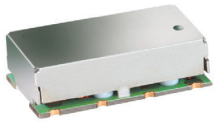
Surface Mount

Bandpass Filter

SXBP-1430-75+

75Ω 950 to 2150 MHz



Generic photo used for illustration purposes only

CASE STYLE: HF1317

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5W Max.

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

INPUT	1
OUTPUT	8
GROUND	2, 3, 4, 5, 6, 7

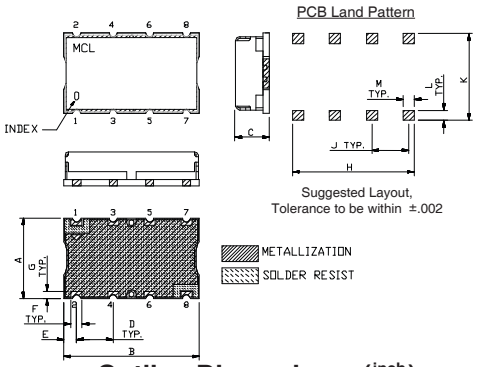
Features

- Wideband, 950 to 2150 MHz
- Flat group delay @ passband, 0.6 nsec typ.
- Good VSWR, 1.3:1 typ @ passband
- Aqueous washable

Applications

- L-band
- Receivers/ Transmitters
- Wireless communication system

Outline Drawing



Outline Dimensions (inch / mm)

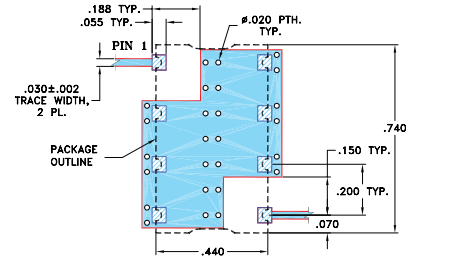
A	B	C	D	E	F
.44	.74	.19	.200	.07	.060
11.18	18.80	4.83	5.08	1.78	1.52

G	H	J	K	L	M	wt.
.040	.660	.200	.470	.055	.060	grams
1.02	16.76	5.08	11.94	1.40	1.52	3.0

Note: Please refer to case style drawing for details

Demo Board MCL P/N: TB-683+

Suggested PCB Layout (PL-281)



NOTE:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030"±.002". 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.

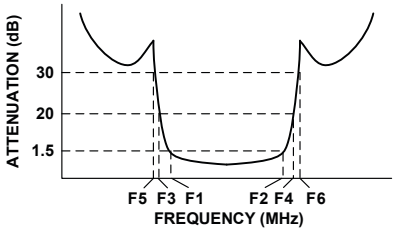
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

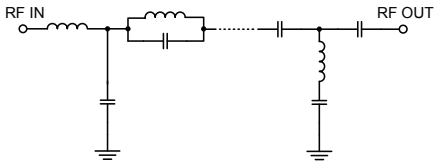
Bandpass Filter Electrical Specifications (T_{AMB}= 25°C)

CENTER FREQ. (MHz)	PASSBAND (MHz) (Loss < 1.5dB)	STOPBANDS (MHz)				VSWR (:1)		
		Loss > 20dB		Loss 30dB Typ.		Passband		Stopband
Fc	F1 - F2	F3	F4	F5	F6	Typ.	Max.	Typ.
1430	950 - 2150	540	2950	530	3000 - 5000	1.3	1.9	20

Typical Frequency Response



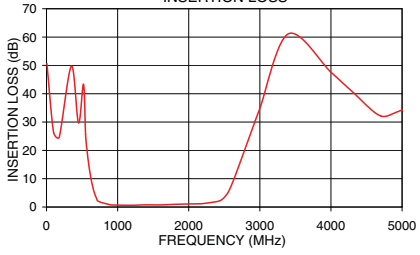
Functional Schematic



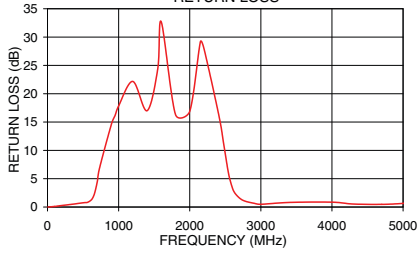
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB) x̄	Insertion Loss (dB) σ	Return Loss (dB)	Frequency (MHz)	Group Delay (nSec)
5.0	50.63	0.39	0.01	900.0	0.78
530.0	35.18	2.03	0.77	950.0	0.67
540.0	29.53	1.19	0.77	1000.0	0.61
580.0	17.63	0.45	0.94	1100.0	0.52
630.0	9.50	0.26	1.47	1200.0	0.46
680.0	4.50	0.14	3.30	1300.0	0.42
725.0	2.17	0.06	6.37	1400.0	0.41
780.0	1.15	0.04	10.96	1430.0	0.41
950.0	0.56	0.02	20.73	1450.0	0.93
1430.0	0.60	0.03	18.82	1500.0	0.94
2150.0	0.97	0.02	24.15	1600.0	0.87
2425.0	1.65	0.06	20.56	1700.0	0.92
2500.0	2.50	0.28	17.51	1800.0	0.97
2575.0	6.28	0.86	5.39	1900.0	0.98
2650.0	13.27	1.06	2.06	2000.0	1.00
2800.0	29.07	1.38	1.11	2100.0	1.12
2850.0	36.43	1.93	1.05	2150.0	1.10
5000.0	38.05	1.34	0.63	2200.0	1.09

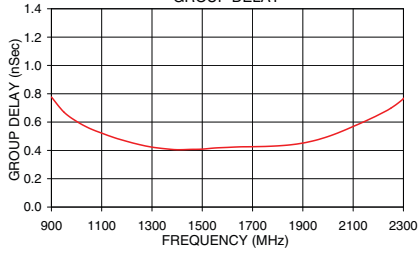
SXBP-1430-75+
INSERTION LOSS



SXBP-1430-75+
RETURN LOSS



SXBP-1430-75+
GROUP DELAY



Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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REV. D
M174392
EDR-9043/1F1
SXBP-1430-75+
URJ/RAV
200709

Surface Mount Band Pass Filter SXBP-1430-75+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
5.0	50.63	0.01
530.0	35.18	0.77
540.0	29.53	0.77
580.0	17.63	0.94
630.0	9.50	1.47
680.0	4.50	3.30
725.0	2.17	6.37
780.0	1.15	10.96
950.0	0.72	16.16
1430.0	0.77	17.48
2150.0	1.14	29.16
2400.0	1.94	16.33
2500.0	3.36	9.10
2600.0	7.67	3.36
2720.0	15.65	1.33
2950.0	31.18	0.60
3000.0	34.86	0.48
5000.0	34.22	0.64

FREQUENCY (MHz)	GROUP DELAY (nsec)
900.0	0.78
950.0	0.67
1000.0	0.61
1100.0	0.52
1200.0	0.46
1300.0	0.42
1400.0	0.41
1430.0	0.41
1500.0	0.41
1600.0	0.42
1700.0	0.43
1800.0	0.43
1900.0	0.45
2000.0	0.50
2100.0	0.57
2150.0	0.61
2200.0	0.65
2300.0	0.77

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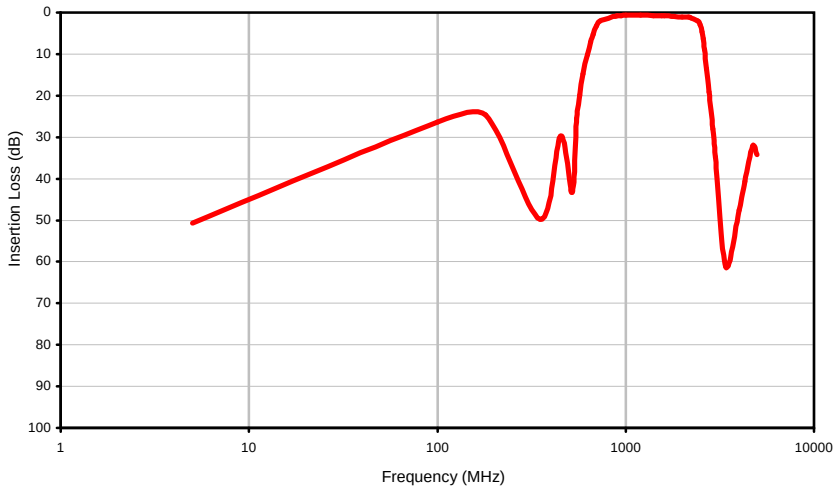
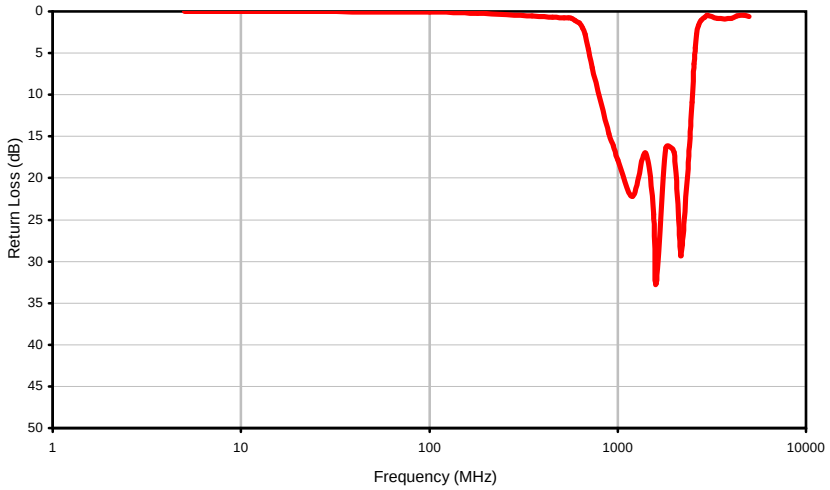
Surface Mount Band Pass Filter SXBP-1430-75+

Typical Performance Curves

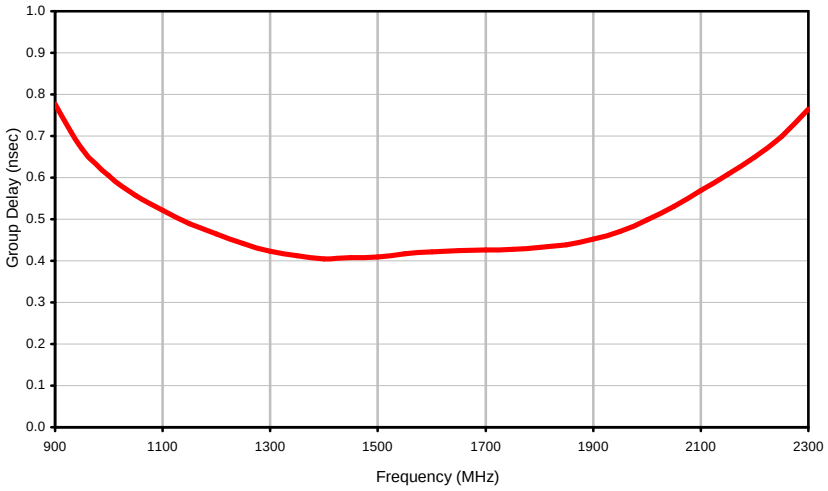
Insertion Loss



Return Loss



Group Delay



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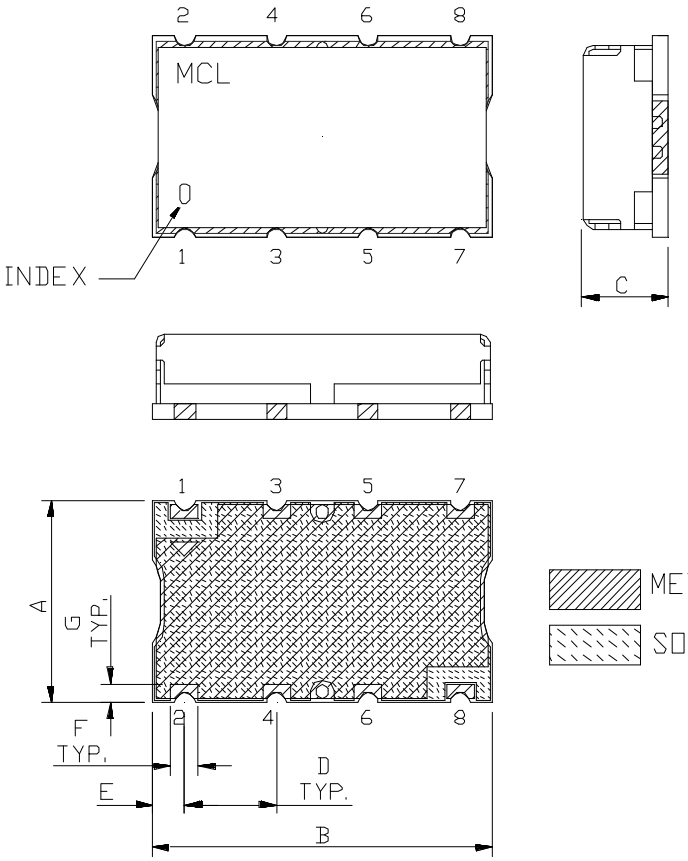
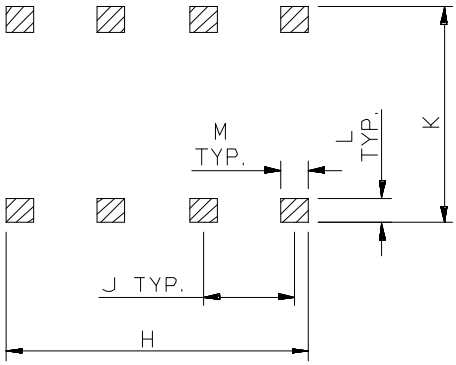
Case Style HF

HF1317

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	WT. GRAMS
HF1317	.44 (11.18)	.74 (18.80)	.19 (4.83)	.200 (5.08)	.07 (1.78)	.060 (1.52)	.040 (1.02)	.660 (16.76)	.200 (5.08)	.470 (11.94)	.055 (1.40)	.060 (1.52)	3.0

Dimensions are in inches (mm). Tolerances: 2 Pl. ±.015"; 3 Pl. ±.01"

Notes:

1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Termination finish:
   For RoHS Case Styles: 2-5 µ inch (.05-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate.
   For RoHS-5 Case Styles: Tin-Lead plate.

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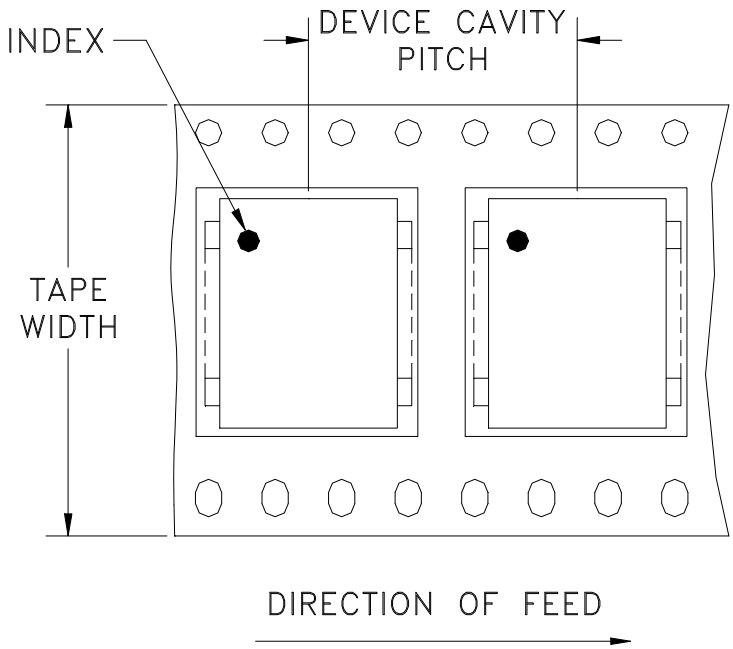
Tape & Reel Packaging TR-F5

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	16	13	500

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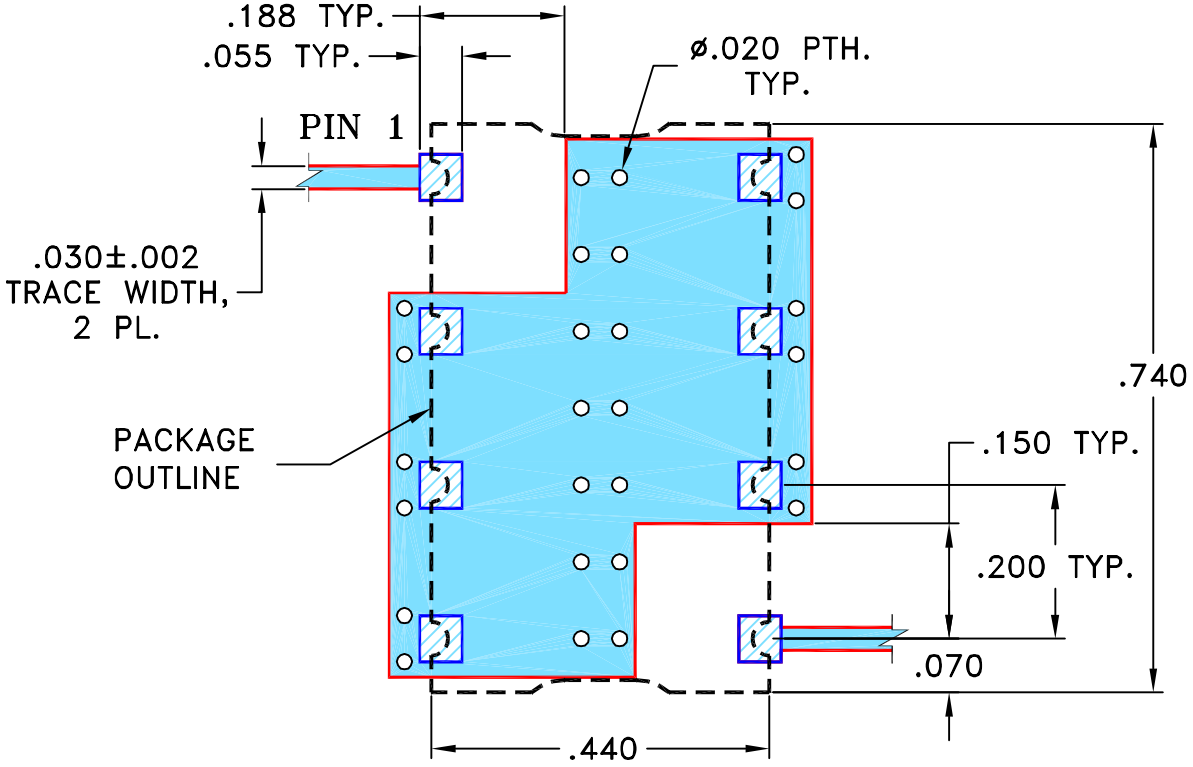
THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M114157	NEW RELEASE (FROM RAVON)	10/07	DK	HH
OR	R70641	NEW RELEASE (FROM RAVON)	10/07	DK	HH

SUGGESTED MOUNTING CONFIGURATION
FOR HF1317 CASE STYLE, cr PIN CONNECTION, 75 OHM



NOTE:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030"±.002". 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	DK (RAVON)	29 OCT 07
TOLERANCES ON:	CHECKED	RZ (RAVON)	29 OCT 07
2 PL DECIMALS ±	APPROVED	HH (RAVON)	29 OCT 07
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

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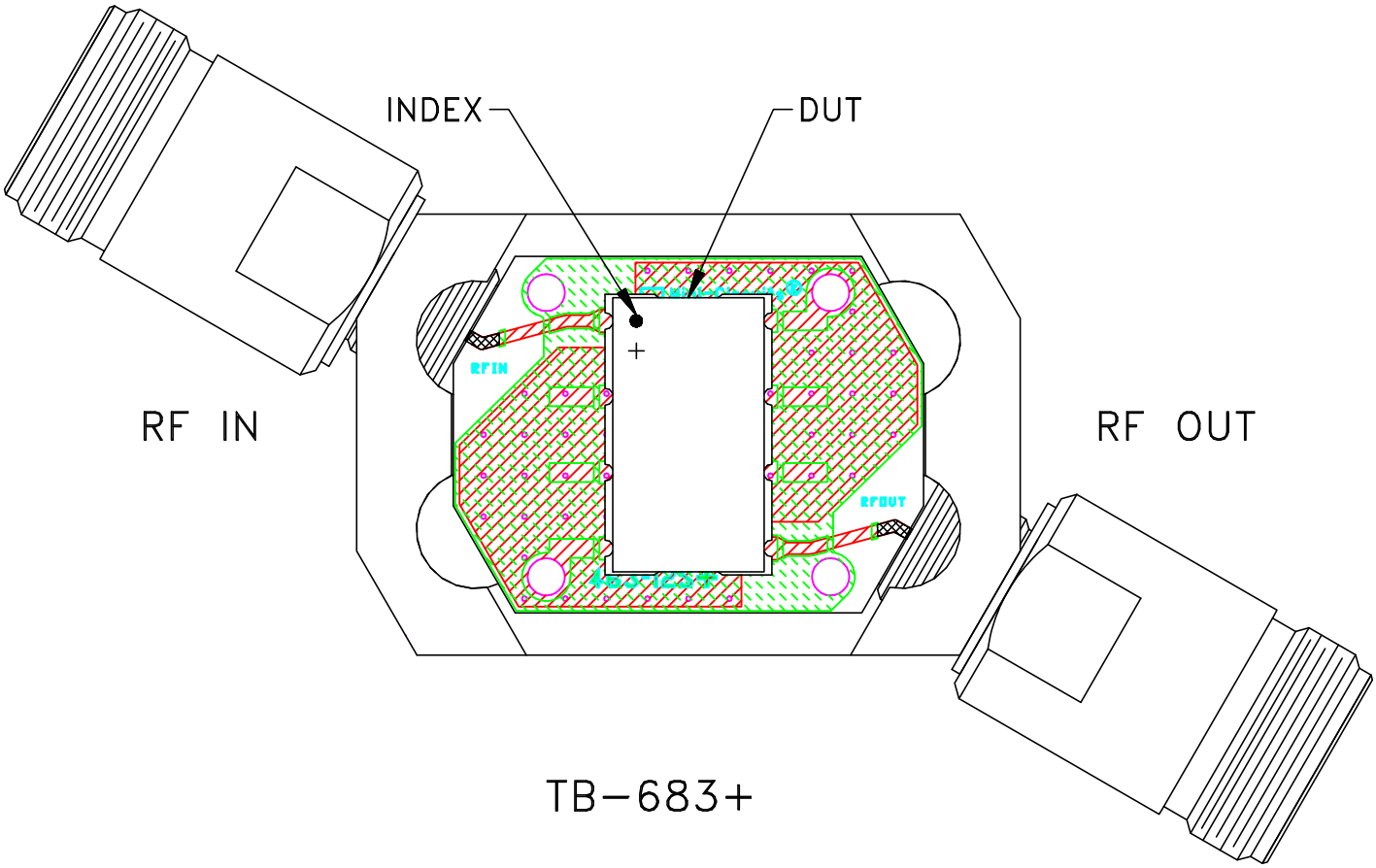
PL,cr,HF1317,SXBP,TB-466+,75 OHM

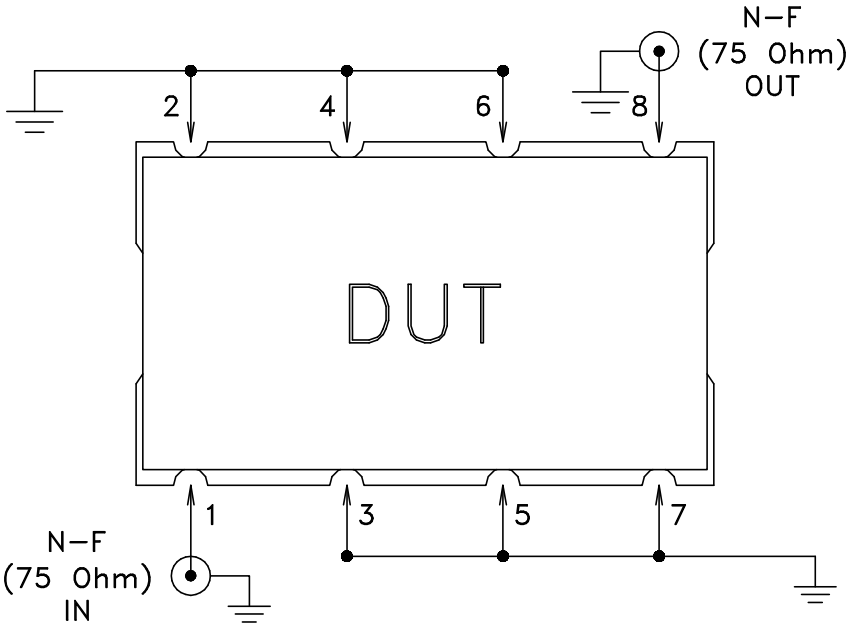
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-281	OR

FILE:	SCALE:	SHEET:
98PL281	4:1	1 OF 1

Evaluation Board and Circuit



TB-683+



Schematic Diagram

Notes:

1. 75 Ohm N Female connectors.
2. PCB Material: ROGERS (RO4350B) OR Equivalent
   Dielectric Constant=3.48±.05, Thickness=.030 inch.

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Environmental Specifications ENV02T1

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	-40° to 85°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
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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, 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
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215

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