

Diplexer

50Ω 1 to 2500 MHz (1-1050, 1650-2500 MHz)

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature*	-55°C to 100°C
RF Power Input**	2W at 25°C

* 12 months max.

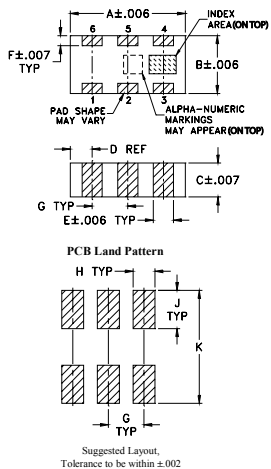
** passband rating, derate linearly to 0.5W at 85°C ambient.

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

Pin Connections

Low Pass Port	3
High Pass Port	1
Common Port	5
Ground	2,4,6

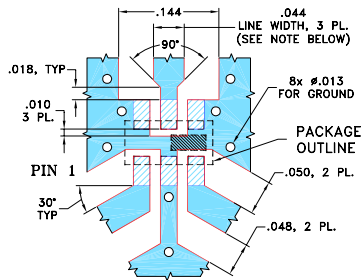
Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F
.126	.063	.035	.024	.022	.011
3.20	1.60	0.89	0.61	0.56	0.28
G	H	J	K		wt
.039	.024	.042	.123		grams
0.99	0.61	1.07	3.12		.020

Demo Board MCL P/N: TB-706+
Suggested PCB Layout (PL-398)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" $\pm$.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.

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

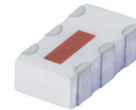
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

+RoHS Compliant

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

Features

- low insertion loss
- high rejection
- temperature stable
- miniature package

Applications

- satellite systems
- communication systems
- multiband systems
- cellular
- GPS
- WCDMA

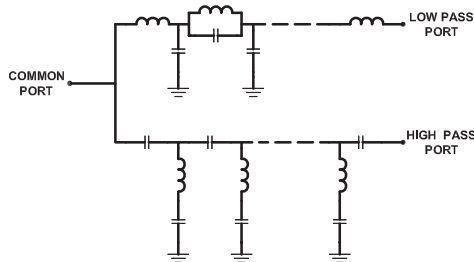
Electrical Specifications at 25°C

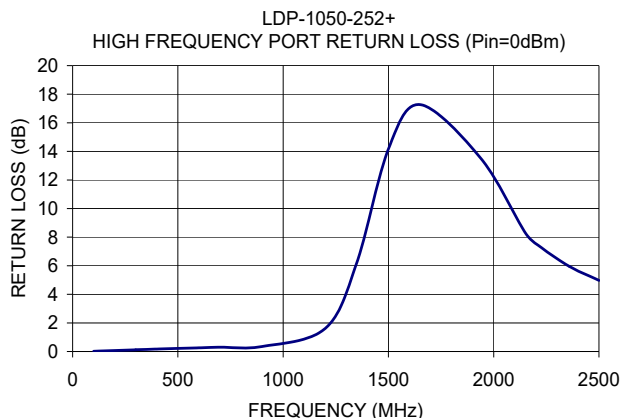
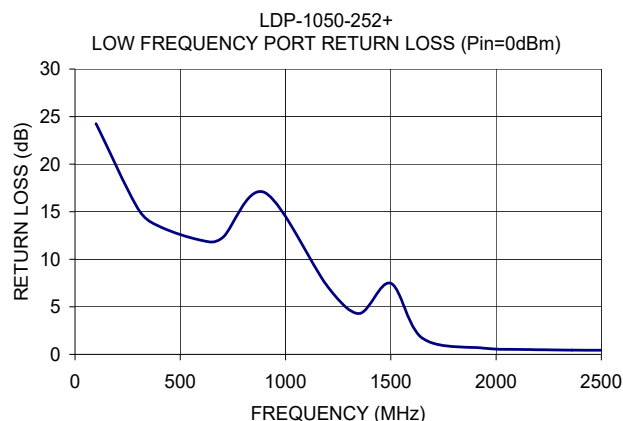
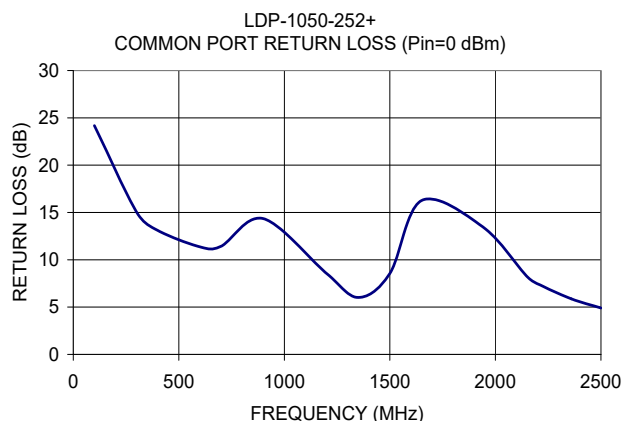
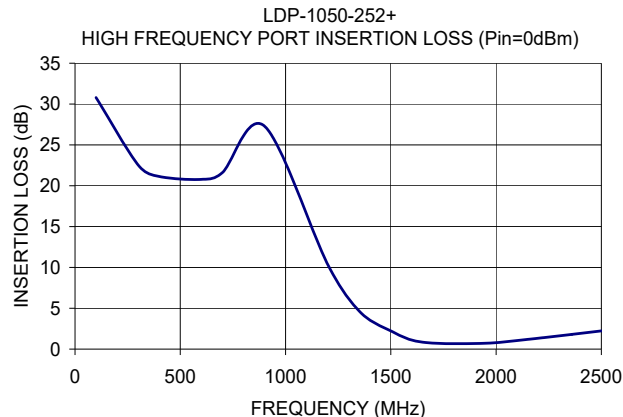
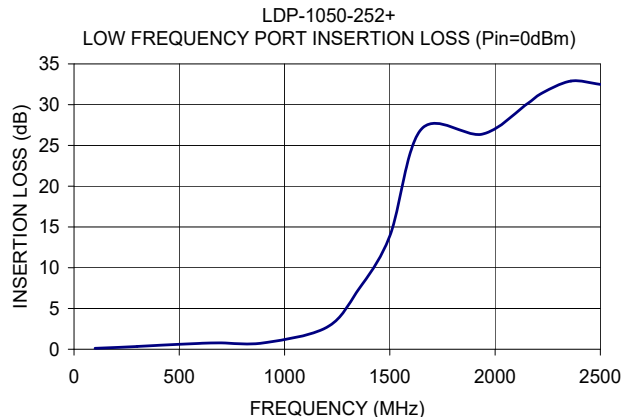
Parameter		Port	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	Low Pass	1 - 1050	—	0.6	1.5	dB
		High Pass	1650 - 2150	—	1.0	1.8	
			2150 - 2500	—	2.0	2.9	
	Return Loss	Low Pass	1 - 1050	10	15	—	dB
		High Pass	1650 - 2150	6	12	—	
			2150 - 2500	—	8	—	
		Common	1 - 1050	11	14	—	
			1650 - 2150	6	17	—	
			2150 - 2500	—	8	—	
Stop Band Isolation		High Pass	1 - 200	20	32	—	dB
			200 - 800	18	21	—	
			800 - 1050	20	25	—	
		Low Pass	1650 - 2500	18	31	—	dB

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)		Return Loss (dB)		
	Low Pass Port	High Pass Port	Common Port	Low Pass Port	High Pass Port
100.0	0.11	30.80	24.17	24.26	0.02
300.0	0.35	22.54	15.04	15.29	0.12
400.0	0.49	21.14	13.10	13.47	0.17
600.0	0.72	20.78	11.37	12.00	0.26
700.0	0.78	21.60	11.43	12.26	0.30
900.0	0.78	27.30	14.35	17.03	0.35
1200.0	2.68	10.37	8.55	7.12	1.62
1350.0	7.27	4.66	6.02	4.30	6.21
1500.0	13.90	2.23	8.55	7.48	14.17
1650.0	27.00	0.86	16.26	1.70	17.27
1940.0	26.39	0.71	13.48	0.65	13.49
2150.0	30.06	1.19	8.22	0.51	8.31
2220.0	31.38	1.39	7.26	0.48	7.34
2360.0	32.90	1.81	5.87	0.45	5.95
2500.0	32.48	2.23	4.90	0.44	4.98

Functional Schematic





Notes

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Surface Mount Diplexer

LDP-1050-252+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)		CROSS OVER ISOLATION (dB) (between LPF and HPF)	RETURN LOSS (dB)		
	Low Pass port	High Pass port		Common port	Low Pass port	High Pass port
1.0	0.03	70.85	70.43	47.13	47.44	0.00
5.0	0.04	56.69	56.75	45.83	46.82	0.00
10.0	0.04	50.63	50.68	42.55	43.28	0.00
50.0	0.08	36.71	36.79	30.46	30.53	0.01
100.0	0.11	30.80	30.87	24.17	24.26	0.02
200.0	0.22	25.25	25.23	18.27	18.43	0.06
300.0	0.35	22.54	22.32	15.04	15.29	0.12
400.0	0.49	21.14	20.62	13.10	13.47	0.17
500.0	0.62	20.62	19.75	11.93	12.40	0.22
600.0	0.72	20.78	19.56	11.37	12.00	0.26
700.0	0.78	21.60	20.11	11.43	12.26	0.30
800.0	0.79	23.26	21.83	12.28	13.57	0.32
850.0	0.79	24.76	23.54	13.12	14.83	0.34
900.0	0.78	27.30	26.52	14.35	17.03	0.35
950.0	0.79	32.47	33.14	15.97	21.14	0.38
1000.0	0.84	34.39	38.15	17.49	32.35	0.42
1050.0	0.98	24.52	25.42	16.96	22.22	0.51
1100.0	1.27	18.30	19.57	14.06	14.60	0.69
1150.0	1.80	13.81	15.63	10.95	10.12	1.03
1200.0	2.68	10.37	12.76	8.55	7.12	1.62
1350.0	7.27	4.66	8.25	6.02	4.30	6.21
1400.0	8.86	3.81	7.92	6.36	5.97	9.86
1450.0	10.72	3.07	8.88	7.17	9.62	15.00
1500.0	13.90	2.23	12.04	8.55	7.48	14.17
1550.0	18.48	1.54	17.02	10.44	4.02	13.19
1600.0	23.54	1.12	22.40	12.89	2.45	14.38
1650.0	27.00	0.86	25.88	16.26	1.70	17.27
1700.0	27.16	0.70	26.40	21.36	1.30	22.08
1750.0	26.34	0.63	26.02	30.47	1.06	29.49
1800.0	25.83	0.60	25.84	24.60	0.90	23.87
1940.0	26.39	0.71	26.44	13.48	0.65	13.49
2080.0	28.66	1.01	27.53	9.46	0.54	9.53
2150.0	30.06	1.19	27.95	8.22	0.51	8.31
2220.0	31.38	1.39	28.26	7.26	0.48	7.34
2360.0	32.90	1.81	28.44	5.87	0.45	5.95
2500.0	32.48	2.23	28.13	4.90	0.44	4.98

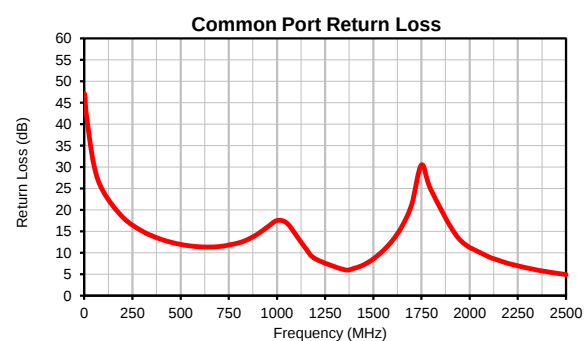
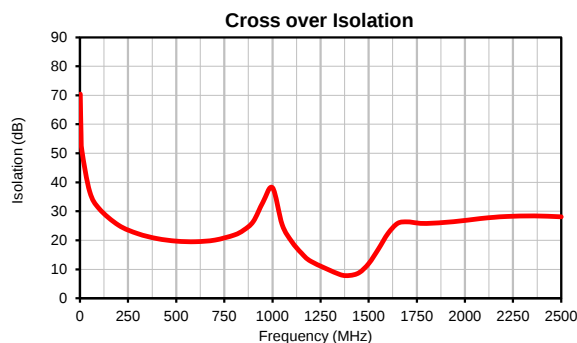
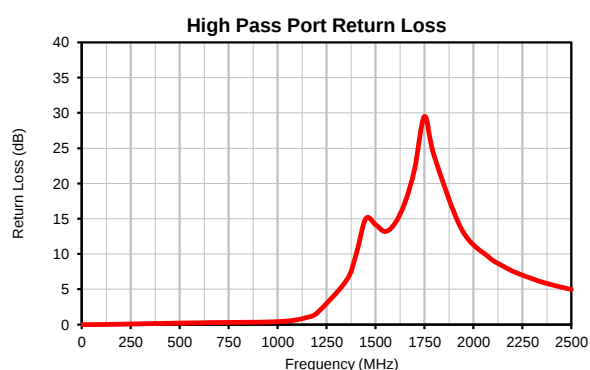
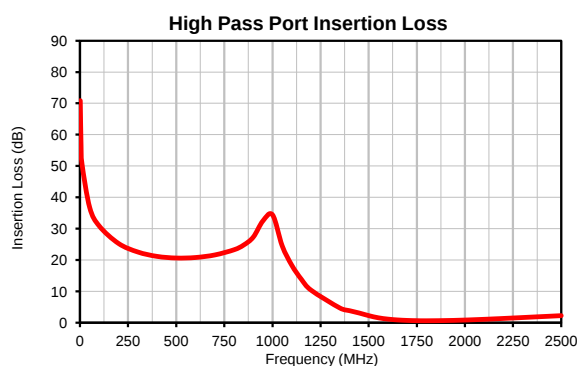
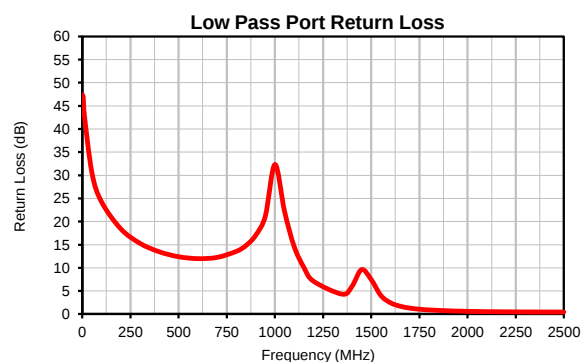
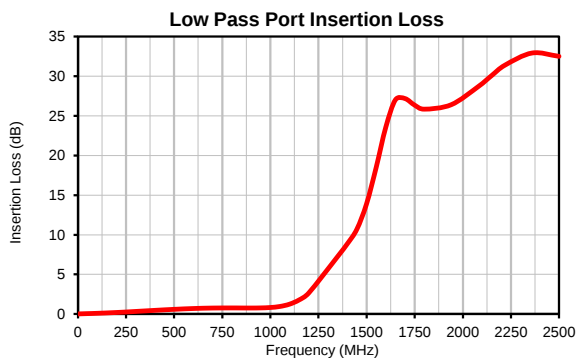


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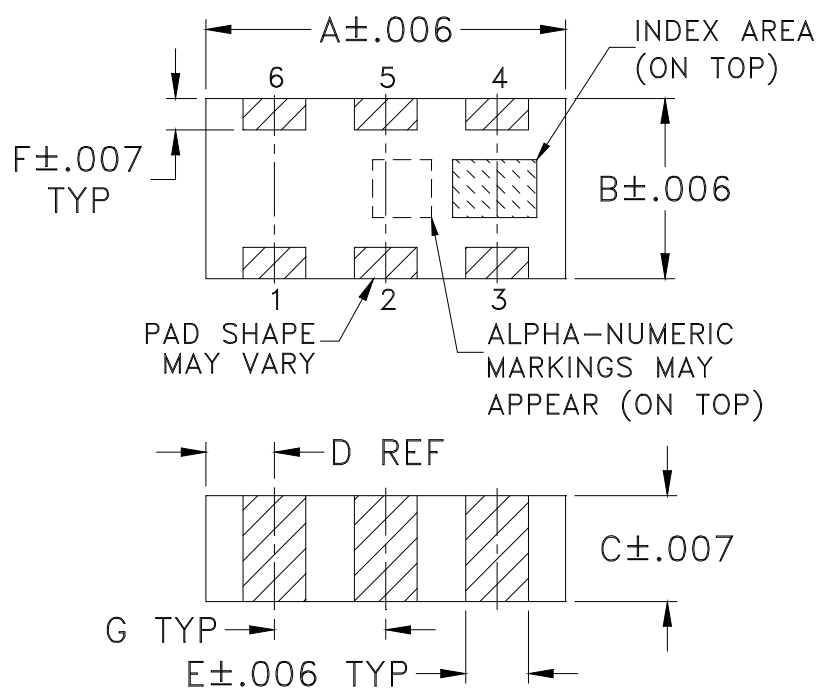
IF/RF MICROWAVE COMPONENTS

REV. OR
LDP-1050-252+
8/27/2014
Page 1 of 1

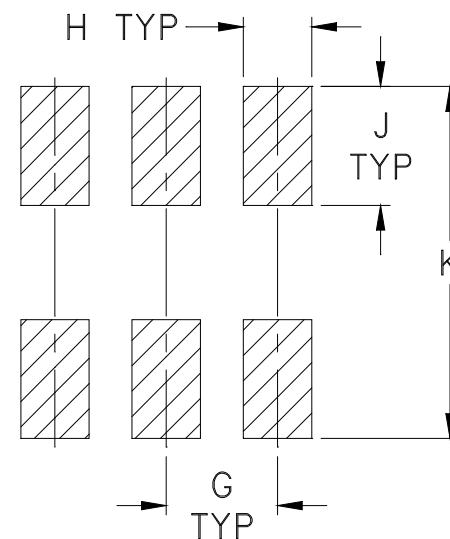
Typical Performance Curves



Outline Dimensions



PCB Land Pattern



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

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. $\pm .01$; 3 PL. $\pm .005$

Notes:

- Open style, ceramic base.
- 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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RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging

TR-F75

DEVICE ORIENTATION IN T&R

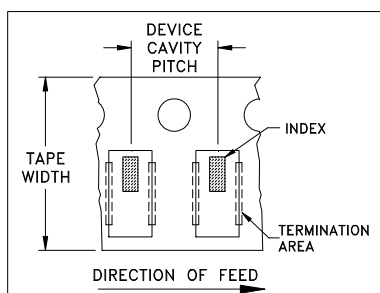


ILLUSTRATION 1

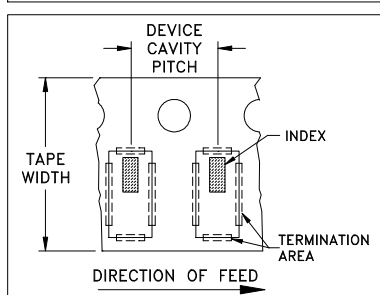


ILLUSTRATION 2

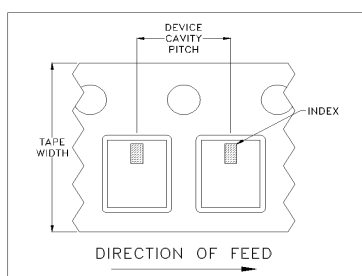


ILLUSTRATION 3

Applicable Case Styles
FV1206-1
FV1206-3

Applicable Case Styles
FV1206-4
FV1206-5
FV1206-6
FV1206-7
FV1206-9
JC0603C-1

Applicable Case Styles
NL1008C-6
FV1206-12
NL1008C-9
NL1008C-10

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.

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

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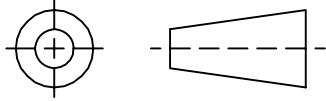
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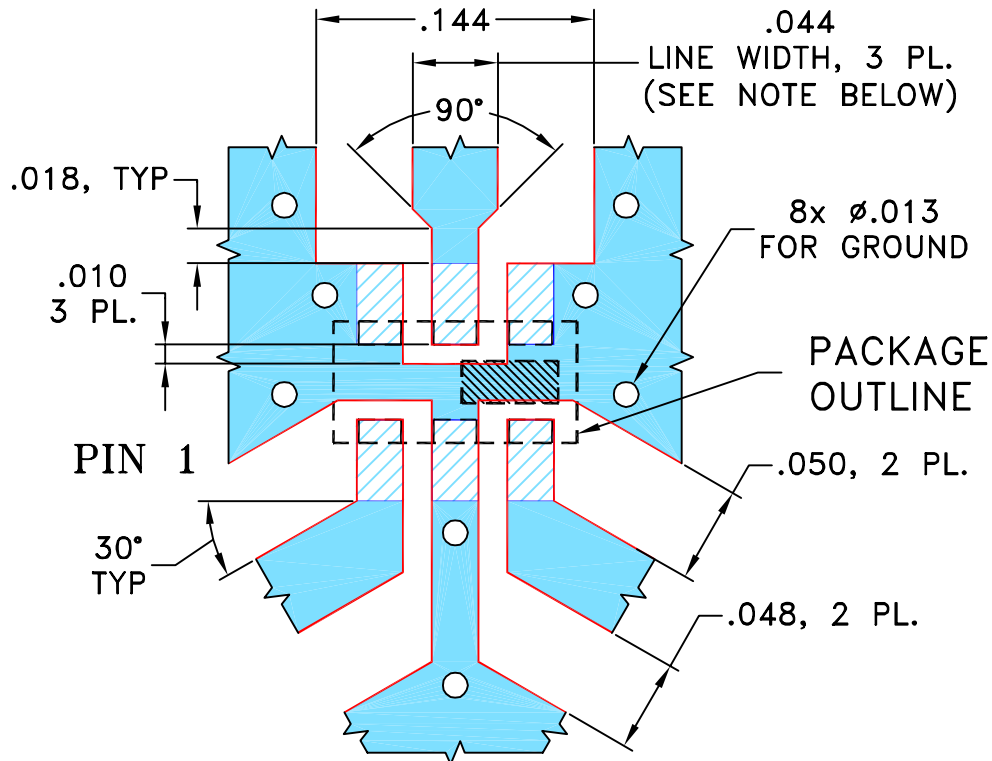
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M143029	NEW RELEASE	08/21/13	AV	CH

SUGGESTED MOUNTING CONFIGURATION
FOR FV1206-1 CASE STYLE, "06DP01" PIN CODE



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



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

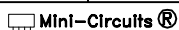


DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

TOLERANCES ON:

2 PL DECIMALS $\pm$ 3 PL DECIMALS $\pm$.005ANGLES $\pm$ 1°FRACTIONS $\pm$ 

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INITIALS

DATE

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08/21/13

APPROVED

CH

08/21/13



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Brooklyn NY 11235

PL, 06DP01, FV1206-1, TB-706+

SIZE
ACODE IDENT
15542

DRAWING NO:

98-PL-398

REV:

OR

FILE: 98PL398

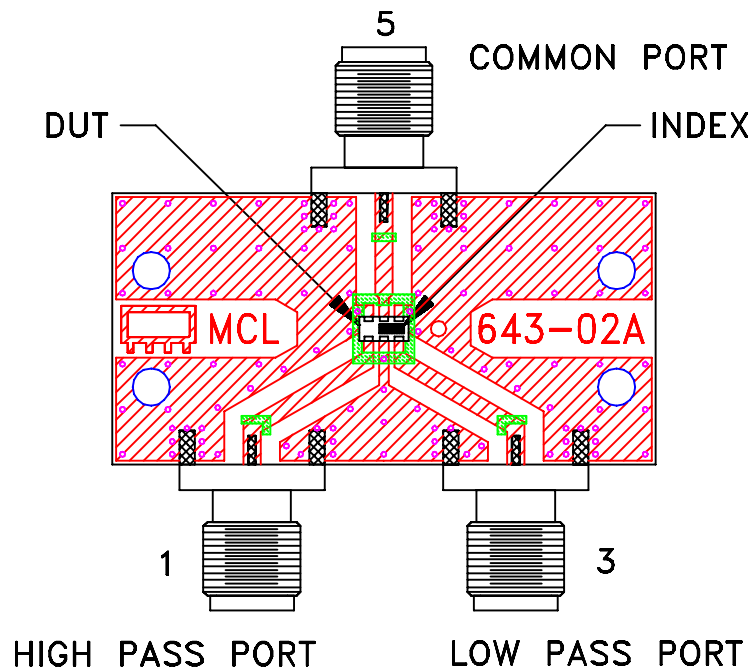
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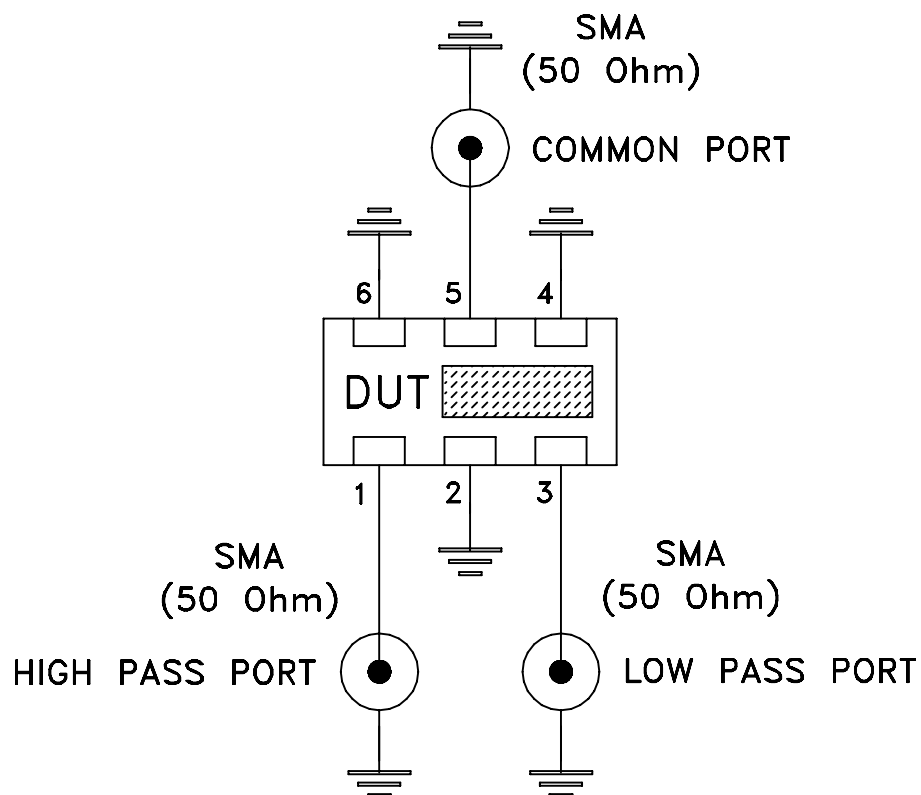
SHEET:

1 OF 1

Evaluation Board and Circuit



TB-706+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 inch.

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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	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I