

75Ω 50 to 1550 MHz (50-870, 960-1550 MHz)

Maximum Ratings

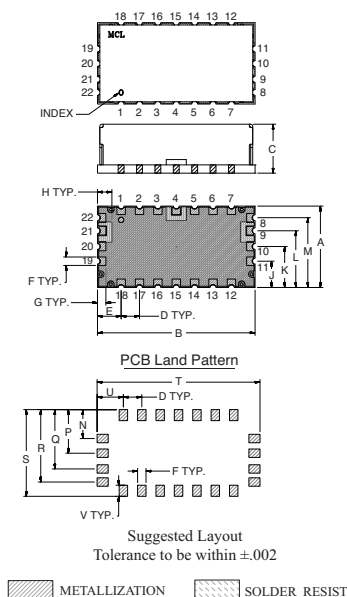
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	250mW at 25°C

Note: Permanent damage may occur if any of these limits are exceeded. These ratings are not intended for continuous normal operation.

Pin Connections

COMMON PORT	4
LOW PASS PORT	9
BAND PASS PORT	21
GROUND	1-3,5-8,10-20,22

Outline Drawing



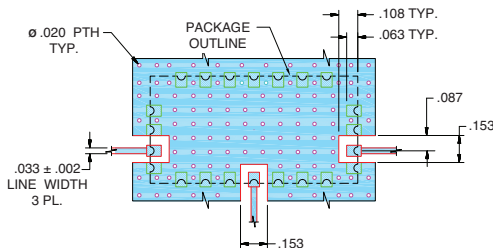
Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
.610	1.181	.375	.138	.177	.063	.063	.108	.197	.307
15.49	30.00	9.52	3.50	4.50	1.60	1.60	2.74	5.00	7.80

L	M	N	P	Q	R	S	T	U	V	wt.
.425	.523	.217	.327	.445	.543	.650	1.221	.197	.083	grams
10.80	13.28	5.51	8.31	11.30	13.79	16.51	31.01	5.01	2.11	9.0

Demo Board MCL P/N: TB-475+

Suggested PCB Layout (PL-286)



NOTES:

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

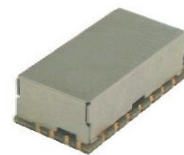
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- Low Insertion Loss 0.7dB typ.
- High Isolation 55dB typ.
- 75 Ω Impedance
- Shielded case
- Aqueous washable

Applications

- CATV
- MoCA
- Set-Top Box
- Wire-Line Broadband Access



CASE STYLE: JK1226

+RoHS Compliant

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

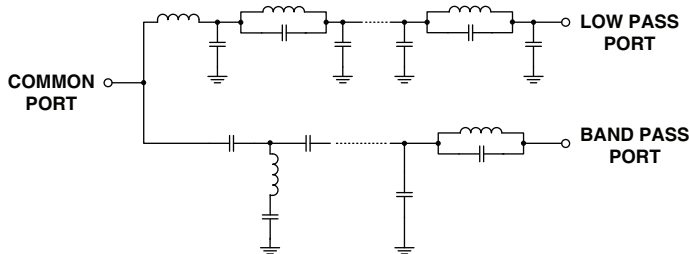
Electrical Specifications (T_{AMB} = 25°C)

Insertion Loss, dB PASSBAND MHz		Isolation, dB STOPBAND MHz		Cross Over Isolation (dB)	Return Loss (dB)			
50-870		960-1550		870-960	Low Pass Port 50-870MHz	Band Pass Port 960-1550MHz	Common Port 50-870MHz 960-1550MHz	
Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.
0.5	2.5	1.0	2.5	35	20	25	20	25

Typical Performance Data (T_{AMB} = 25°C)

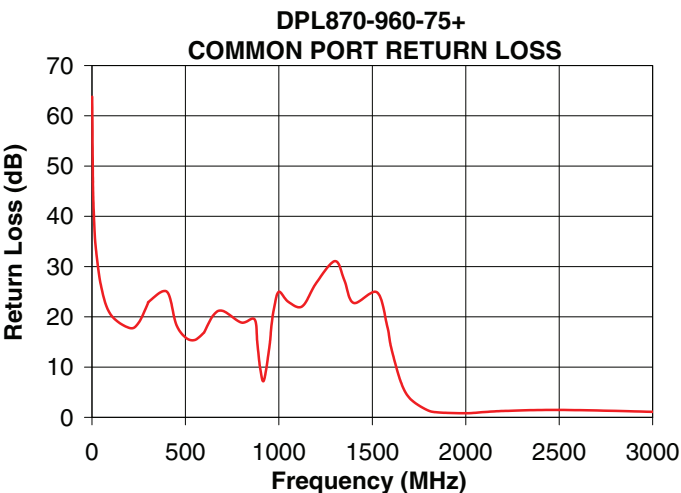
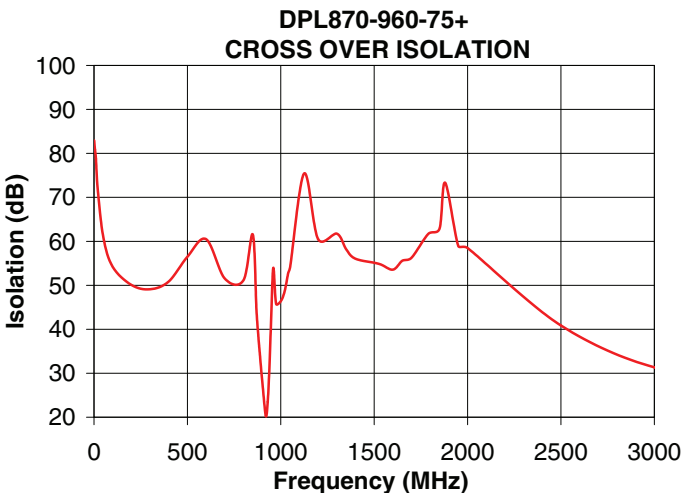
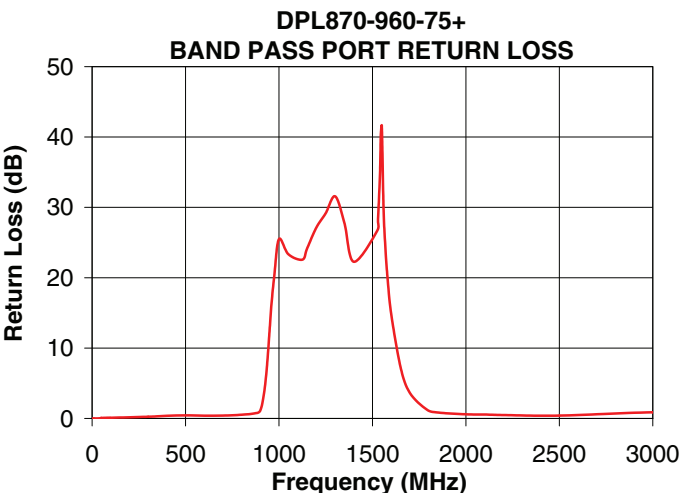
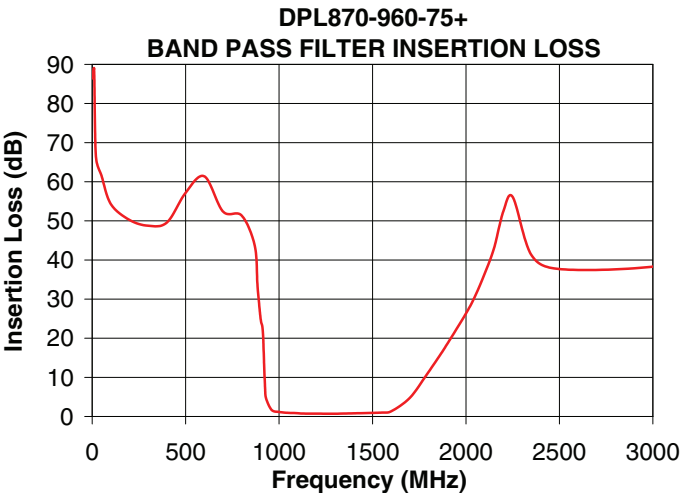
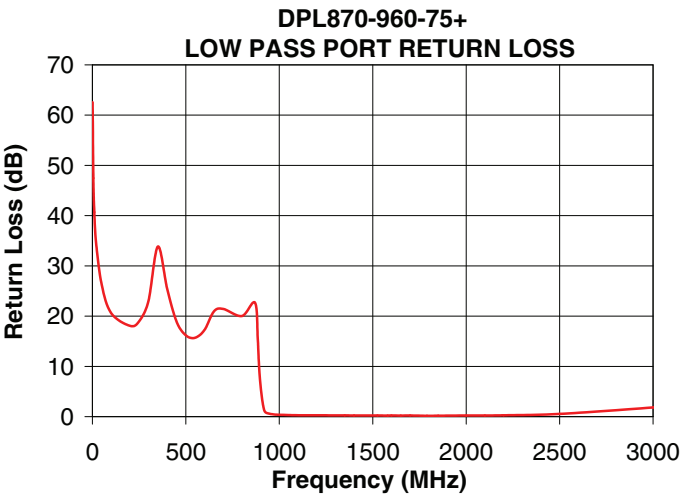
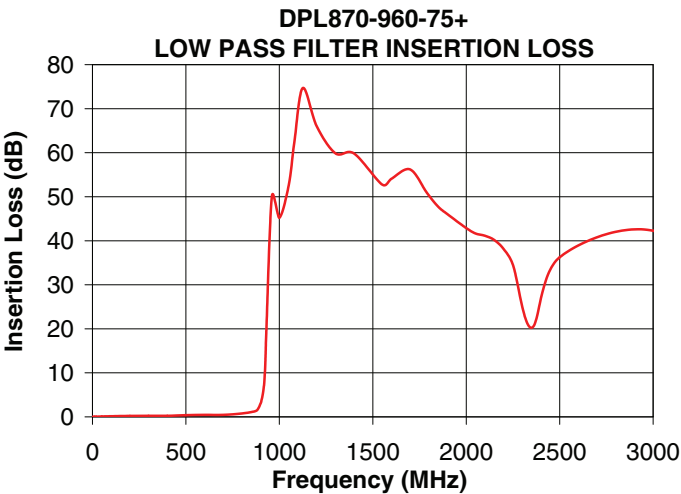
FREQUENCY (MHz)	INSERTION LOSS (dB)		CROSS OVER ISOLATION (dB) (between LPF and BPF)	RETURN LOSS (dB)		
	Low Pass Port	Band Pass Port		Common Port	Low Pass Port	Band Pass Port
50	0.09	61.56	60.96	25.91	25.96	0.02
100	0.14	54.28	54.21	20.37	20.32	0.06
200	0.22	50.23	50.08	17.45	17.58	0.14
300	0.23	48.76	49.10	21.36	21.81	0.25
500	0.39	57.19	56.50	16.98	17.10	0.45
600	0.46	61.37	60.49	17.70	18.19	0.41
700	0.46	52.39	51.55	24.03	24.46	0.38
800	0.76	51.35	51.15	19.59	21.04	0.51
870	1.28	43.61	44.26	25.16	22.97	0.77
900	3.09	25.49	28.55	8.66	7.59	1.20
920	8.11	13.40	20.29	10.29	2.99	2.80
960	50.09	1.69	54.00	16.65	0.55	18.55
1000	45.21	1.17	46.37	20.98	0.39	20.67
1200	66.02	0.73	60.50	33.86	0.30	36.35
1300	59.85	0.71	61.75	44.29	0.26	44.25
1400	59.81	0.81	56.04	22.97	0.28	21.84
1550	52.77	1.01	55.52	45.44	0.22	25.72
1600	54.09	1.32	53.55	15.33	0.27	14.77
2000	42.87	26.35	58.46	0.91	0.26	0.59
3000	42.27	38.29	31.35	1.08	1.77	0.92

Functional Schematic



Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- 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



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Surface Mount Diplexer

DPL870-960-75+

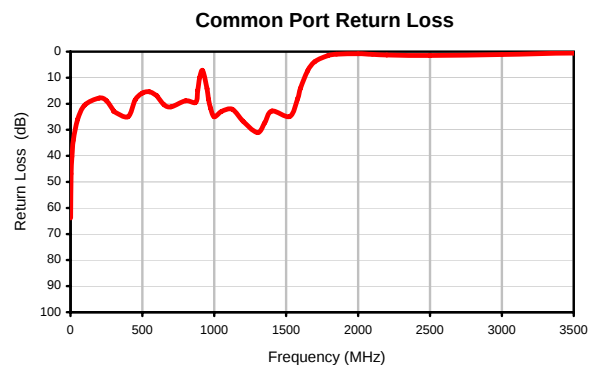
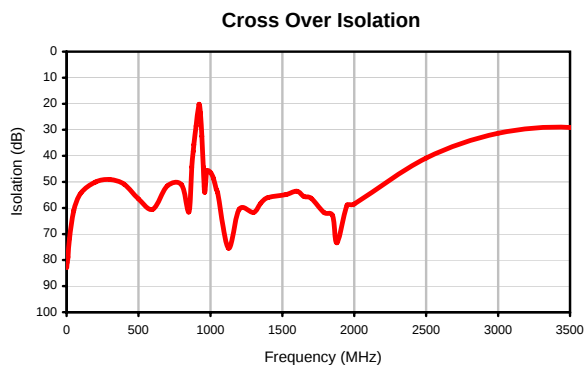
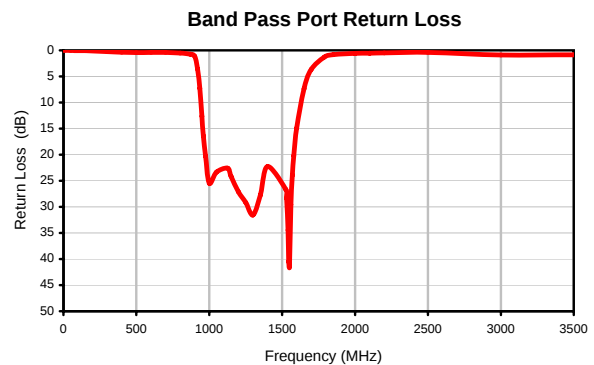
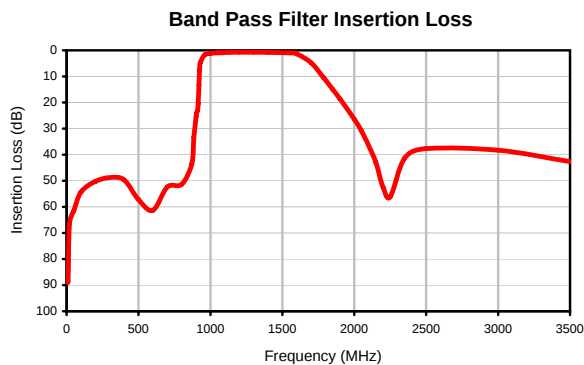
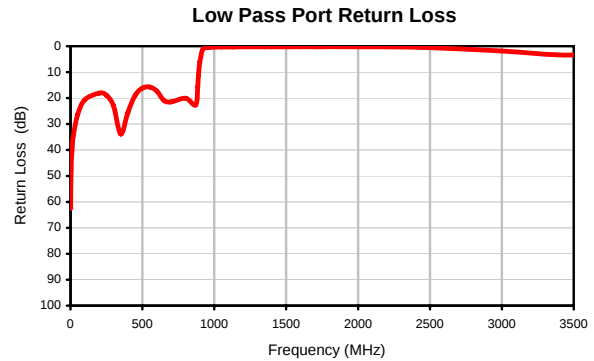
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)		CROSS OVER ISOLATION (dB) Between LPF and BPF	RETURN LOSS (dB)		
	Low Pass Filter	Band Pass Filter		Common Port	Low Pass Port	Band Pass Port
1	0.02	86.39	82.92	63.80	62.57	0.00
10	0.05	88.80	78.80	40.29	40.71	0.00
50	0.09	61.56	60.96	25.91	26.27	0.02
100	0.14	54.28	54.21	20.46	20.63	0.05
300	0.23	48.76	49.10	22.72	22.99	0.24
400	0.25	49.61	50.86	25.01	25.45	0.38
500	0.39	57.19	56.50	15.91	16.18	0.43
600	0.46	61.37	60.49	16.89	17.29	0.39
700	0.46	52.39	51.55	21.19	21.44	0.41
800	0.76	51.35	51.15	18.86	20.03	0.52
870	1.28	43.61	44.26	19.49	22.67	0.73
900	3.09	25.49	28.55	9.75	6.07	1.15
920	8.11	13.40	20.29	7.33	1.22	3.59
960	50.09	1.69	54.00	18.22	0.50	16.37
1000	45.21	1.17	46.37	24.98	0.37	25.49
1050	52.61	0.92	54.19	23.00	0.32	23.33
1125	74.69	0.77	75.42	22.09	0.28	22.57
1200	66.02	0.73	60.50	26.73	0.27	27.13
1300	59.85	0.71	61.75	31.08	0.25	31.57
1400	59.81	0.81	56.04	22.77	0.24	22.27
1600	54.09	1.32	53.55	14.03	0.24	14.92
1700	56.21	4.76	56.28	3.81	0.24	3.65
1790	50.86	10.70	61.71	1.51	0.17	1.28
1850	47.73	14.88	62.87	1.00	0.19	0.84
2000	42.87	26.35	58.46	0.82	0.23	0.58
2500	36.26	37.69	40.87	1.48	0.54	0.41
3000	42.27	38.29	31.35	1.10	1.83	0.88
3500	27.20	42.64	29.12	0.53	3.42	0.86

Surface Mount Diplexer

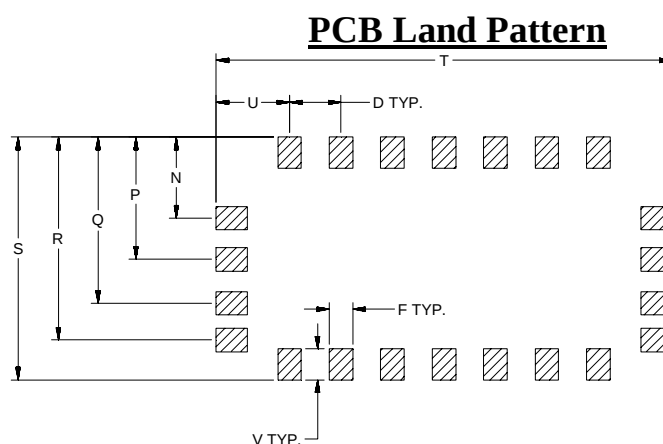
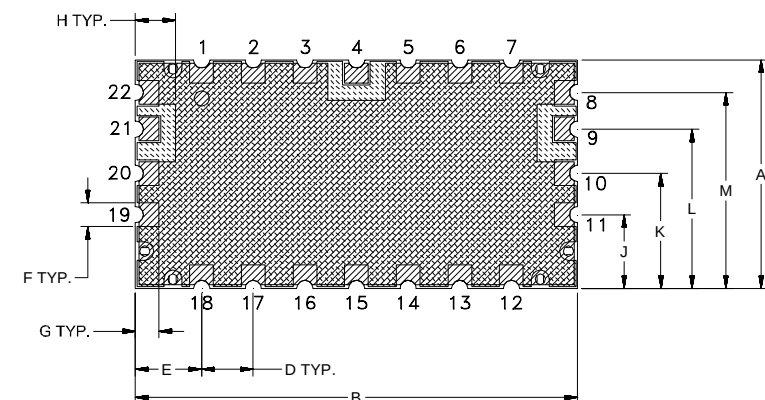
Typical Performance Curves

DPL870-960-75+

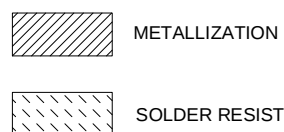


JK

JK1226



Suggested Layout



CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N
JK1226	.610 (15.49)	1.181 (30.00)	.375 (9.52)	.138 (3.50)	.177 (4.50)	.063 (1.60)	.063 (1.60)	.108 (2.74)	.197 (5.00)	.307 (7.80)	.425 (10.80)	.523 (13.28)	.217 (5.51)

CASE #	P	Q	R	S	T	U	V	WT. GRAMS
JK1226	.327 (8.31)	.445 (11.30)	.543 (13.79)	.650 (16.51)	1.221 (31.01)	.197 (5.01)	.083 (2.11)	9

Dimensions are in inches (mm). Tolerances: 2 Pl. + .03; 3 Pl. + .015

1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Termination finish:

For RoHS Case Styles: 3-5 μ inch (.08-.13 microns) Gold over 120-240 μ inch (3.05-6.10 microns) Nickel plate.
For RoHS-5 Case Styles: Tin-Lead plate.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site

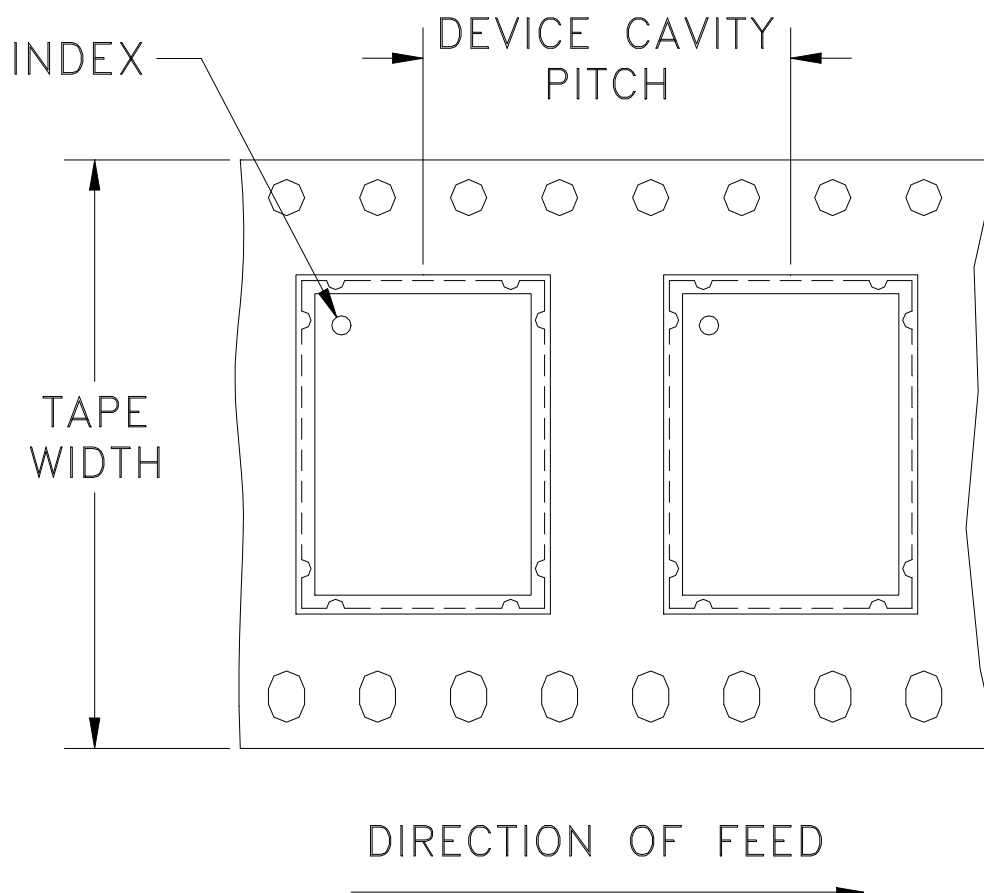


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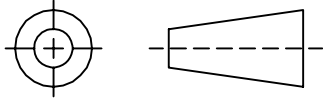
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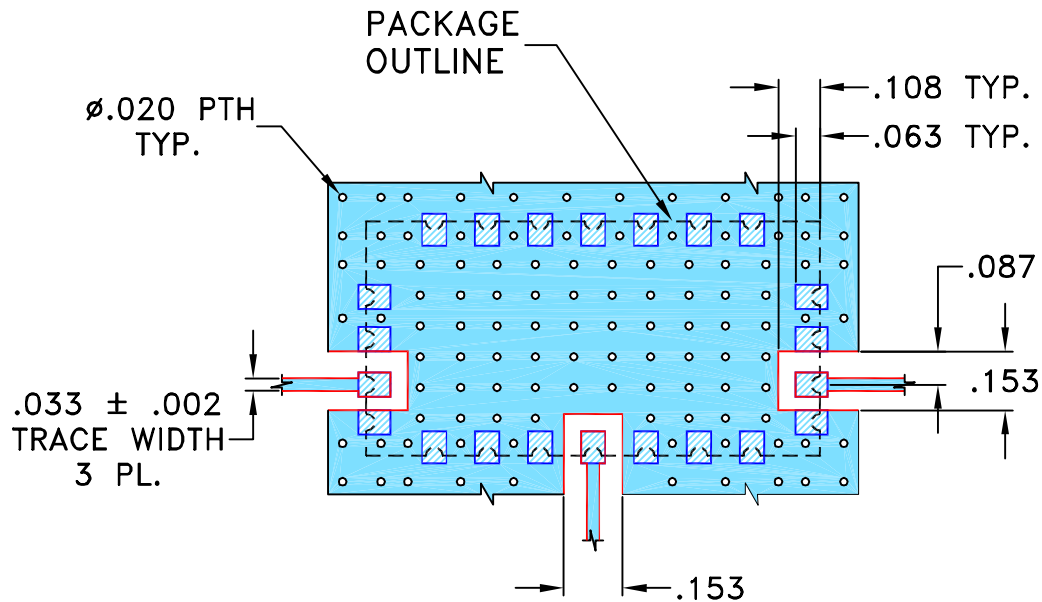
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M116389	NEW RELEASE (FROM RAVON)	03/08	DK	HH
OR	R71907	NEW RELEASE (FROM RAVON)	03/08	DK	HH

SUGGESTED MOUNTING CONFIGURATION
FOR JK1226 CASE STYLE, "sg" PIN CONNECTION, 75 Ω



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.



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



DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES ON:

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

DRAWN

DK (RAVON)

04 MAR 08

CHECKED

RZ (RAVON)

04 MAR 08

APPROVED

HH (RAVON)

04 MAR 08



Mini-Circuits®

13 Neptune Avenue
Brooklyn NY 11235PL,sg,JK1226,DPLX,TB-475+,75 Ω

SIZE

A

CODE IDENT

15542

DRAWING NO:

98-PL-286

REV:

OR

FILE:

98PL286

SCALE:

2:1

SHEET:

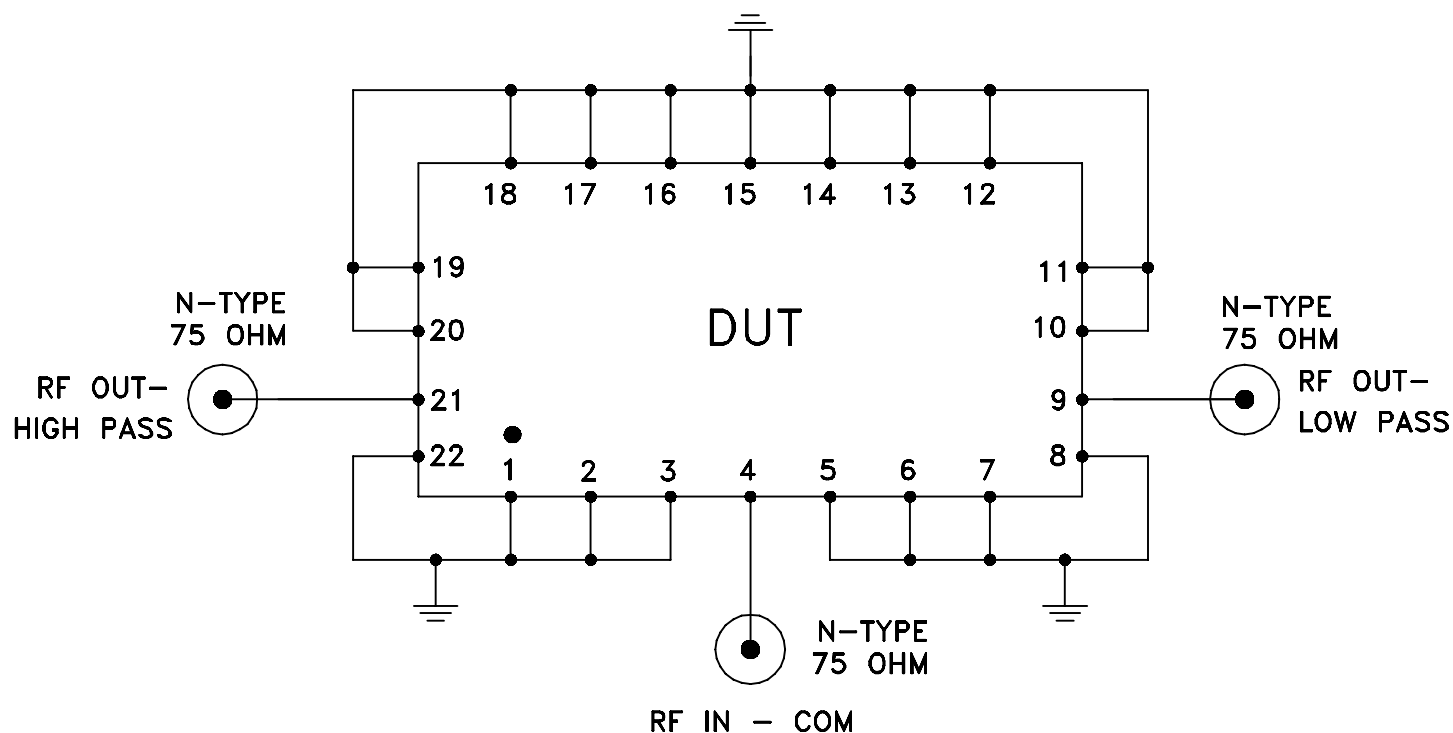
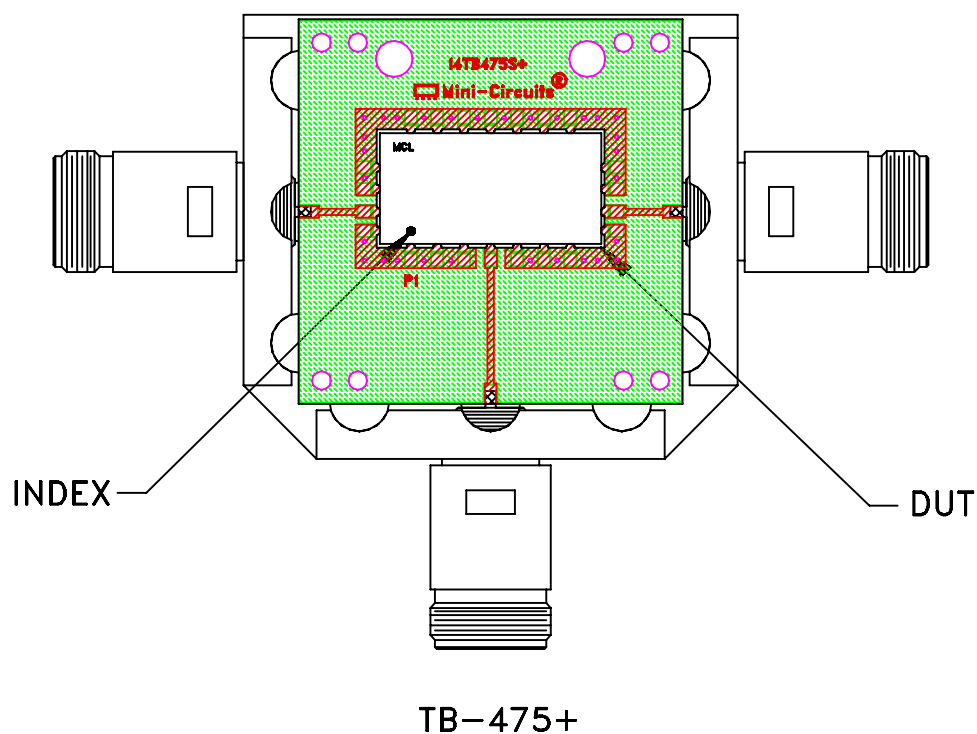
1 OF 1

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

Evaluation Board and Circuit



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: ROGERS R04350 or equivalent,
Dielectric Constant=3.48, Thickness=.030 inch.

 **Mini-Circuits®**



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 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
HAST	130°C, 85% RH, 96 hours	JESD22-A110
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 Eutectic Process: 225°C peak Pb-Free Process, 245°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, 20-2000 Hz, 4 times in each of three axes (total 12)	MIL-STD-883, Method 2007.3, Condition A
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