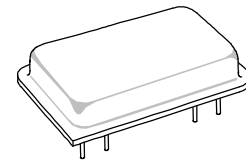


# BP1042 70 MHz SAW Filter



- Designed for CDMA Receiver IF Applications
- Simple External Impedance Matching
- Hermetic Metal DIP
- Unbalanced Input and Output
- Complies with Directive 2002/95/EC (RoHS)



See Associated Plots

Characteristic	Sym	Min	Typ	Max	Units	Notes
Nominal Center Frequency	fc		70.000		MHz	1
Passband	Insertion Loss at fc	IL	22	28	dB	1, 2
	1 dB Passband	BW <sub>1</sub>	±455	±500	kHz	
	3 dB Passband	BW <sub>3</sub>	±550	±600	kHz	
	Group Delay Variation over fc ±550 kHz	GDV	150	175	ns <sub>P-P</sub>	
Rejection	Phase Linearity over fc ±550 kHz		4	5	° <sub>P-P</sub>	1, 2, 3
	At fc ±1.0 MHz		40	45	dB	
	Ultimate from 1 MHz to 105 MHz		40	50	dB	
Operating Temperature Range	T <sub>A</sub>	-25		+85	°C	1

Impedance Matching to 50 Ω unbalanced	External L-C
Suggested Matching Network Impedance at Port 1	375 nH in parallel with 310 Ω
Suggested Matching Network Impedance at Port 2	240 nH in parallel with 320 Ω
Case Style	DIP14L-8 22.1 x 12.6 mm Nominal Footprint
Lid Symbolization (RR = run code, LL = lot code)	RFM BP1042 RRLL

## Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Max. DC voltage between any 2 terminals	30	VDC
Storage Temperature Range	-40 to +85	°C
Max Soldering Temperature	260°C for 30 s	
Suitable for lead-free Soldering		

## Electrical Connections (See note 3)

Connection	Terminals
Port 1 Hot	7
Port 1 Gnd Return	9
Port 2 Hot	14
Port 2 Gnd Return	2
No Connection	1, 8
Case Ground	2, 9 & All others

### Notes:

1. Unless noted otherwise, all specifications apply *over the operating temperature range* with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details. All "NC" or "no connection" pins should be grounded.
4. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.
8. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
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10. Electrostatic Sensitive Device. Observe precautions for handling.



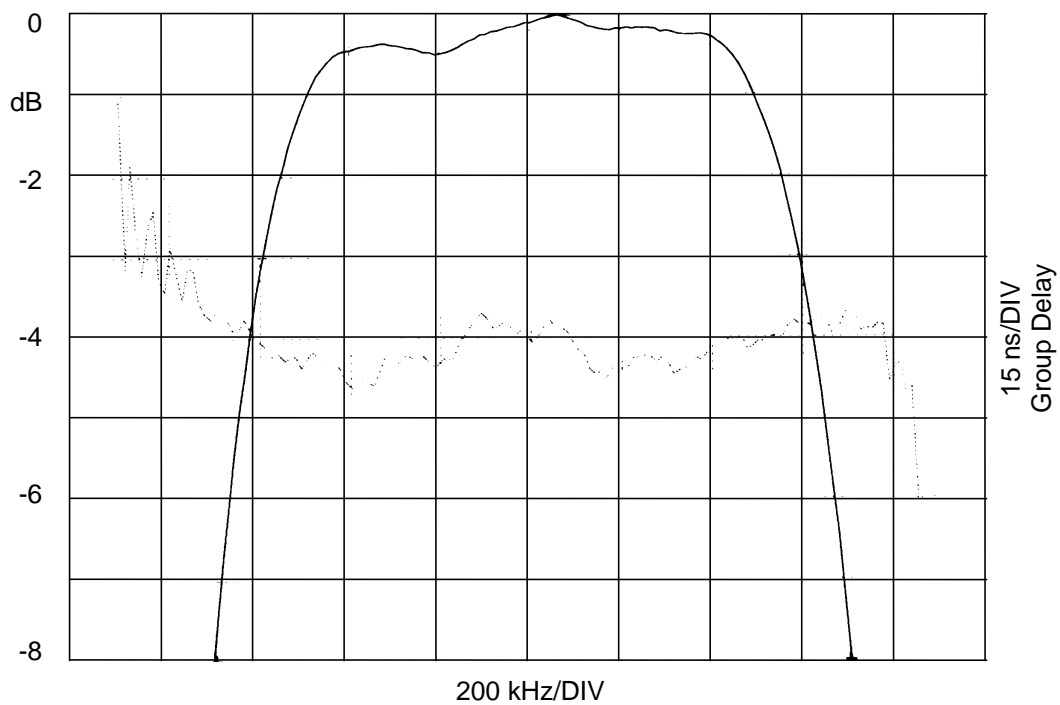
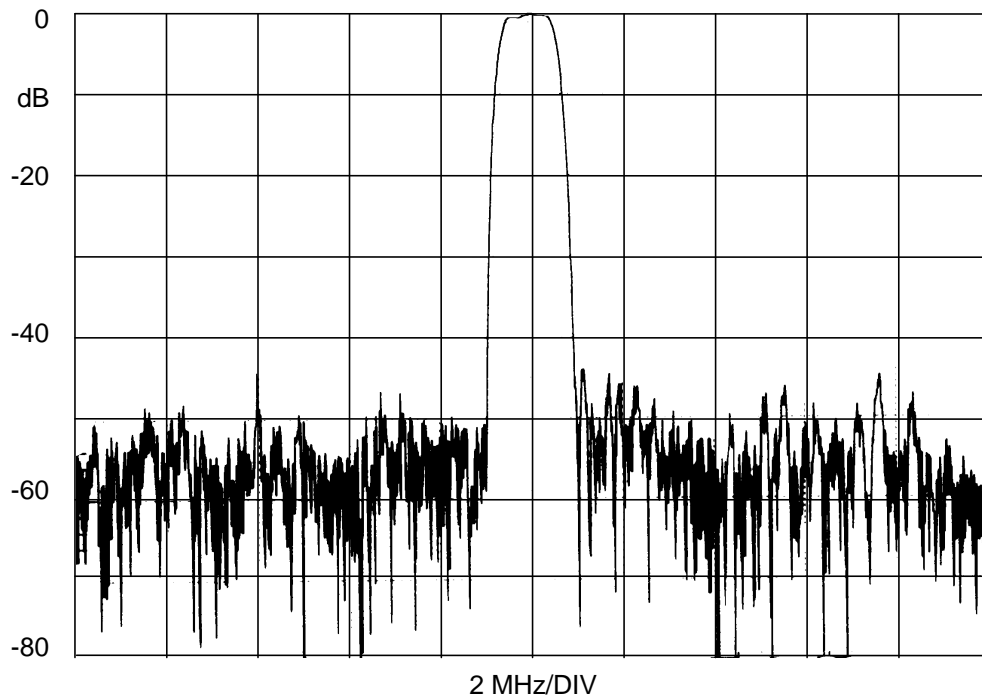
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**European Sales Office**  
44 1963 251383  
44 1963 251510

# BP1042 70 MHz SAW Filter



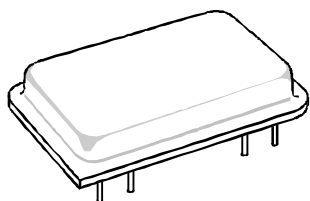
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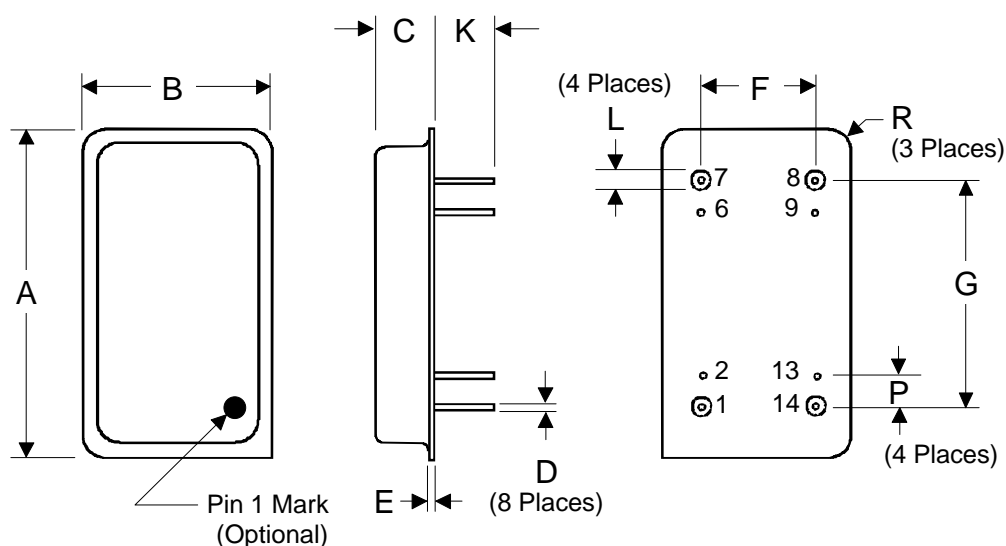
Phone: +1(972)233-2903  
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e-mail: [info@rfm.com](mailto:info@rfm.com)  
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**European Sales Office**

## Metal 8-Pin DIP in 14-Pin (Long) Configuration 22.1 x 12.6 mm Nominal Footprint



Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A		22.10	22.50		0.870	0.886
B		12.55	13.00		0.494	0.512
C		3.56	3.81		0.140	0.150
D	0.41	0.48	0.51	0.016	0.019	0.020
E		0.89			0.035	
F		7.62			0.300	
G		15.24			0.600	
K	3.30	3.81	6.73	0.130	0.150	0.265
L	1.37	1.45	1.52	0.054	0.057	0.060
P		2.54			0.100	
R		1.60			0.063	



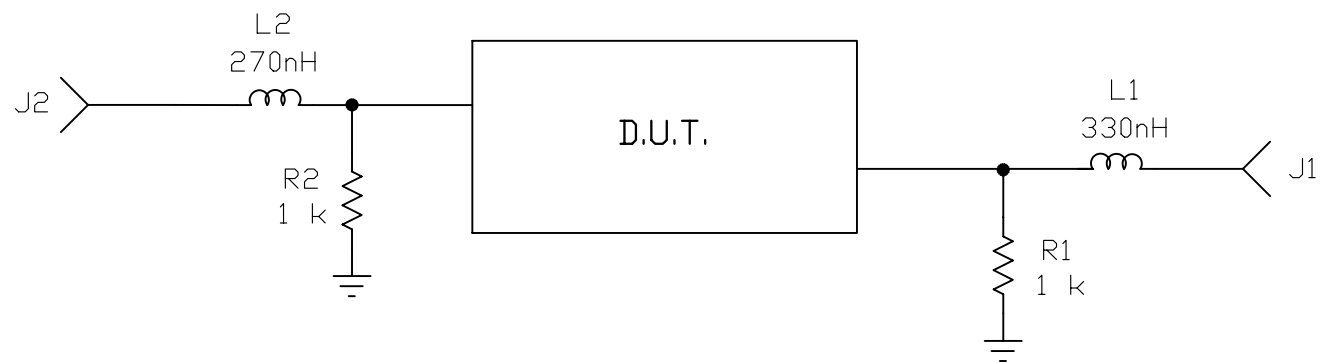
REV	ECN NO.	DESCRIPTION	APP/DATE
A	4571	INITIAL RELEASE	

## BILL OF MATERIALS

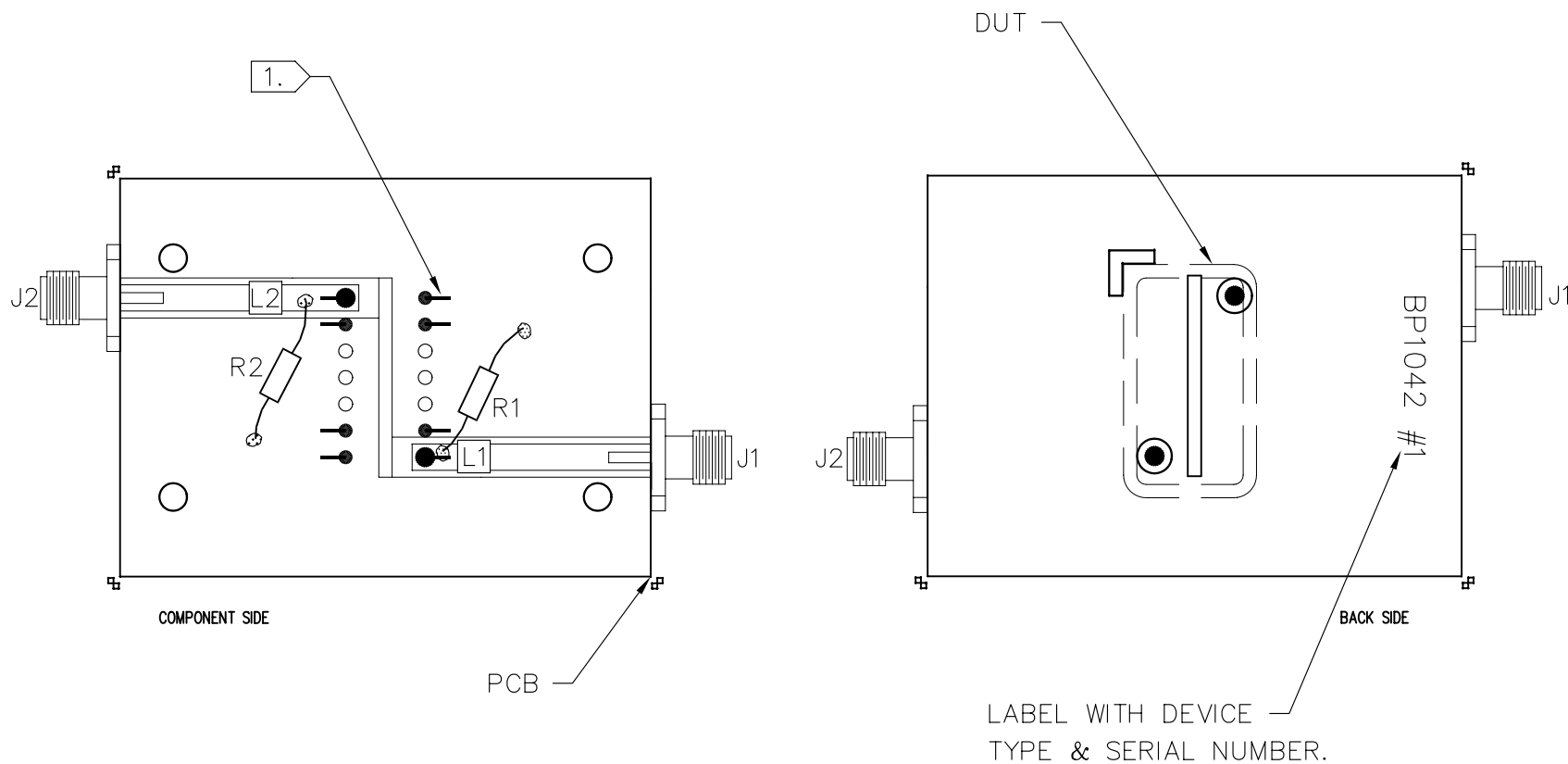
SEQ	QTY	RFM P/N	DESCRIPTION	REF DES	REFERENCE/ COMMENTS
1	1	400-0846-001	14 PIN PCB	PCB	
2	2	500-0248-001	CONN, COAX, FLANGE MT. JACK	J1,2	
3	1	500-0010-331	IND, CHIP 330 nH	L1	±10%,
4	1	500-0010-271	IND, CHIP 270 nH	L2	±10%,
5	2	500-0127-102	RES, C.COMP, 1.0 k, .25W	R1,2	±5%

DRAWN BY/DATE: J. LAYTON 05/01/96			TITLE: DEMO PCB, BP1042		
RF Monolithics, Inc. DALLAS, TEXAS 75244		CHECKED/APPROVED	SIZE <b>A</b>	CODE IDENT <b>2U874</b>	DWG. NO. BP1042(DEMO)
				REV <b>A</b>	SHEET <b>1/7</b>

SCHEMATIC, BP1042 (DEMO)



1. DEVICE LEADS ARE TO BE SOLDERED DIRECTLY TO PCB. (NO PIN SOCKETS ARE USED)



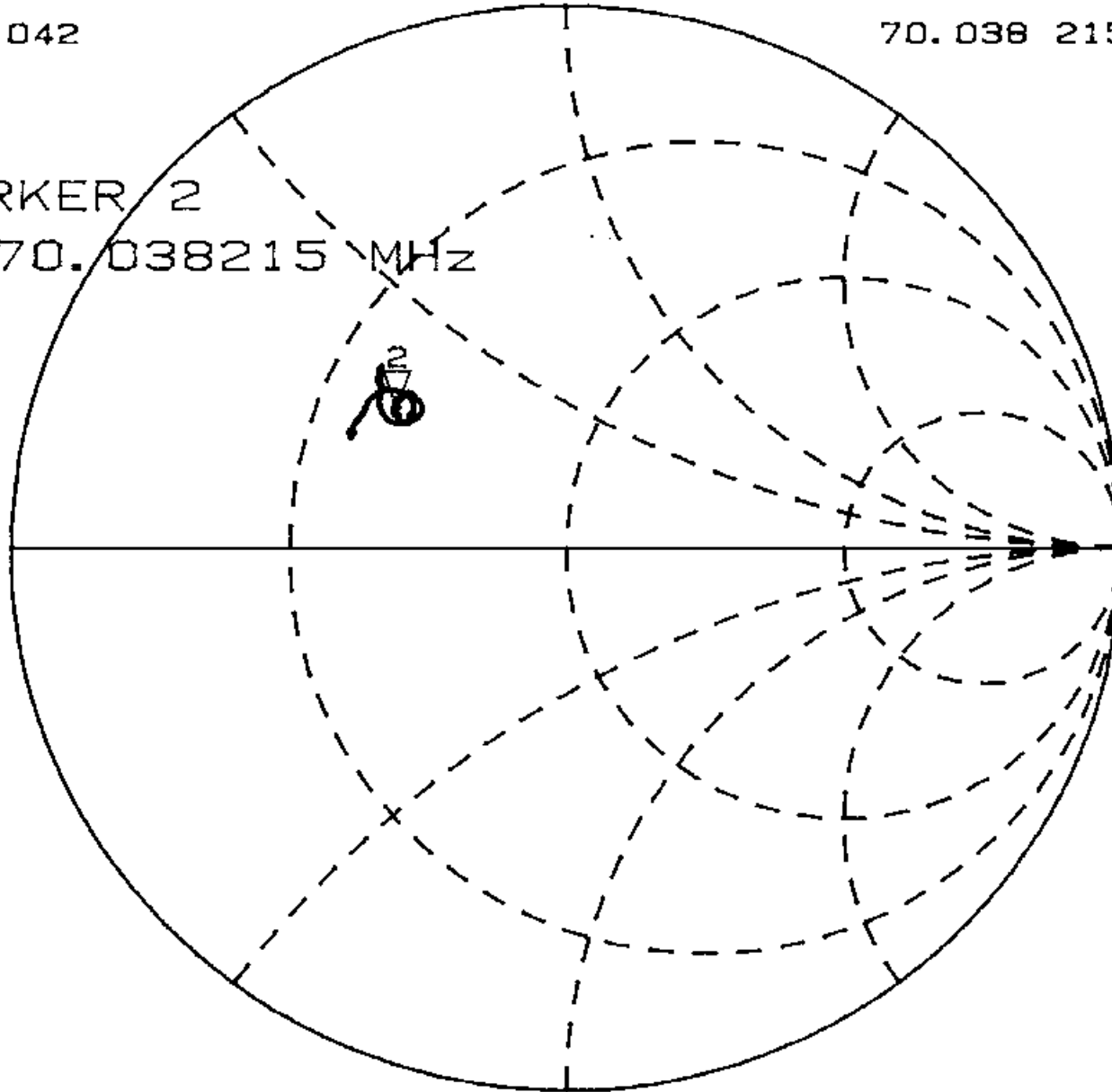
INSTRUCTIONS:

PLOTS: PLOTS A & B SHOW PLACE ON SMITH CHART WHERE DEVICE IS TO BE TUNED TO.  
PLOT #C IS TO BE DELIVERED WITH EACH DEMO.  
THE TUNING COMPONENT VALUES MAY VARY IN ORDER TO ACHIEVE PROPER TUNING  
DUE TO COMPONENT TOLERANCES. NOTE COMPONENT VALUES AND TOLERANCES ON EACH PLOT.

<b>RF Monolithics, Inc.</b> DALLAS, TEXAS 75244		SIZE <b>A</b>	CODE IDENT <b>2U874</b>	DWG. NO. <b>BP1042&lt;DEMO&gt;</b>	REV <b>A</b>	SHEET <b>4</b>
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CH1 S<sub>11</sub> 1 U FS 2, 23.725  $\Omega$  14.676  $\Omega$  33.349 nH  
BP1042 70.038 215 MHz

Cor MARKER 2  
70.038215 MHz

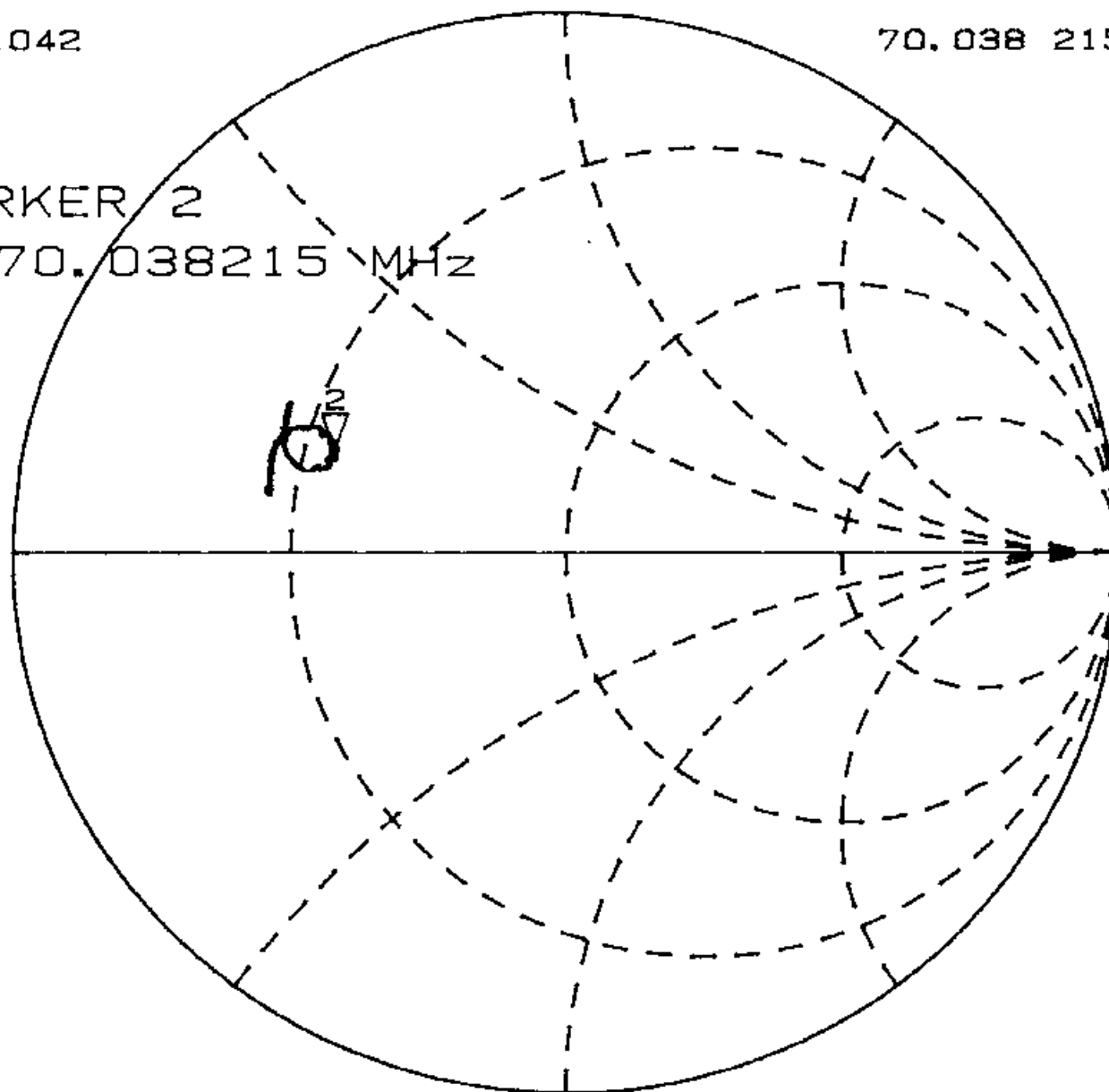


CH1 CENTER 70.000 000 MHz SPAN 3.000 000 MHz



CH1 S<sub>22</sub> 1 U FS 2 19.308 n 9.2705 n 21.066 nH  
BP1042 70.038 215 MHz

Cor MARKER 2  
70.038215 MHz



CH1 CENTER 70.000 000 MHz SPAN 3.000 000 MHz

BP1042

d/c 9519 B

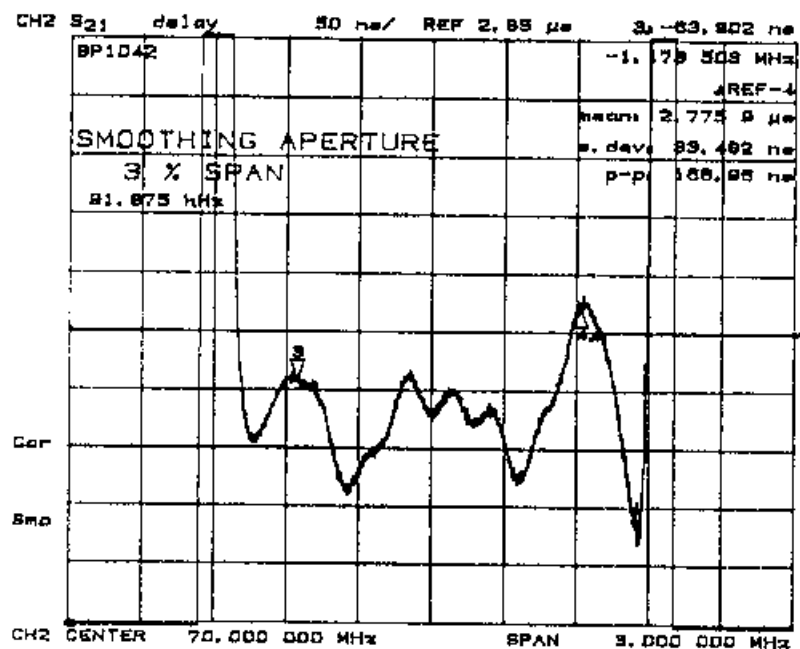
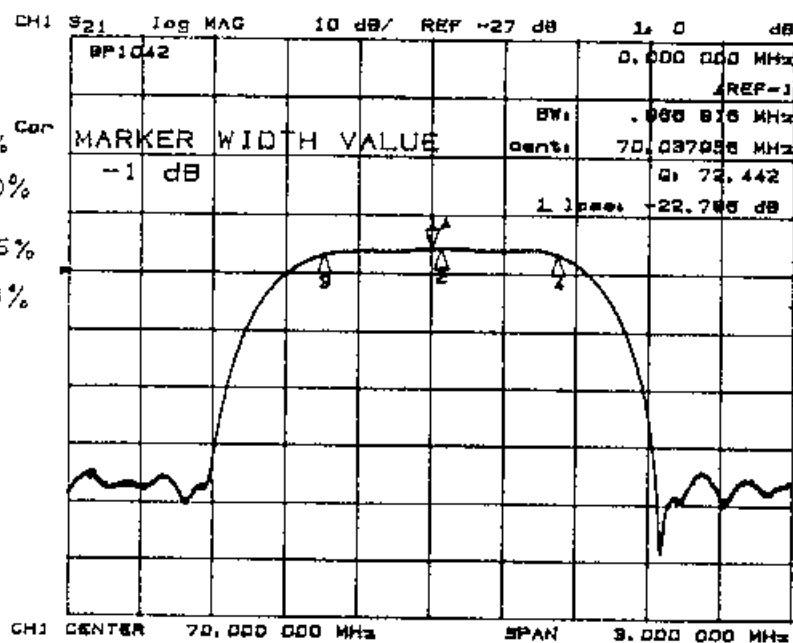
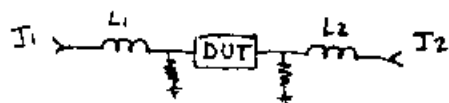
#1

S11/S22

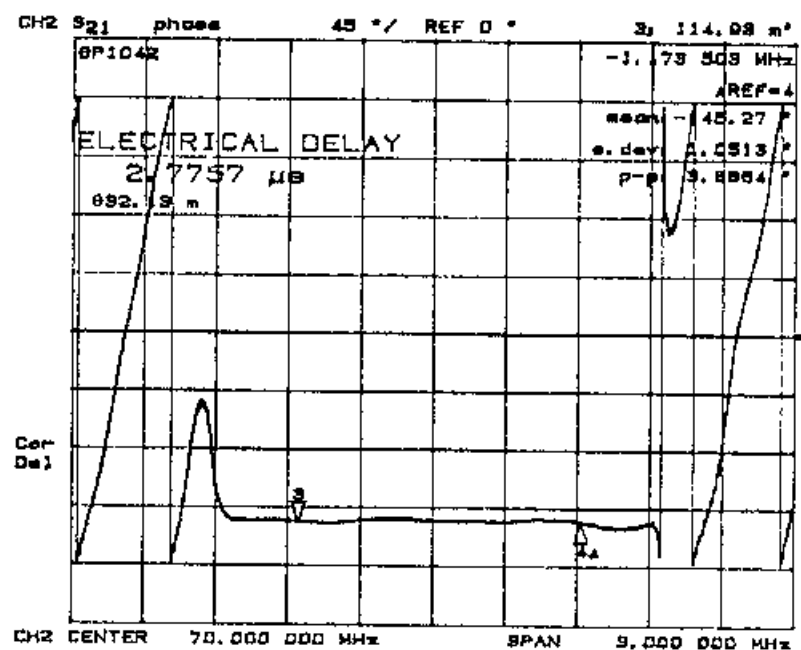
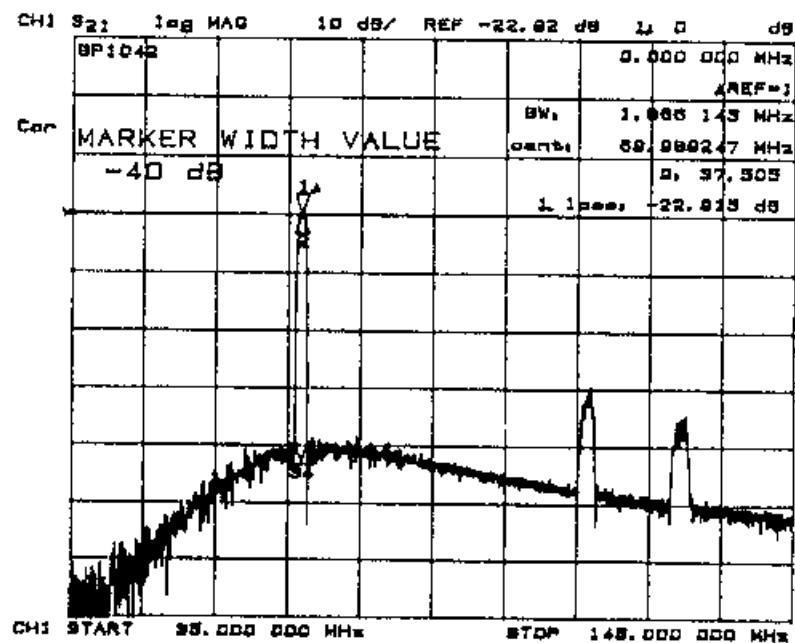
S11, 1k $\Omega$   $\pm$  5% CorL1 330 nH  $\pm$  10%S22, 1k $\Omega$   $\pm$  5%L2 270 nH  $\pm$  10%

1-26-96

SS,



BP1042 plot C



Sheet 7 of 7 REV: A