

SAW Components

Data Sheet B7715

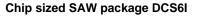


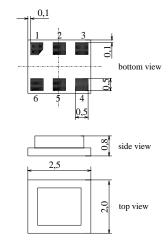


SAW Components		B7715
Low-Loss Filter for M	obile Communication	897,5 MHz
Data Sheet	SMD	

Features

- Low-loss RF filter for mobile telephone EGSM systems, transmit path
- Low amplitude ripple
- Usable passband 35 MHz
- Balanced to unbalanced operation
- Impedance transformation from 200 Ω to 50 Ω
- Ceramic package for Surface Mounted Technology (SMT)





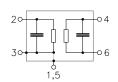
Terminals

Ni, gold-plated

Dimensions in mm, approx. weight 0,014g

Pin configuration

2	Output, unbalanced
4, 6	Balanced inputs
1, 3, 5	To be grounded
1, 5	Case ground



Туре	Ordering code	Marking and Package according to	Packing according to
B7715	B39901-B7715-C610	C61157-A7-A76	F61074-V8153-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

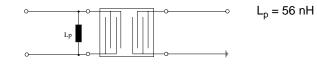
Operable temperature range	Т	- 10 / + 80	°C	
Storage temperature range	T _{stg}	- 40 / + 85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	50	V	
Input power max.				> 2000 hrs at 85°C peak power of GSM signal,
880 915 MHz	P _{IN}	14	dBm	duty cycle 2 : 8
		12	dBm	duty cycle 4 : 8,
elsewhere		0	dBm	continuous wave

2



				B7715
munication			897	7,5 MHz
ΞM				
$Z_{\rm S}$ =	200Ω including	ng matching	network	
	min.	typ.	max.	
f	ťc —	897,5	—	MHz
5,0 MHz	x _{max} —	2,6	3,0	dB
	Δα	1,1	1,5	dB
5,0 MHz	_	1,7	2,0	
5,0 MHz	_	1,8	2,2	
	S _{sc12} 20	23	_	dB
	-10	_	+10	degree
5,0 MHz	-1,0	_	1,0	dB
50,0 MHz 71,0 MHz 50,0 MHz 50,0 MHz 50,0 MHz	x 45 12 20 35 35 15	58 21 34 42 40 26		dB dB dB dB dB dB
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

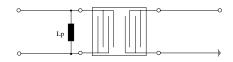
Test matching network





Low-Loss Filter for Mobile Communication 897,5 f Data Sheet Characteristics T = -10 to 80 °C Operating temperature range: T = -10 to 80 °C Terminating source impedance: $Z_S = 200 \Omega$ including matching network Z_L = 50 Ω Maximum insertion attenuation 880,0 α_{max} - 2,7 3,2 dB Amplitude ripple (p-p) 880,0 $\Delta \alpha$ - 1,2 1,8 dB Balanced input VSWR 880,0 $\alpha_{915,0}$ MHz - 1,7 2,0 Unbalanced output VSWR 880,0 $\alpha_{915,0}$ MHz - 1,8 2,2 Diff. to common mode suppression 880,0 S_{sc12} 20 23 - dB Input phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$) 880,0 MHz -10 - +10 deg Attenuation $\alpha_{0,0}$ $\alpha_{17,0}$ $\alpha_{1,0}$ $\alpha_{1,0}$ $\alpha_{1,0}$ $\alpha_{1,0}$ Balanced input VSWR 800,0 $\alpha_{15,0}$ MHz -10 -10 -10 -10 Input pha								
Data Sheet Characteristics Image: Total constraints Total const	SAW Components							B7715
Characteristics 7 = -10 to 80 °C Terminating source impedance: $Z_S = 200 \Omega$ including matching network Terminating load impedance: $Z_L = 50 \Omega$ min. typ. max. Center frequency f_C — MH Maximum insertion attenuation α_{max} — $2,7$ $3,2$ MH Maximum insertion attenuation α_{max} — $2,7$ $3,2$ MH Maximum insertion attenuation α_{max} — $2,7$ $3,2$ MH Maximum insertion attenuation α_{max} — $1,2$ $1,8$ $2,7$ $3,2$ M Maximum insertion attenuation α_{max} $ 1,2$ $1,8$ $2,7$ $3,2,0$ $3,6$ $3,6$	Low-Loss Filter for Mobile Communication 897,5 MH					7,5 MHz		
Terminating source impedance: $Z_S = 200 \Omega$ including matching network Terminating load impedance: $Z_L = 50 \Omega$ min. typ. max. Center frequency f_C - 897.5 - MH Maximum insertion attenuation 880,0 α_{max} - 2,7 3,2 dB Amplitude ripple (p-p) 880,0 $880,0$ 915,0 MHz - 1,2 1,8 dB Balanced input VSWR 880,0 $880,0$ 915,0 MHz - 1,7 2,0 Unbalanced output VSWR 880,0 $880,0$ 915,0 MHz - 1,8 2,2 Diff. to common mode suppression 880,0 $915,0$ MHz -10 - +10 deg Input phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$) 880,0 MHz -10 - +10 deg Attenuation α α α α α α α α Balance output VSWR 880,0 $915,0$ MHz -10 -1 α α Diff. to common mode suppression 880,0 $915,0$ MHz -10 <								
Center frequency $f_{\rm C}$ $R_{\rm B7,5}$ $R_{\rm M}$ $R_{\rm B80,0}$ $R_{\rm B80,0}$ $R_{\rm B80,0}$ $R_{\rm B80,0}$ $R_{\rm B1,0}$ $R_{\rm M}$ <	Terminating source impedance:		Zs	= 200	Ω including	g matching	network	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$					min.	typ.	max.	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Center frequency			f _C	—	897,5		MHz
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			MHz	$lpha_{max}$	_	2,7	3,2	dB
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		915,0	MHz	Δα	_	1,2	1,8	dB
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	915,0	MHz		_	1,7	2,0	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	915,0	MHz		_	1,8	2,2	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			MHz	S _{sc12}	20	23		dB
880,0 915,0 MHz -1,0 — 1,0 dB Attenuation α 850,0 MHz 45 58 — dB 0,0 850,0 MHz 12 21 — dB 935,0 960,0 MHz 20 34 — dB 960,0 1850,0 MHz 35 42 — dB					-10	_	+10	degree
0,0 850,0 MHz 45 58 — dB 850,0 871,0 MHz 12 21 — dB 935,0 960,0 MHz 20 34 — dB 960,0 1850,0 MHz 35 42 — dB			MHz		-1,0	_	1,0	dB
3660,06000,0 MHz 15 26 — dB	0,0 . 850,0 . 935,0 . 960,0 . 1850,0 .	871,0 960,0 1850,0 3660,0	MHz MHz MHz MHz	α	12 20 35 35	21 34 42 40		dB dB dB dB dB dB

Test matching network

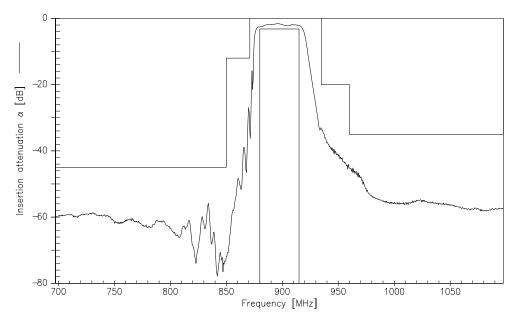


L_p = 56 nH

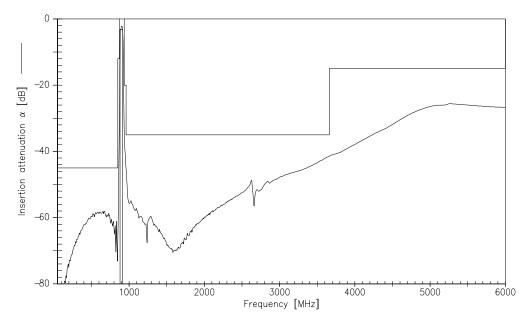
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Transfer function (measurement)



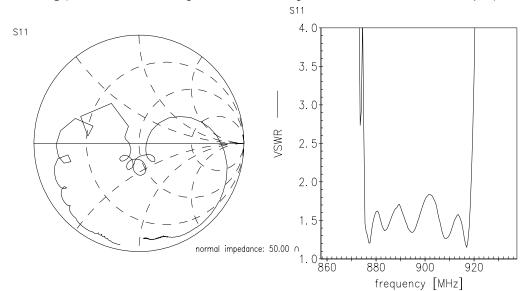
Transfer function (wideband measurement)

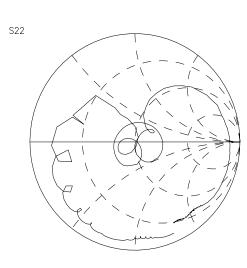


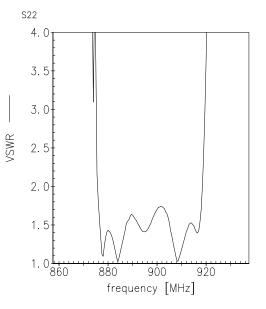
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SAW Components		B7715
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Matching (measurement including calculated matching network; S11 is unbalanced output)







Jan 30, 2003

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