

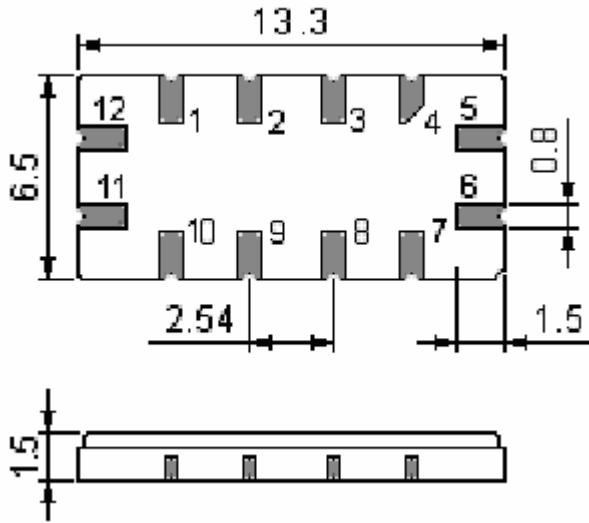
SAW Filter for Base Station Applications PART NO.: ACTF2091-140-SMP53

Features

- Low loss filter for Base station applications
- Usable bandwidth: 20 MHz
- High attenuation
- Single-ended operation
- **Surface Mounted Technology (SMT)**
- Lead-free production and **RoHS** compliance

Package Dimensions

SMD Package: SMP 53



Pin Configuration

Pin	Configuration
5	Output
6	Output-Ground
11	Input
12	Input -Ground
Others	Be grounded

Unit: mm

Marking



Top view Laser marking

"ACT": Manufacturer's mark "F": SAW filter

"2091": Part number • : Terminal 1

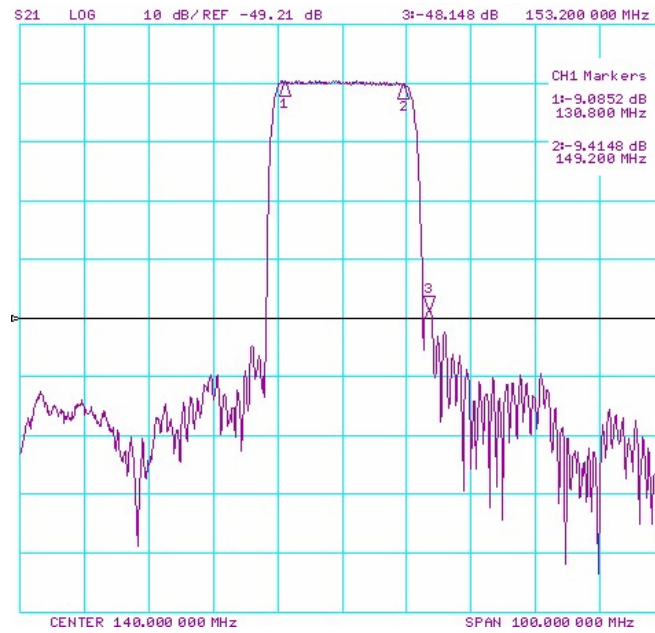
The character "*" indicates the month code in a year

	1	2	3	4	5	6	7	8	9	10	11	12
2009	A	B	C	D	E	F	G	H	J	K	L	M
2010	N	P	Q	R	S	T	U	V	W	X	Y	Z
2011	a	b	c	d	e	f	g	h	j	k	l	m
2012	n	p	q	r	s	t	u	v	w	x	y	z

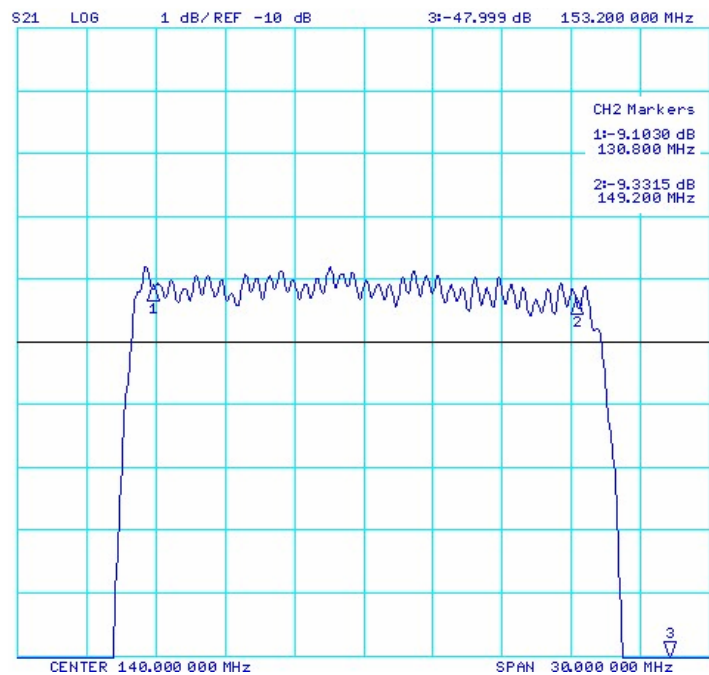
Maximum Ratings

Rating		Value	Unit
Source Power	P_S	20	dBm
DC Voltage	V_{DC}	0	V
Operating Temperature Range	T_A	-40 ~ +85	°C
Storage Temperature Range	T_{stg}	-40 ~ +85	°C

Typical Frequency Response



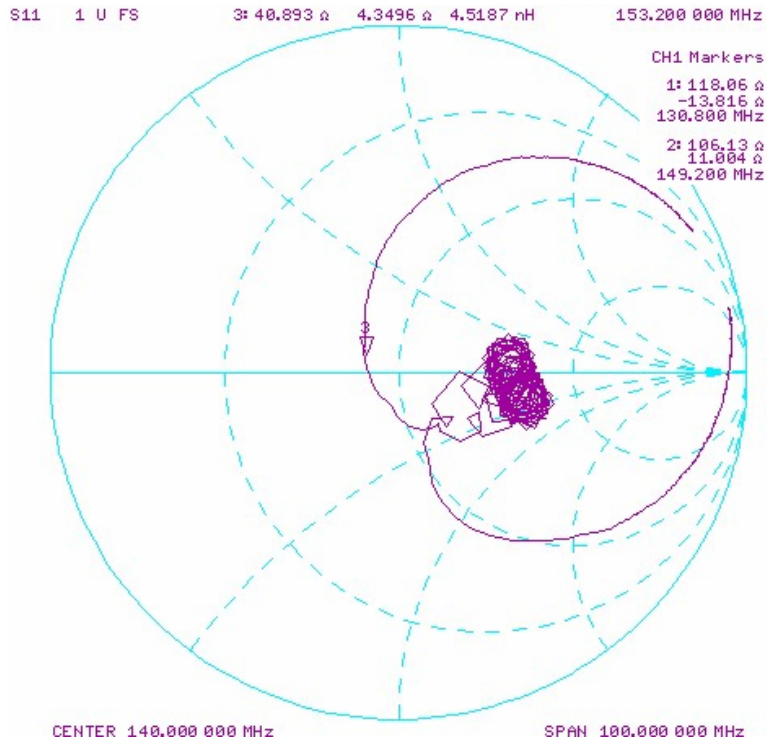
Pass band



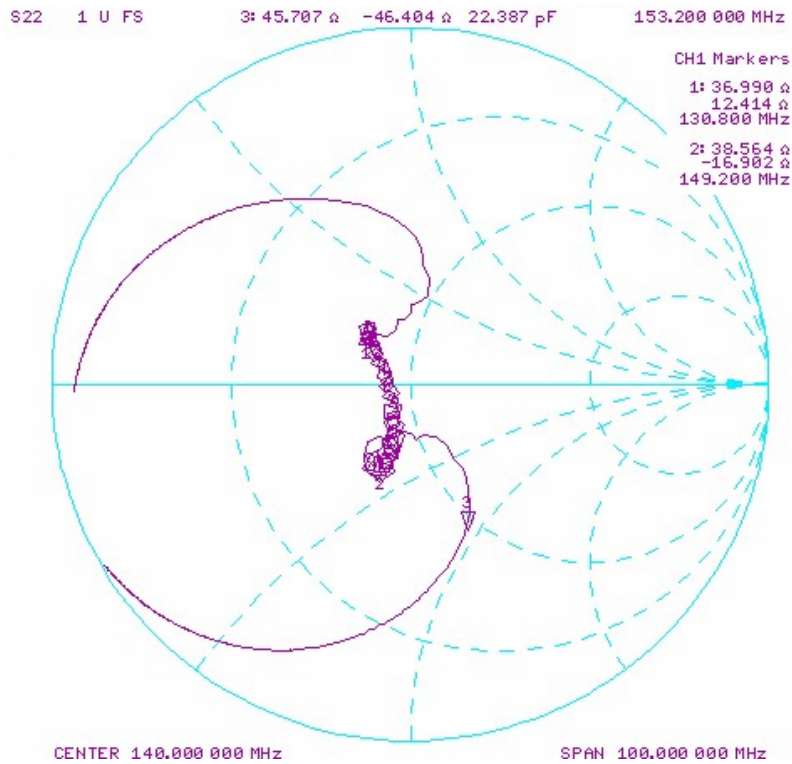
Iss1 C1u, Date 13-7-2011

In line with our ongoing policy of product evolution and improvement, the above specification may subject to change without notice. For quotations or further information please contact us at: The Busines Centre, Molly Millars Lane, Wokingham, Berkshire RG41 2EY, UK.

Smith chart of S11



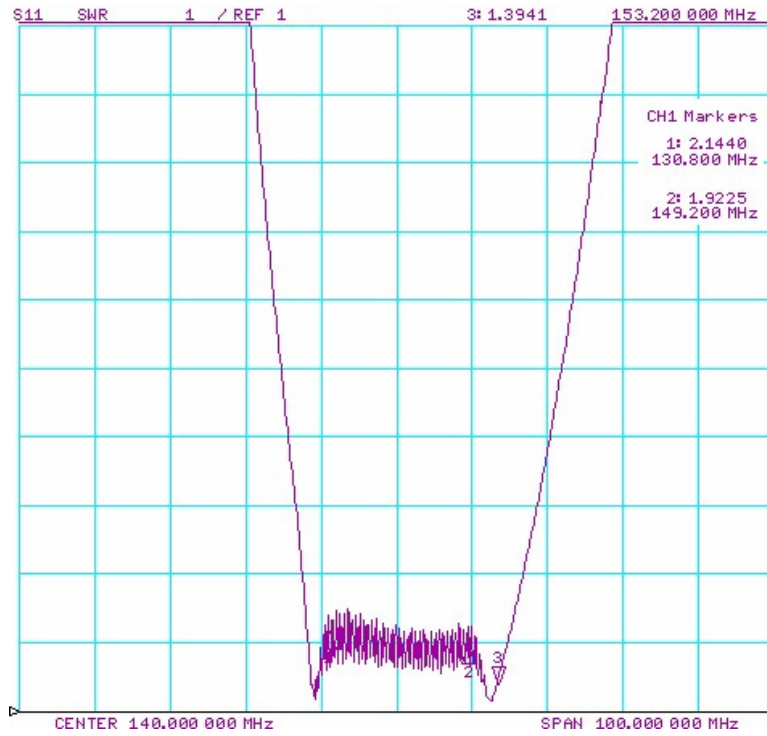
Smith chart of S22



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SWR of S11



SWR of S22



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Electrical Characteristics (@25°C)

Characteristic		Minimum	Typical	Maximum	Unit
Center Frequency	f_c	--	140.0	--	MHz
Insertion Loss (@140.00MHz)	IL	--	9.3	11.0	dB
1dB Bandwidth			20.4	--	
Lower 1dB Band edge	BW_1	149.2	129.7	130.8	MHz
Upper 1 dB Band edge			150.4		
3dB Bandwidth			21.6	--	
Lower 3dB Band edge	BW_3	149.8	129.3	130.2	MHz
Upper 3 dB Band edge			150.9		
35dB Bandwidth			24.4		
Lower 35 dB Band edge	BW_{35}	126.8	128.0	153.2	MHz
Upper 35 dB Band edge			152.4		
Pass band ripple(over the 1 dB bandwidth)		--	0.5	0.8	dB
Relative Attenuation		--	--		
10-90MHz		35	55		dB
90-120MHz		40	53		
120-126.8MHz		35	45		
153.2-160MHz		35	39		
160-190MHz		40	49		
190-800MHz		35	58		
Input VSWR			2.0	2.5	
Output VSWR			1.8	2.3	
Source/Load Impedance			50		Ω

 **RoHS Compliant**

 **Electrostatic Sensitive Device**

Stability Characteristics

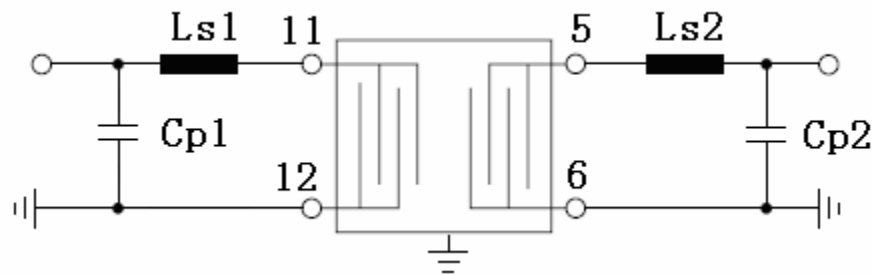
	Test item	Condition of test
1	Mechanical shock	(a) Drops: 3 times on concrete floor (b) Height: 1.0 m
2	Vibration resistance	(a) Frequency of vibration: 10~55Hz (c) Directions: X,Y and Z (b) Amplitude: 1.5 mm (d) Duration: 2 hours
3	Moisture resistance	(a) Condition: 40°C, 90~95% R.H. (c) Wait 4 hours before measurement (b) Duration: 96 hours
4	Climatic sequence	(a) +70°C for 16 hours (c) -25°C for 2 hours (e) Wait 4 hours before measurement (b) +55°C for 24 hours, 90~95% R.H. (d) +40°C for 24 hours, 90~95% R.H.
5	High temperature exposure	(a) Temperature: 70°C (c) Wait 4 hours before measurement (b) Duration: 250 hours
6	Thermal impact	(a) +70°C for 30 minutes \Rightarrow -25°C for 30 minutes repeated 3 times (b) Wait 4 hours before measurement

Requirements: The SAW filter shall remain within the electrical specifications after tests.

Remarks

- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.
- Be careful of soldering temperature and duration of components when soldering.
- Do not place soldering iron on the body of components.
- Be careful not to subject the terminals or leads of components to excessive force.
- SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.
- Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.

Matching Network



Ls1=100nH Cp1=39pF
 Ls2=18nH Cp2=82pF

1. The specifications of this device are subject to change or obsolescence without notice.
2. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
3. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.