dB
CELL - GPS					
Attenuation	α				
1574.42 ... 1576.42 MHz		20	35	—	dB
824.0 ... 849.0 MHz		42	46	—	dB
PCS - GPS					
Attenuation	α				
1574.42 ... 1576.42 MHz		14	23	—	dB
1850.0 ... 1910.0 MHz		42	46	—	dB

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



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ANT - PCS					
Center frequency	f _C	—	1920.0	—	MHz
Maximum insertion attenuation	α _{max}	—	0.65	0.9	dB
1850.0 ... 1990.0 MHz					
VSWR		—	1.25	1.6	
1850.0 ... 1990.0 MHz					
ANT - GPS					
Center frequency	f _C	—	1575.42	—	MHz
Maximum insertion attenuation	α _{max}	—	1.25	2.0	dB
1574.42 ... 1576.42 MHz					
VSWR		—	1.5	2.1	
1574.42 ... 1576.42 MHz					
Attenuation	α				
824.0 ... 849.0 MHz		32	45	—	dB
1495.0 ... 1515.0 MHz		25	37	—	dB
1610.0 ... 1625.0 MHz		10	24	—	dB
1635.0 ... 1655.0 MHz		25	39	—	dB
1710.0 ... 1755.0 MHz		35	41	—	dB
1850.0 ... 1980.0 MHz		32	39	—	dB
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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	at GPS port
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 10 pulses
Input power at				
CELL port				effective power in the on-state
824 ... 849 MHz	P _{IN}	31	dBm	continuous wave signal
PCS port				
1850 ... 1910 MHz	P _{IN}	31	dBm	

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



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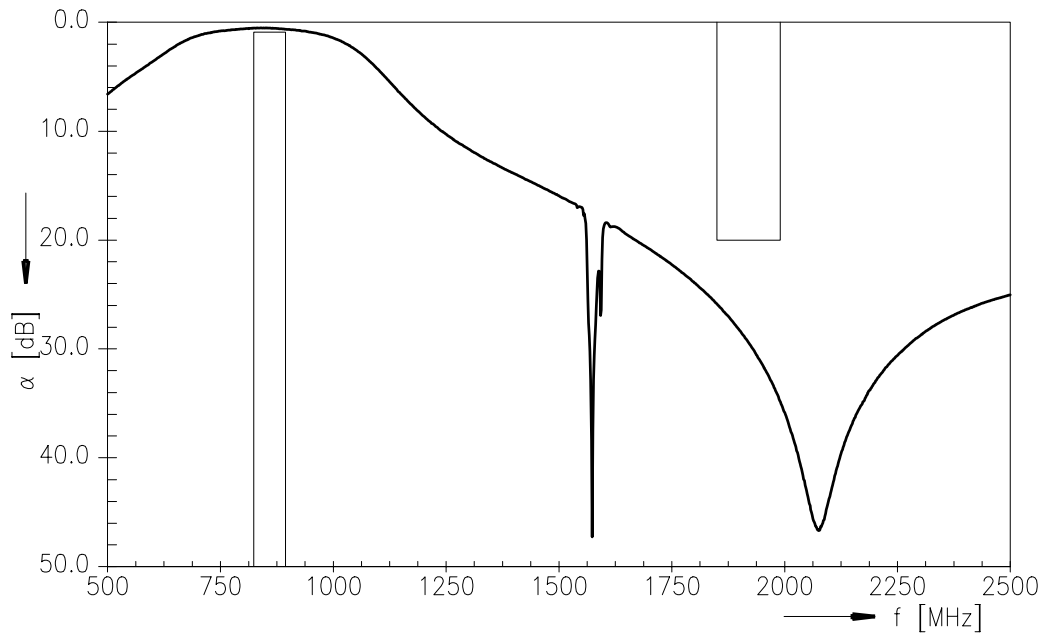
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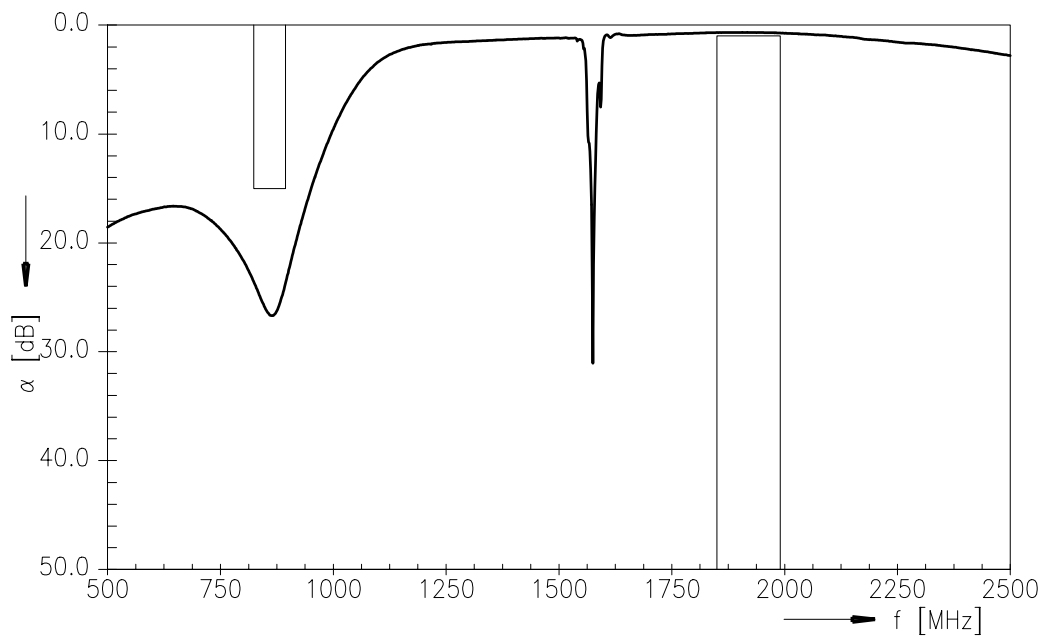
Data Sheet



ANT - CELL (transfer function, including PCB loss):



ANT - PCS (transfer function, including PCB loss):



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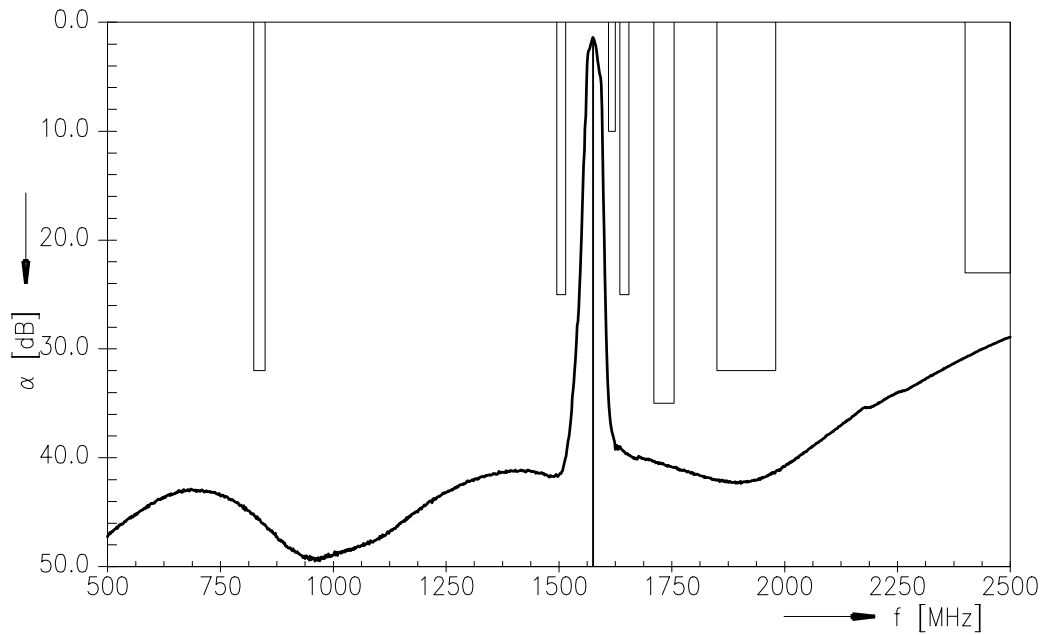
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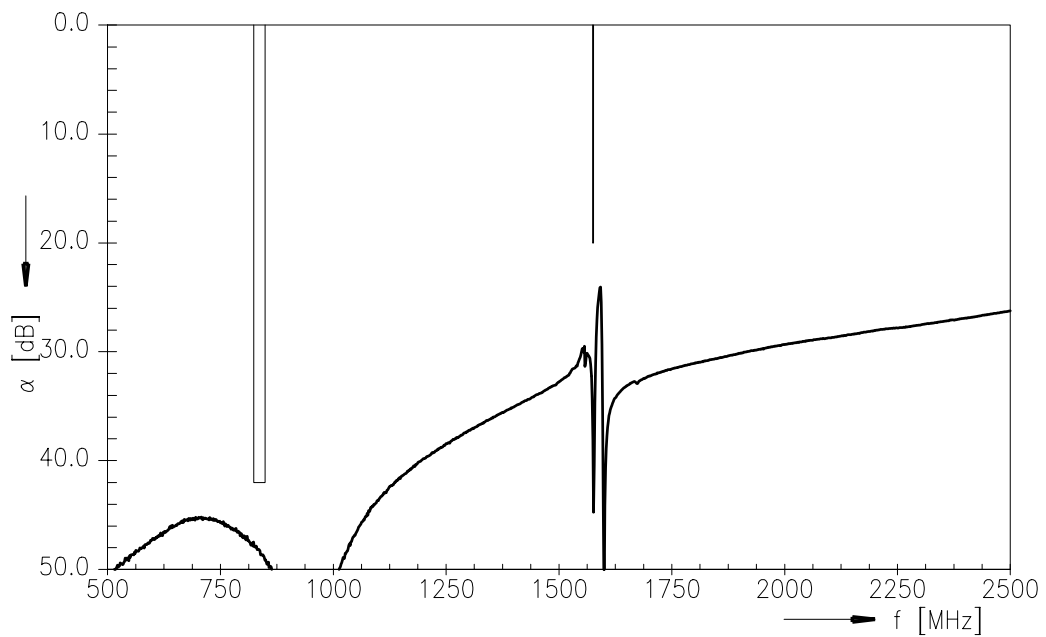
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ANT - GPS (transfer function, including PCB loss):



CELL - GPS (transfer function, including PCB loss):



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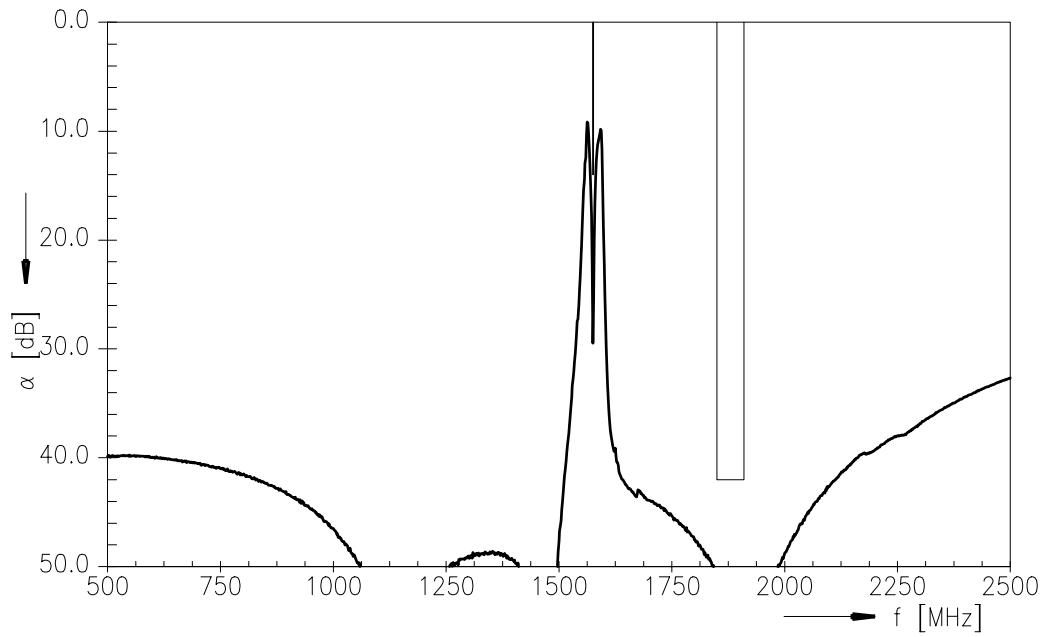
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PCS - GPS (transfer function, including PCB loss):





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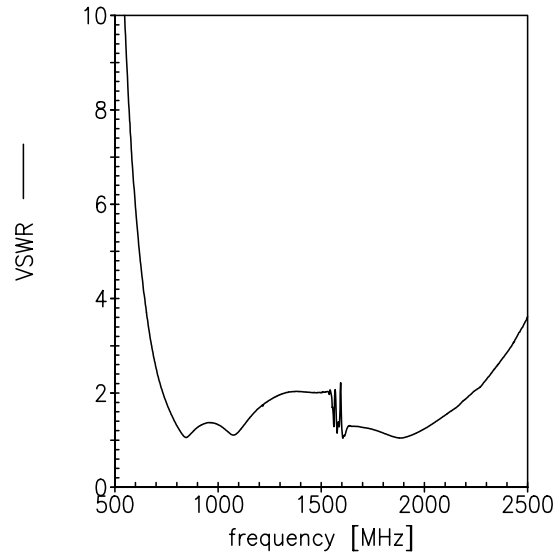
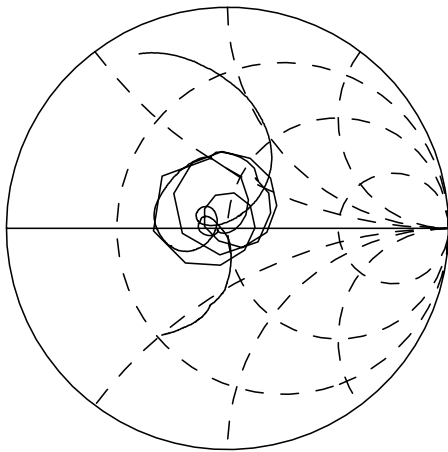
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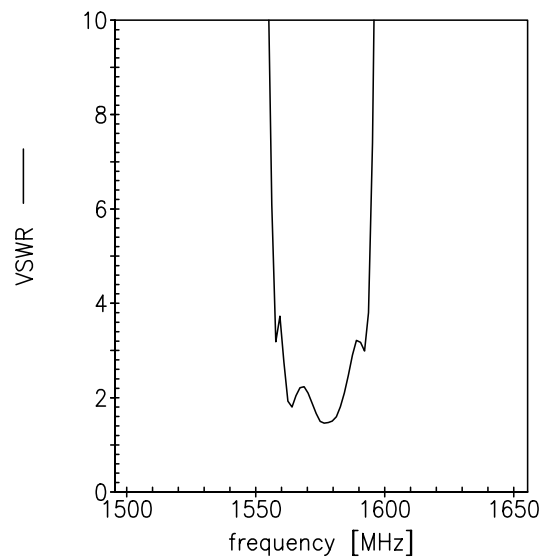
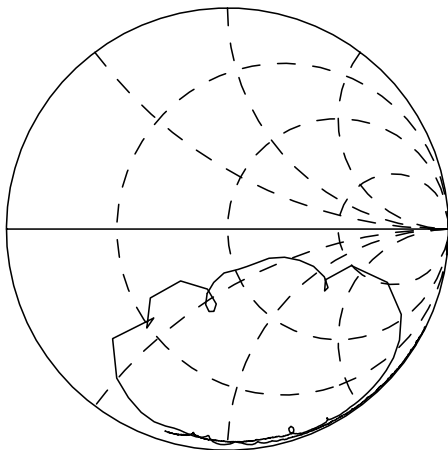


Smith charts / VSWR

S₁₁ Antenna (matched with shunt inductor)



S₂₂ GPS



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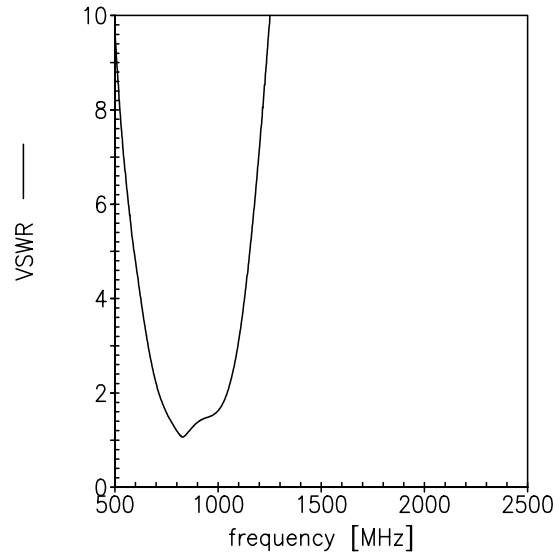
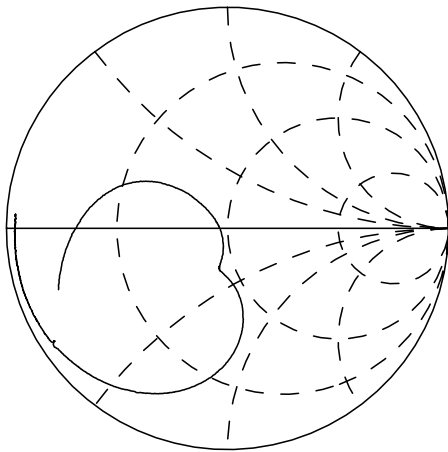
859.0 / 1575.42 / 1920.0 MHz

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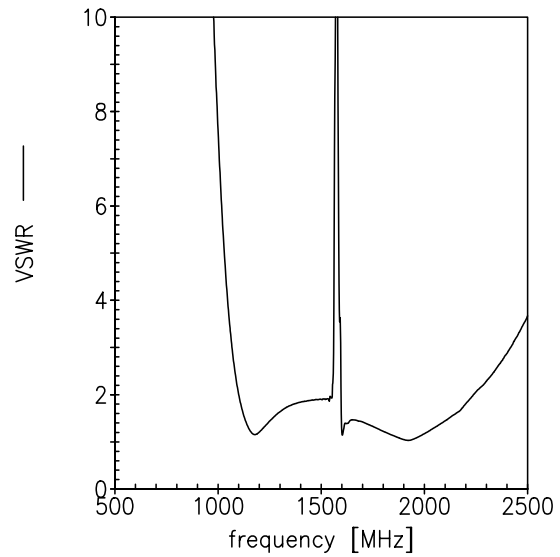
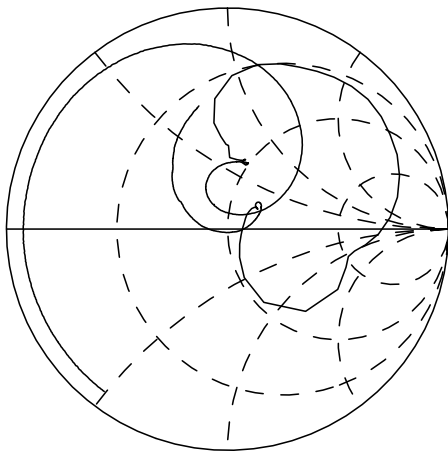


Smith charts / VSWR

S₃₃ CELL



S₄₄ PCS



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**References**

Type	B9100
Ordering code	B39162B9100L410
Marking and package	C61157-A3-A30
Packaging	F61074-V8225-Z000
Date codes	L_1126
S-parameters (6.8 nH ANT)	B9100_NB.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.

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