Ceramic

High Pass Filter

HFCN-3800TR5K+

50Ω 4250 to 10000 MHz

This is HFCN-3800+
Reel Qty. 5000 pcs.

CASE STYLE: FV1206-1
Price: Contact Sales Dept.

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Maximum Ratings

Operating Temperature	-55ºC to 100ºC
Storage Temperature	-55ºC to 100ºC
RF Power Input*	7W max. at 25ºC

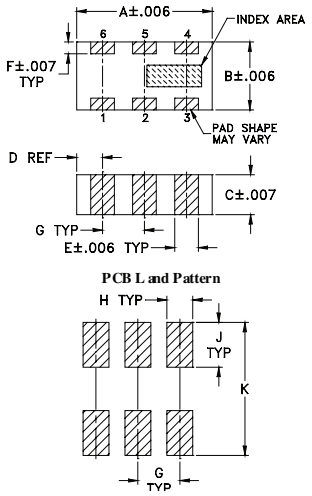
**Passband rating, derate linearly to 3W at 100°C ambient.*

Pin Connections

RF IN	1**
RF OUT	3**
GROUND	2,4,5,6

***RF IN & RF OUT can be interchanged*

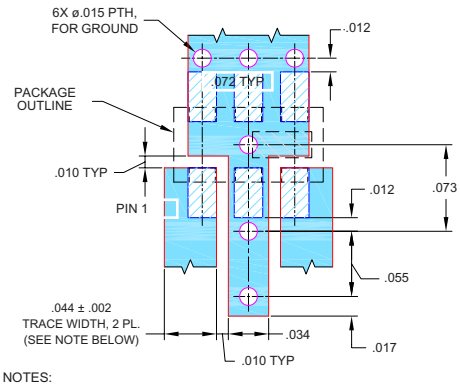
Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	wt.
.126	.063	.035	.024	.022	.012	.039	.042	.024	.123	grams
3.20	1.60	0.89	0.61	0.56	0.30	0.99	1.07	0.61	3.12	.02

Demo Board MCL P/N: TB-285
Suggested PCB Layout(PL-158)



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features
- Low Cost
- Small size
- 5 sections
- Temperature stable
- Excellent power handling, 7W
- DC block in/out, breakdown voltage, 1kV typ.
- Hermetically sealed
- Patent pending

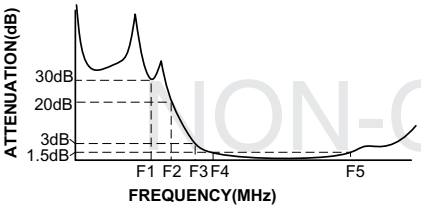
Application
- Sub-harmonic rejection and DC blocking
- Transmitters/Receivers

High Pass Filter Electrical Specifications[1] (T_{AMB}= 25°C)

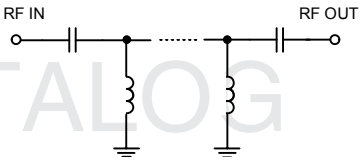
STOPBAND (MHz) (Loss>30dB) Typ. DC-F1	STOPBAND (MHz) (Loss>20dB) Min. DC-F2	fco, MHz Nom. (Loss 3dB) Typ. F3	PASSBAND (MHz) (Loss<1.5dB) Max. F4-F5	PASSBAND (MHz) (Loss<2dB) Max.	VSWR Typ. Stopband	VSWR Typ. Frequency (MHz) 1.5:1	POWER INPUT (W) Max.	NO. OF SECTIONS
DC-3100	DC-3200	3800	4500-9000	4250-10000	20:1	3950-10000	7	5

1. For Applications requiring DC voltage to be applied to the input or output, use HFCN-3800D (DC Resistance to ground is 100 Mohms min.)

Typical Frequency Response



Electrical Schematic

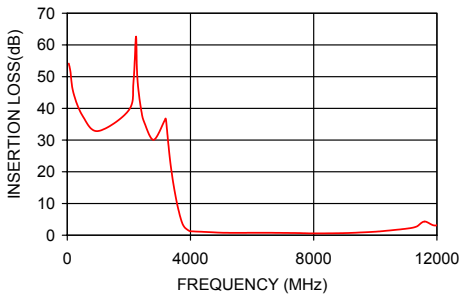


NON-CATALOG

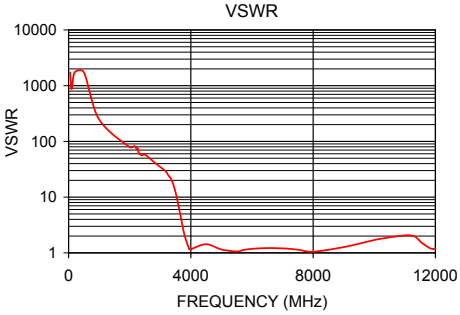
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	54.14	1737.18
500	37.58	1737.18
1500	32.52	108.58
3100	33.38	31.60
3200	36.68	28.03
3400	19.19	18.90
3550	10.63	9.33
3800	2.59	2.00
3950	1.41	1.16
4250	1.14	1.45
4500	1.02	1.43
7000	0.72	1.22
9000	0.68	1.28
10000	1.13	1.70
11330	2.71	1.96
12000	3.15	1.70

HFCN-3800TR5K+
INSERTION LOSS



HFCN-3800TR5K+
VSWR



Ceramic High Pass Filter HFCN-3800TR5K+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS @ +25˚ C (dB)	INPUT RETURN LOSS @ +25˚ C (dB)	OUTPUT RETURNLOSS @ +25˚ C (dB)
40	53.47	0.00	0.00
50	54.77	0.01	0.01
100	51.24	0.00	0.02
200	45.63	0.01	0.01
500	38.20	0.01	0.04
1000	33.57	0.07	0.03
1500	33.33	0.14	0.14
2000	41.16	0.22	0.20
2500	35.39	0.30	0.35
3000	30.82	0.50	0.56
3100	33.87	0.58	0.61
3200	36.48	0.60	0.71
3400	18.78	0.98	1.09
3500	13.18	1.42	1.47
3550	11.01	1.73	1.88
3800	2.99	7.68	8.00
3950	1.52	15.93	17.39
4000	1.29	20.01	23.14
4250	1.03	20.69	21.33
4500	0.96	21.31	21.11
5000	0.81	33.92	27.51
5500	0.83	19.44	19.03
6000	0.88	16.09	15.74
6500	0.89	15.26	14.94
7000	0.83	15.94	15.65
7500	0.74	18.02	17.73
8000	0.64	21.50	22.44
8500	0.61	23.57	25.79
9000	0.67	19.17	18.72
9500	0.89	14.88	14.03
10000	1.20	11.79	11.27
10500	1.65	9.96	9.20
11000	2.25	9.38	8.15
11330	3.27	10.92	7.43
11500	4.38	16.35	6.89
12000	4.23	17.83	12.86
12500	5.61	7.05	5.14
13000	3.36	8.15	6.61
13500	2.67	15.70	9.92
14000	4.78	8.59	6.82
14500	12.44	2.97	3.68

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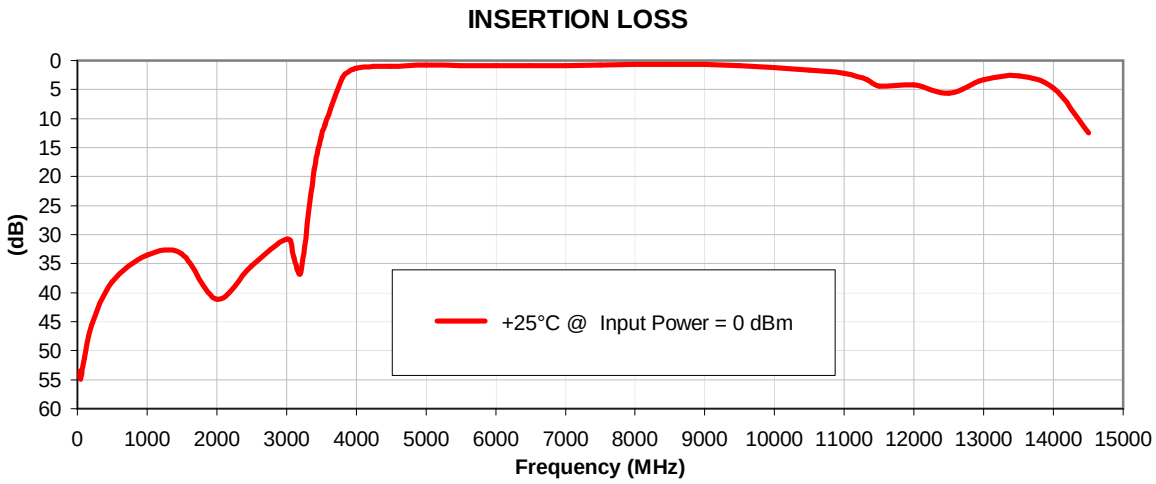
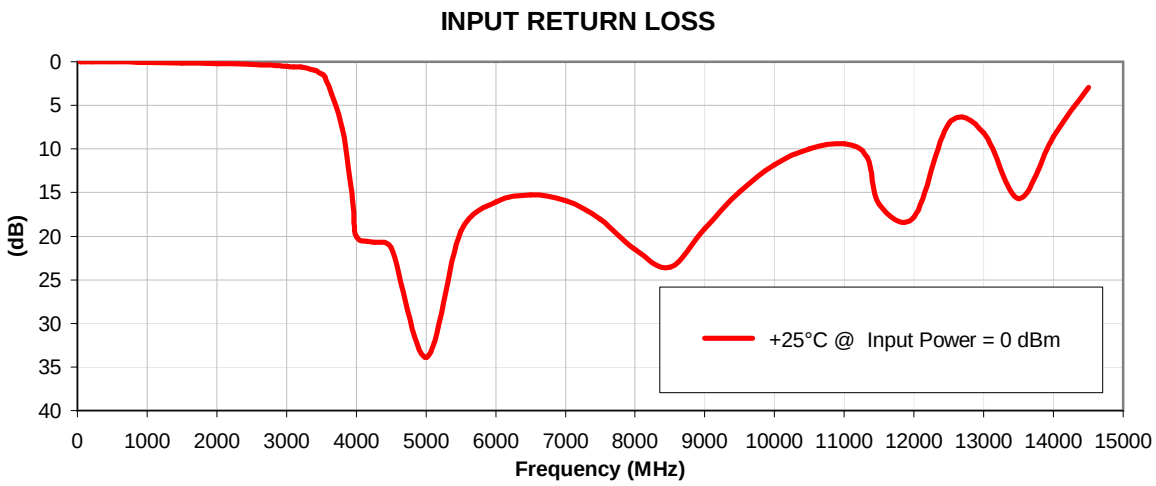
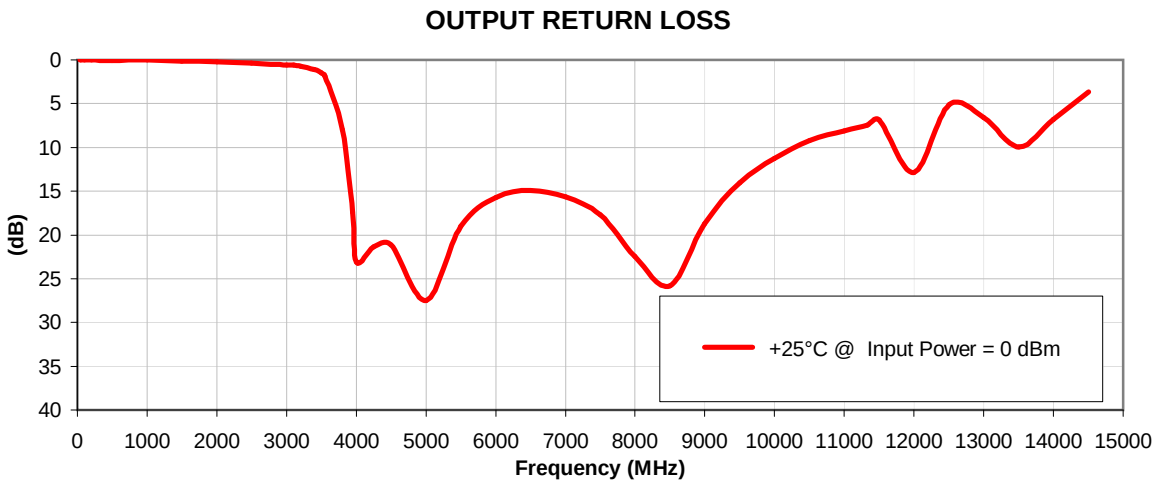
Ceramic High Pass Filter HFCN-3800TR5K+

Typical Performance Curves







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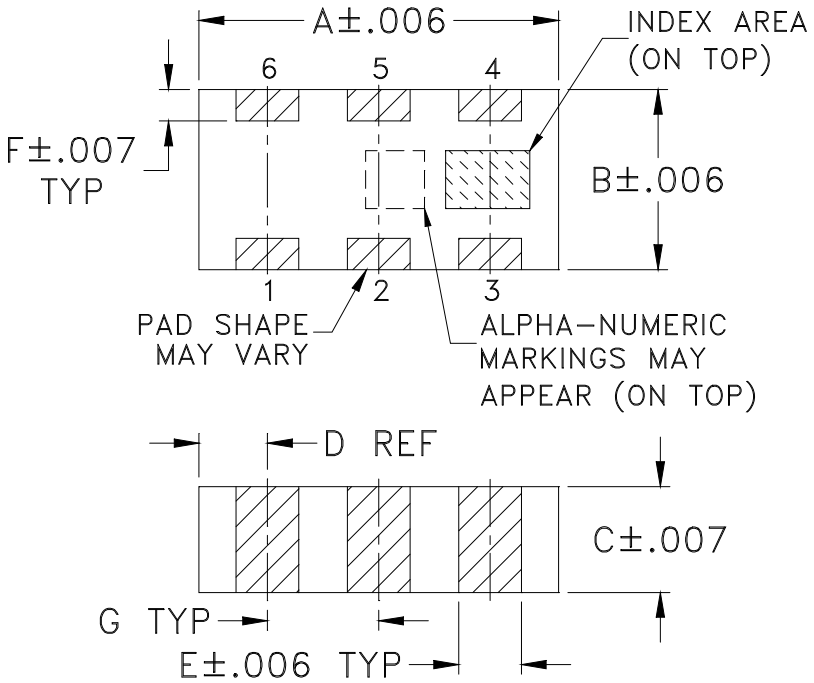
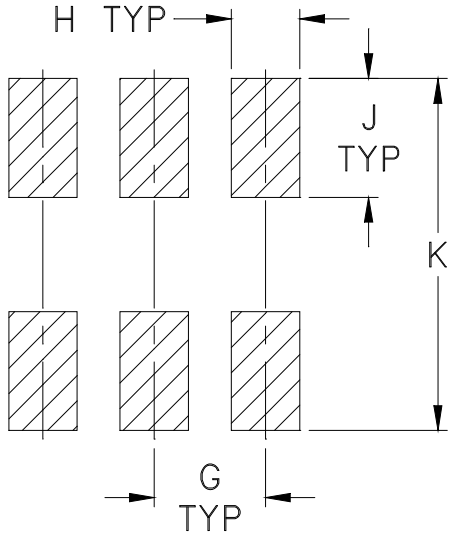
Case Style FV

FV1206-1

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT. GRAM
FV1206-1	.126 (3.20)	.063 (1.60)	.035 (0.89)	.024 (0.61)	.022 (0.56)	.011 (0.28)	.039 (0.99)	.024 (0.61)	.042 (1.07)	.123 (3.12)	-- --	-- --	-- --	-- --	.020

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .01; 3 Pl. ± .005

Notes:

1. Open style, ceramic base.
2. Termination finish: **as shown below or indicated on Data Sheet.**
   For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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Tape & Reel Packaging TR-F75

DEVICE ORIENTATION IN T&R

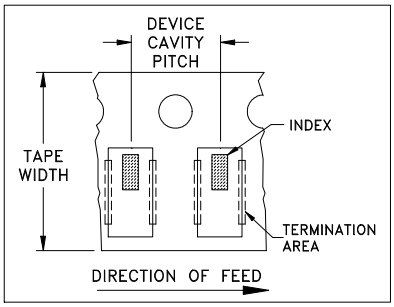

ILLUSTRATION 1

Applicable Case Styles
FV1206-1 FV1206-3

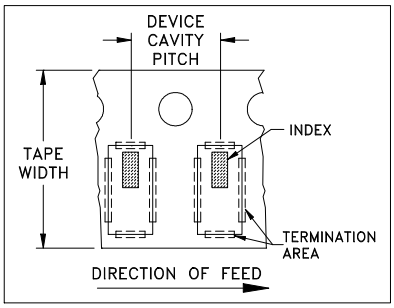

ILLUSTRATION 2

Applicable Case Styles
FV1206-4 FV1206-5 FV1206-6 FV1206-7 FV1206-9

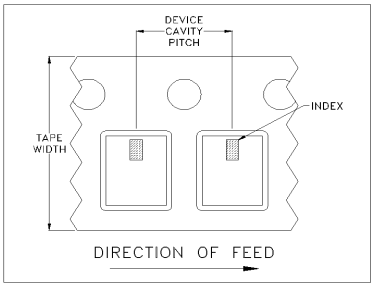

ILLUSTRATION 3

Applicable Case Styles
FV1206-11 FV1206-12 GE0805C-18 NL1008C-6 NL1008C-7 NL1008C-9 NL1008C-10 NL1008C-12

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	3000

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

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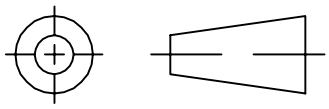
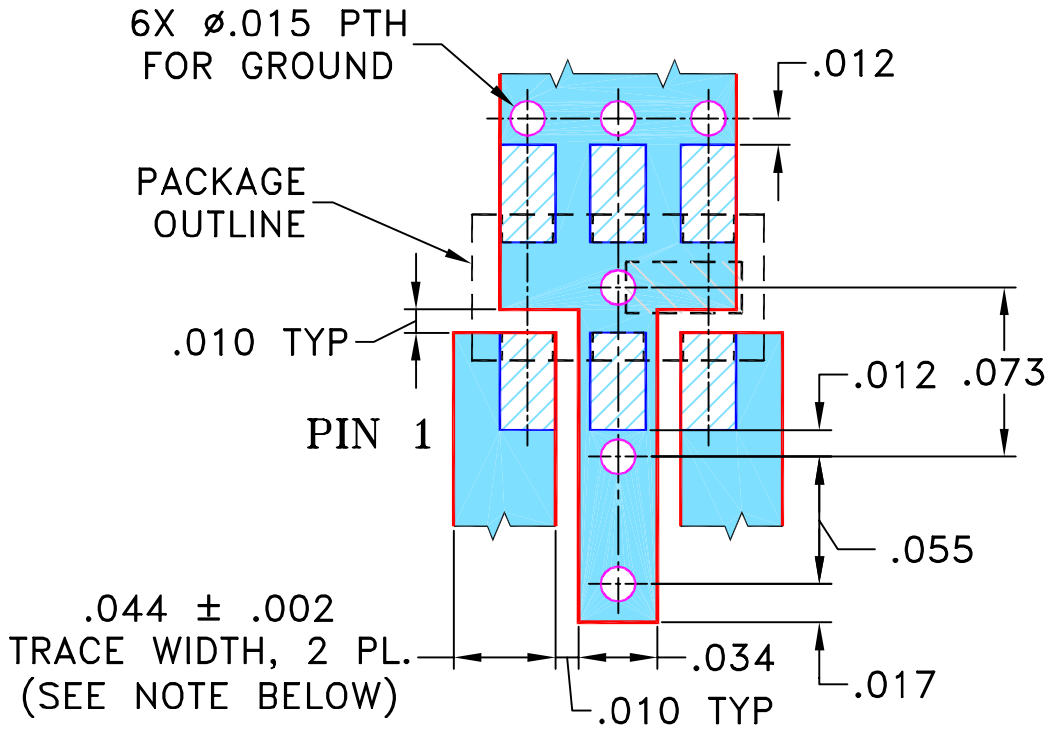
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M92199	NEW RELEASE	05/24/04	AV	ABD
A	M99247	ADD GROUND PTH	06/05	RZ	RZ
A	R60782	ADD GROUND PTH	06/05	RZ	RZ
B	M102713	ADDED "...WITH SMOBC"	01/12/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR FV1206-1 CASE STYLE, "pr" PIN CONNECTION.



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	AV	05/03/04
TOLERANCES ON:	CHECKED	IL	05/24/04
2 PL DECIMALS ±	APPROVED	ABD	05/24/04
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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ASHEETA1.DWG REV:A DATE:01/12/95

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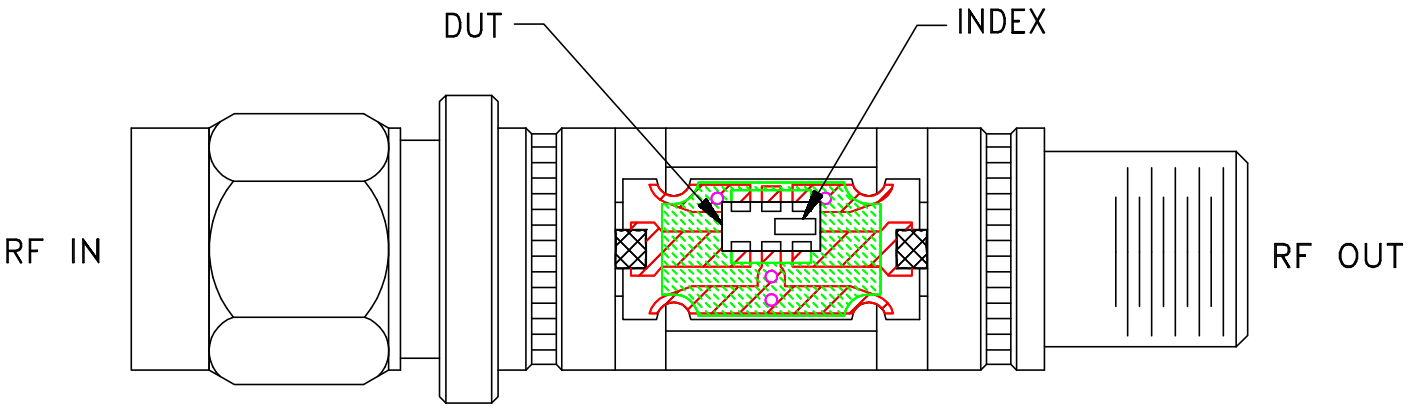
Brooklyn NY 11235

PL, pr, FV1206-1, HFCN, TB-285

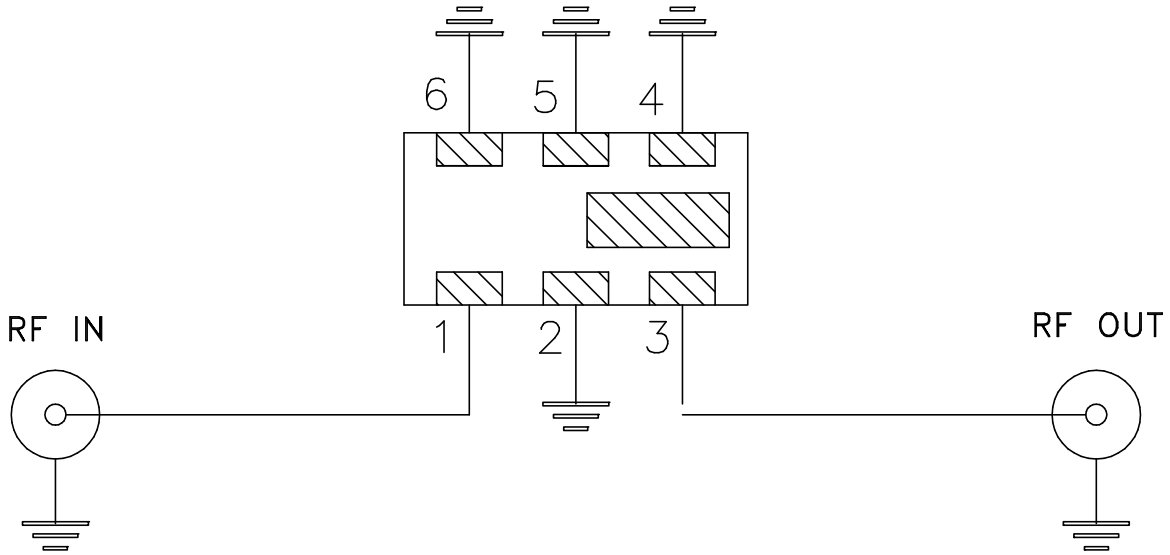
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-158	B

FILE:	SCALE:	SHEET:
98PL158	12:1	1 OF 1

Evaluation Board and Circuit



TB-285



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.020 inch.

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Environmental Specifications ENV06

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A

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