

Non-Catalog Model

Frequency Mixer

SKY-53HR

Level 17 (LO Power +17 dBm)

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.



Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : BJ398

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	2800		5300	MHz
	RF (fL to fU)	2800		5300	MHz
	IF	0		500	MHz
Conversion Loss	mid band		5.7	9.5	dB
	Total Range			9.5	dB
LO-RF Isolation	Low Range	15	28		dB
	Mid Range	15	28		dB
	Upper Range	15	28		dB
LO-IF Isolation	Low Range	8	12		dB
	Mid Range	8	12		dB
	Upper Range	8	12		dB
1 dB Comp. Input Power			+14		dBm

Notes: Low Range = [fL to 10fL]
mid band = [2fL to fU/2]

Mid Range = [10fL to fU/2]

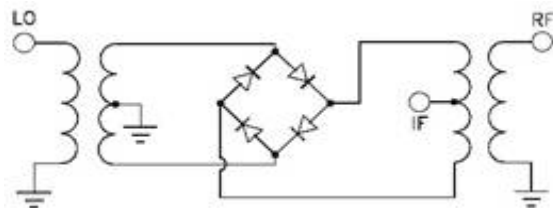
Upper Range = [fU/2 to fU]

Non-hermetic

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

PIN CONNECTIONS	
LO	5
RF	1
IF	7
GROUND	2, 3, 4, 6, 8

Electrical Schematics



Typical Performance Data

RF (MHz)	LO (MHz)	CONVERSION LOSS (dB)			LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
		@LO (dBm)				@LO (dBm)			@LO (dBm)		
		+14	+17	+20		+14	+17	+20	+14	+17	+20
2800.0	2830.0	7.48	7.10	6.73	2800.0	25.6	25.3	24.1	17.7	15.6	13.2
3000.0	3030.0	7.40	6.98	6.56	3000.0	22.4	22.9	22.7	13.6	13.4	11.7
3224.5	3254.5	6.55	6.23	6.06	3224.5	21.6	23.4	23.4	11.4	12.4	11.3
3413.2	3443.2	6.26	5.97	5.86	3413.2	21.4	23.9	24.8	10.2	11.5	11.0
3601.9	3631.9	6.44	6.04	5.86	3601.9	22.3	24.8	26.3	9.4	10.8	10.6
3649.1	3679.1	6.64	6.25	5.99	3649.1	22.6	25.1	26.8	9.7	10.9	10.7
3837.7	3867.7	6.49	6.43	6.28	3837.7	24.9	26.8	28.3	10.1	11.4	11.7
4000.0	4030.0	6.38	6.79	6.75	4000.0	26.1	29.5	32.4	10.9	12.2	12.6
4120.8	4090.8	6.53	6.93	6.93	4120.8	25.2	28.1	30.6	11.7	12.9	13.7
4215.1	4185.1	6.62	6.85	7.00	4215.1	28.5	31.9	33.2	12.1	13.4	14.3
4356.6	4326.6	6.72	6.62	7.26	4356.6	31.0	37.1	44.4	12.5	13.8	14.9
4498.1	4468.1	6.73	6.32	6.80	4498.1	31.7	34.5	37.6	13.0	14.2	15.5
4639.6	4609.6	6.73	6.33	6.55	4639.6	30.0	32.6	34.9	13.8	15.2	16.8
4781.1	4751.1	6.71	6.41	6.62	4781.1	28.3	30.1	31.1	15.5	17.0	18.7
4828.3	4798.3	6.79	6.48	6.68	4828.3	27.7	29.5	30.4	15.8	17.3	19.1
5000.0	4970.0	7.07	6.87	7.20	5000.0	26.9	29.0	29.7	18.1	19.5	21.2
5111.3	5081.3	7.36	7.09	7.29	5111.3	26.9	28.7	29.0	19.2	20.5	22.4
5158.5	5128.5	7.47	7.16	7.34	5158.5	26.6	28.3	28.4	19.4	21.0	22.9
5252.8	5222.8	7.78	7.42	7.50	5252.8	26.6	27.8	27.6	20.2	21.7	23.4
5300.0	5270.0	7.88	7.55	7.66	5300.0	26.6	27.6	27.2	20.6	22.0	23.5

Frequency Mixer

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Typical Performance Data

RF/LO (MHz)	RF VSWR (:1)			LO VSWR (:1)			IF (MHz)	IF VSWR (:1)			LO/RF (MHz)	max. DC output (mV)	DC Offset (mV)
	@LO (dBm)			@LO (dBm)				@LO (dBm)			@LO (dBm)		
	+14	+17	+20	+14	+17	+20		+14	+17	+20	+17		
2800.0	6.12	5.19	4.61	2.46	1.49	1.48	1.6	1.36	1.01	1.15	2800.0	773.2	-23.06
3000.0	4.60	3.73	3.75	1.97	1.35	1.44	3.3	1.36	1.01	1.15	2931.6	667.1	11.77
3224.5	2.87	2.66	2.93	1.70	1.24	1.43	5.5	1.36	1.01	1.15	3063.2	715.9	10.79
3413.2	1.97	2.26	2.70	1.63	1.19	1.41	7.8	1.36	1.01	1.15	3194.7	616.3	-27.82
3601.9	1.59	2.21	2.81	1.42	1.10	1.46	10.0	1.36	1.01	1.15	3326.3	491.6	-76.80
3649.1	1.59	2.28	2.88	1.39	1.09	1.53	12.0	1.36	1.01	1.15	3457.9	483.7	-6.34
3837.7	1.73	2.48	3.24	1.18	1.05	1.48	34.0	1.37	1.01	1.15	3589.5	527.9	-6.38
4000.0	1.94	2.55	3.09	1.34	1.21	1.55	56.0	1.37	1.02	1.13	3721.1	448.5	-19.11
4120.8	2.08	2.61	3.03	1.48	1.33	1.57	78.0	1.36	1.02	1.14	3852.6	388.0	-16.44
4215.1	2.08	2.61	3.07	1.61	1.38	1.57	100.0	1.36	1.02	1.14	3984.2	478.4	10.22
4356.6	2.11	2.62	3.04	1.69	1.37	1.57	150.0	1.36	1.03	1.13	4115.8	435.0	-8.51
4498.1	2.19	2.69	3.16	1.84	1.53	1.71	188.9	1.37	1.04	1.11	4247.4	278.2	-25.26
4639.6	2.36	2.85	3.32	2.01	1.70	1.84	227.8	1.38	1.04	1.11	4379.0	174.5	-24.83
4781.1	2.67	3.17	3.71	2.73	2.13	2.13	266.7	1.42	1.07	1.07	4510.5	333.8	-2.64
4828.3	2.81	3.32	3.85	2.62	2.02	1.95	305.6	1.46	1.10	1.07	4642.1	339.4	-1.26
5000.0	3.24	3.70	4.24	3.20	2.27	1.95	344.4	1.51	1.14	1.06	4773.7	93.4	-10.15
5111.3	3.55	3.97	4.48	2.77	2.01	1.67	383.3	1.57	1.18	1.08	4905.3	127.0	-22.47
5158.5	3.61	4.03	4.54	3.04	2.12	1.72	422.2	1.63	1.22	1.09	5036.8	232.7	-26.14
5252.8	3.89	4.30	4.77	2.87	1.98	1.64	461.1	1.69	1.27	1.12	5168.4	24.9	-22.22
5300.0	3.91	4.27	4.77	2.53	1.84	1.57	500.0	1.74	1.30	1.13	5300.0	-100.9	-25.84

REV. X1
SKY-53HR
060615
Page 2 of 2



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant

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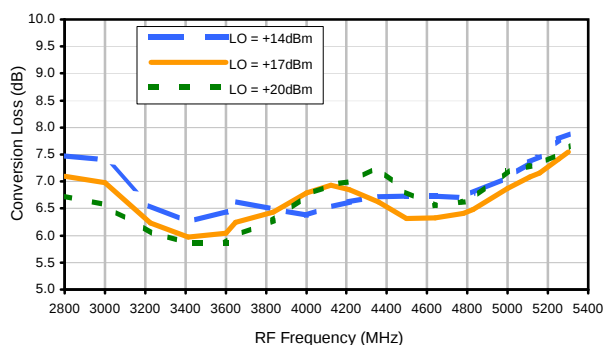


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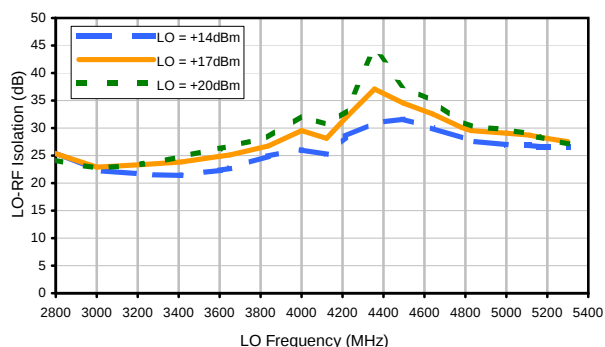


Typical Performance Curves

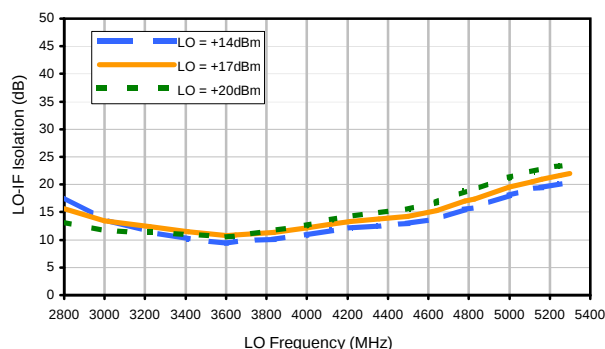
Conversion Loss



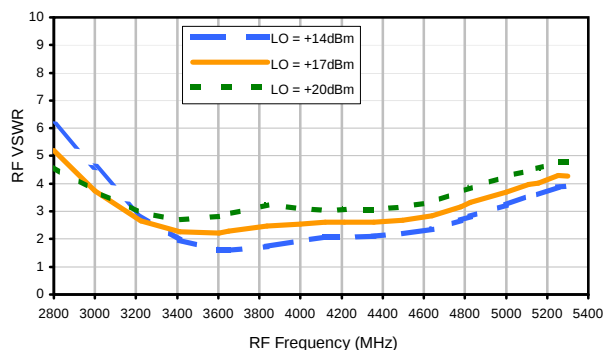
LO-RF Isolation



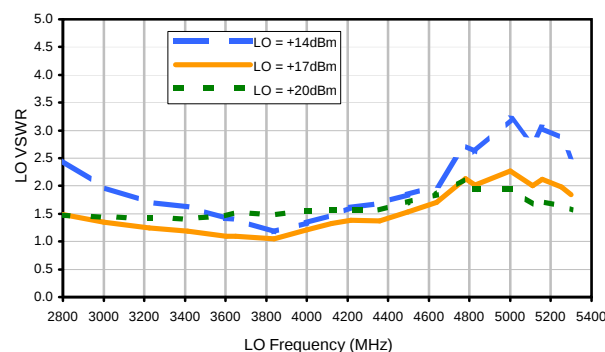
LO-IF Isolation



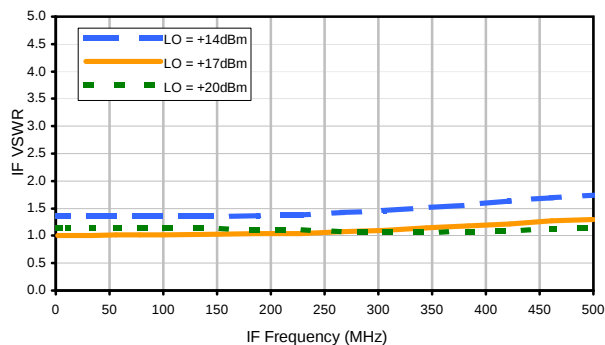
RF VSWR



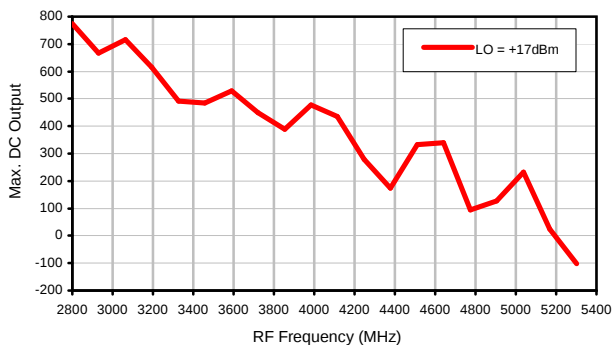
LO VSWR



IF VSWR



Max. DC Output



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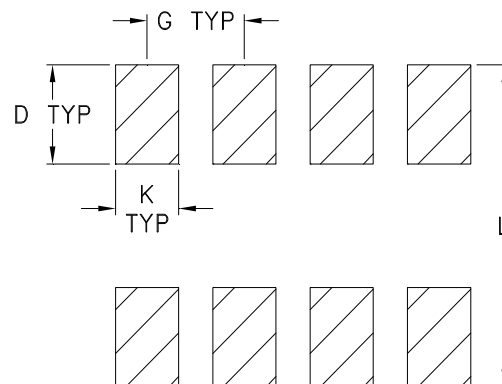
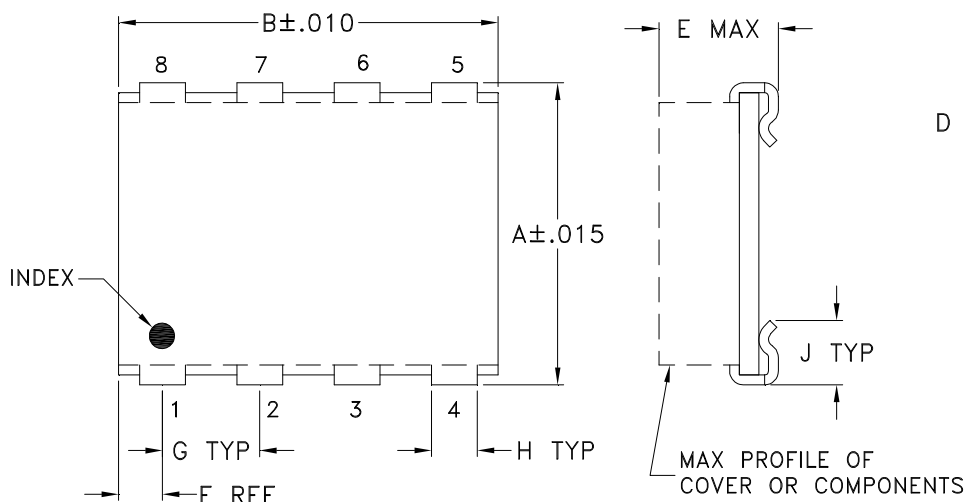


Outline Dimensions

BJ293

BJ398

PCB Land Pattern



Suggested Layout,
Tolerance to be within $\pm .002$

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
BJ293	.395 (10.03)	.500 (12.70)	-- --	.100 (2.54)	.230 (5.84)	.100 (2.54)	.100 (2.54)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.425 (10.80)	.80
BJ398	.305 (7.75)	.390 (9.91)	-- --	.100 (2.54)	.105 (2.67)	.045 (1.14)	.100 (2.54)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.325 (8.26)	.20

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

Notes:

- Case material: Plastic.
- Base material: Printed wiring laminate.
- Termination finish:
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



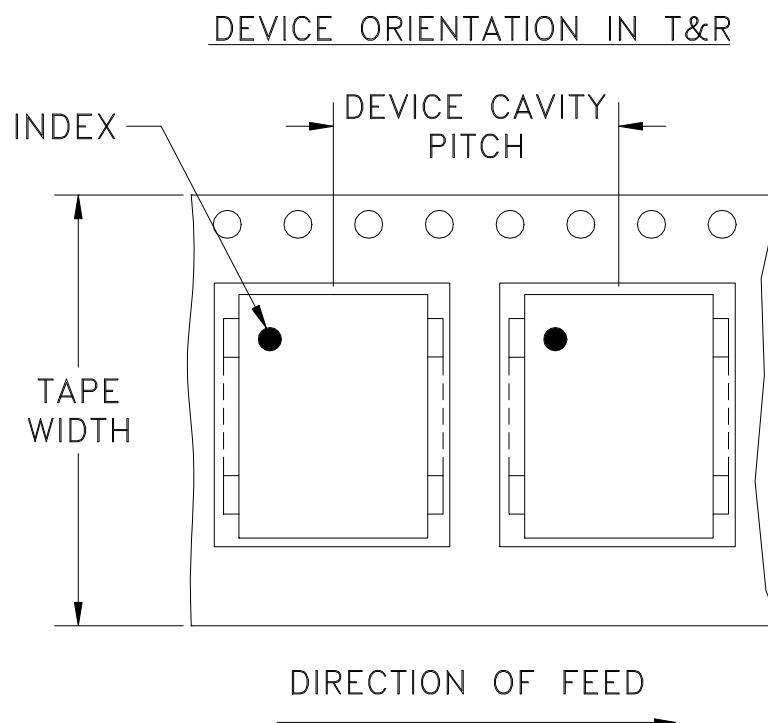
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Tape & Reel Packaging TR-F29



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
24	12	13	500

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.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf



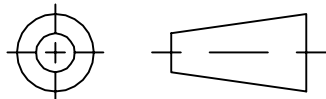
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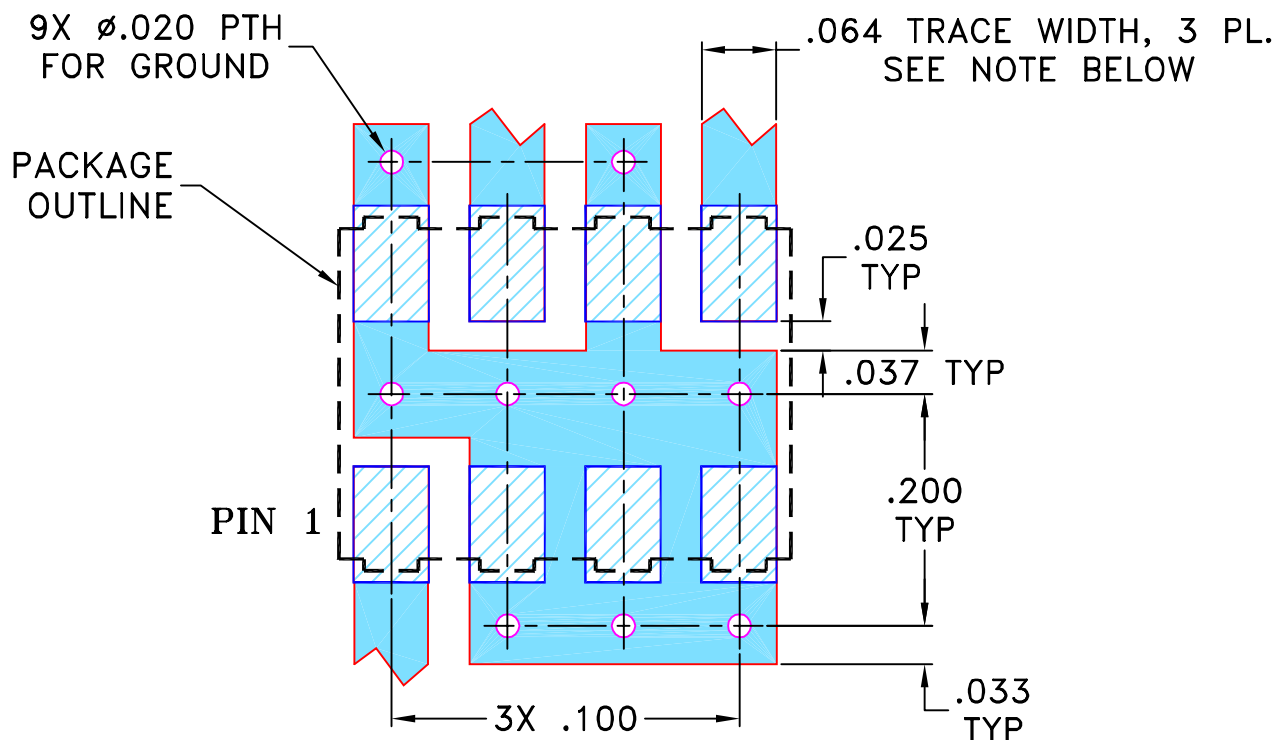
THIRD ANGLE PROJECTION



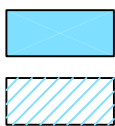
REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M88233	NEW RELEASE	08/06/03	AV	WL
A	M102713	UPDATED NOTES, ADDED "...WITH SMOBC"	01/16/06	GT	IL

**SUGGESTED MOUNTING CONFIGURATION
FOR BJ398 CASE STYLE, "je/hp" PIN CONNECTIONS**

**NOTES:**

1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" $\pm$.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.



SOLID BLUE DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
HATCHED BLUE DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

TOLERANCES ON:
2 PL DECIMALS $\pm$
3 PL DECIMALS $\pm$.005
ANGLES $\pm$
FRACTIONS $\pm$

INITIALS

DATE

DRAWN

AV

07/28/03

CHECKED

IL

08/06/03

APPROVED

WL

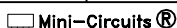
08/06/03

**Mini-Circuits®**13 Neptune Avenue
Brooklyn NY 11235**PL, je/hp, BJ398, SKY, TB-11**SIZE
ACODE IDENT
15542DRAWING NO:
98-PL-056REV:
A

FILE: 98PL056

SCALE: 6:1

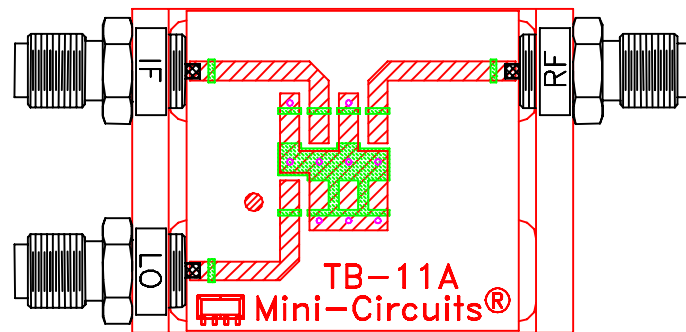
SHEET: 1 OF 1



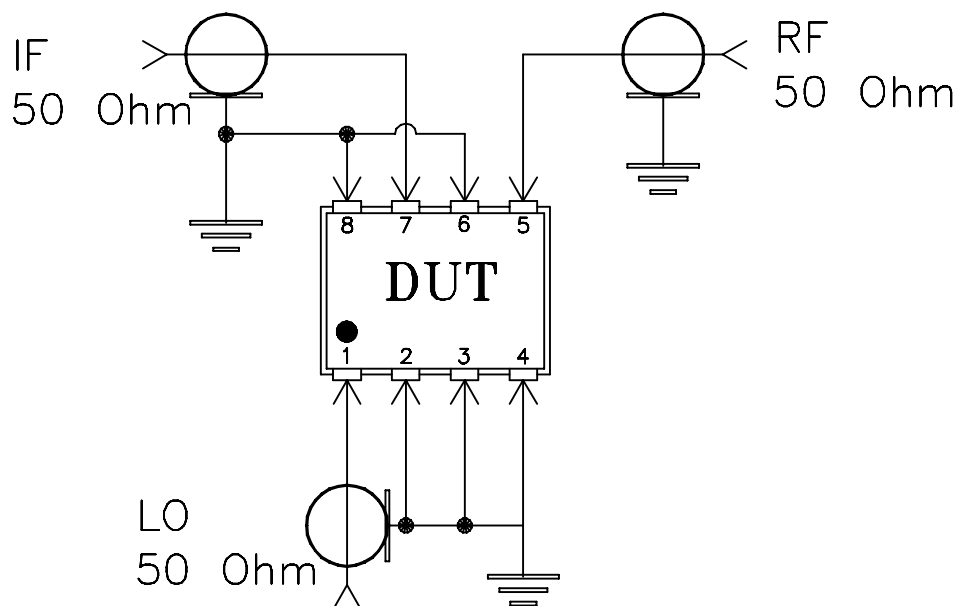
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ASHEETA1.DWG REV:A DATE:01/12/95

Evaluation Board and Circuit



TB-11



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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