

Surface Mount

Diplexer

DPLB-4254A0+

75Ω DC to 1220 MHz
(DC-42, 54-1220 MHz)



CASE STYLE: NU1620

The Big Deal

- Low insertion loss, 0.8dB Typ.
- High rejection, 45dB Typ.
- Very good return loss, 18dB Typ.
- 75Ω Impedance
- Used in DOCSIS 3.1 standard

Product Overview

DPLB-4254A0+ is a Low cost diplexer with the lowpass port at DC-42 MHz and highpass port at 54-1220 MHz. Good return loss combined with high out of channel rejection makes it a ideal component in cable TV and multiband radio systems.

Key Features

Feature	Advantages
Low passband insertion loss	Passband insertion loss 0.8dB ensures low signal loss through both the channels.
Good Stopband rejection	Co-channel rejection of 45dB ensures unwanted spurious are eliminated.
Good return loss at DC-42 and 54-1220 MHz	This makes signal transmission with very less reflection and well-matched with the adjacent component used in the system.

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



Surface Mount Diplexer

DPLB-4254A0+

75Ω DC to 1220 MHz (DC-42, 54-1220 MHz)



CASE STYLE: NU1620

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

Maximum Ratings

Operating Temperature	-40° to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	27dBm Max.

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

Pin Connections

HIGH PASS PORT	7
LOW PASS PORT	9
COMMON PORT	18
GROUND	1-6,8,10-17,19,20

Features

- Low insertion loss
- 75Ω Impedance
- Good return loss
- High rejection

Applications

- Cable TV systems (DOCSIS 3.1 standard)
- Multiband radio systems

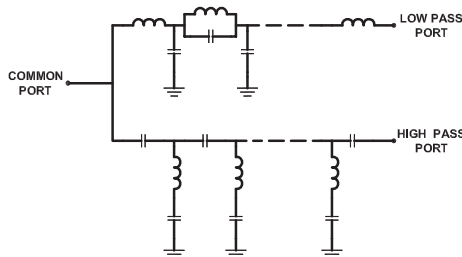
Electrical Specifications at 25°C

Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	Low Pass	DC-42	-	0.8	1.5	dB
		High Pass	54-1220	-	0.8	1.5	
	Return Loss	Low Pass	DC-42	17	18	-	dB
		High Pass	54-1220	16	18	-	
Common		DC-42	17	18	-		
Stop Band Isolation	Low Pass	54-1220	43	50	-	dB	
	High Pass	DC-42	43	50	-		
Group Delay Variation	Low Pass	38.5-42	-	18	-	ns	
	High Pass	54-57.5	-	12	-		

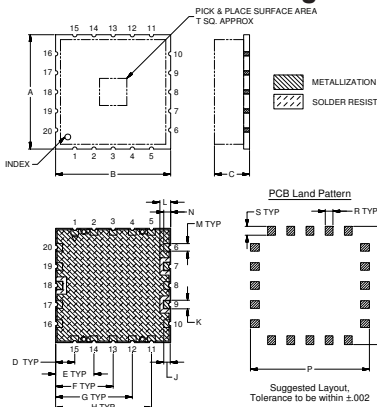
Typical Performance Data at 25°C

FREQUENCY (MHz)	INSERTION LOSS (dB)			RETURN LOSS (dB)	
	Low Pass Port	High Pass Port	Common Port	Low Pass Port	High Pass Port
1.0	0.07	65.41	40.14	40.22	0.00
10.0	0.18	48.28	24.32	25.10	0.04
40.0	0.80	48.88	22.23	21.66	0.69
42.0	0.96	55.87	23.58	22.92	0.83
44.5	1.40	26.42	21.59	22.82	1.13
45.5	1.83	19.44	18.28	21.92	1.43
46.0	2.24	15.87	15.96	19.32	1.73
47.0	4.36	8.29	11.80	10.72	3.41
47.5	6.93	5.14	11.24	7.05	5.54
48.0	10.77	3.15	12.30	4.68	8.74
49.5	22.50	1.33	20.45	2.16	18.17
50.0	25.50	1.15	22.78	1.85	19.94
54.0	52.35	0.68	22.92	0.93	22.84
55.0	63.74	0.63	23.09	0.85	23.23
60.0	64.87	0.49	24.16	0.63	24.48
100.0	72.04	0.32	25.50	0.33	26.46
250.0	65.83	0.31	29.68	0.15	31.03
300.0	63.07	0.33	26.25	0.13	26.96
500.0	57.17	0.40	20.28	0.08	20.94
700.0	54.08	0.47	19.00	0.12	19.86
1000.0	51.70	0.54	23.91	0.33	21.44
1220.0	49.72	0.73	23.07	0.56	17.79

Functional Schematic



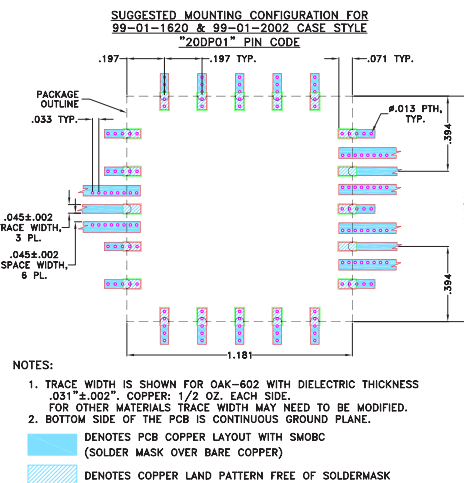
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	Wt.
		Max	Min							grams
1.181	1.181	.280	.205	.197	.394	.591	.787	.984	.066	.089
30.00	30.00	7.11	5.21	5.00	10.00	15.00	20.00	25.00	1.68	2.26
L	M	N	P	Q	R	S	T			
.111	.079	.071	1.221	1.221	.079	.091	.280			3.6
2.82	2.01	1.80	31.01	31.01	2.01	2.31	7.11			

Demo Board MCL P/N: TB-786+ Suggested PCB Layout (PL-435)



Notes

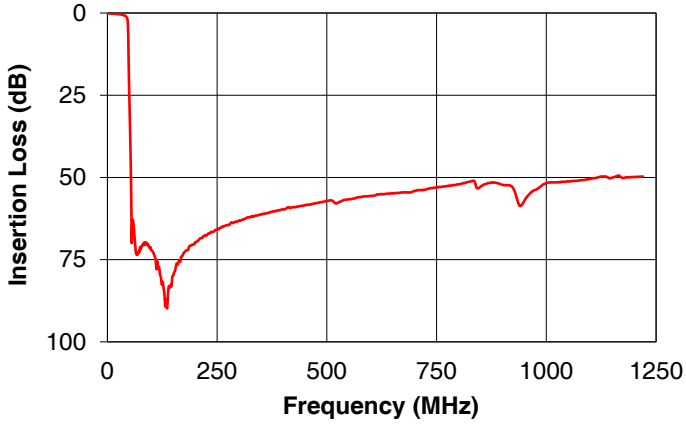
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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



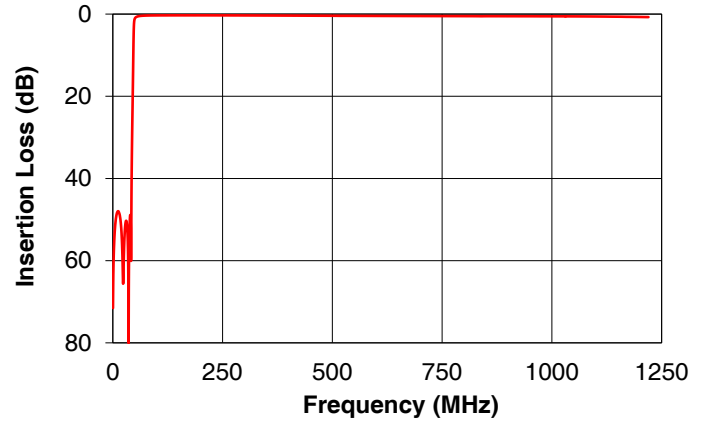
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. OR
M156015
EDU2015/1
DPLB-4254A0+
URJ
160514
Page 2 of 3

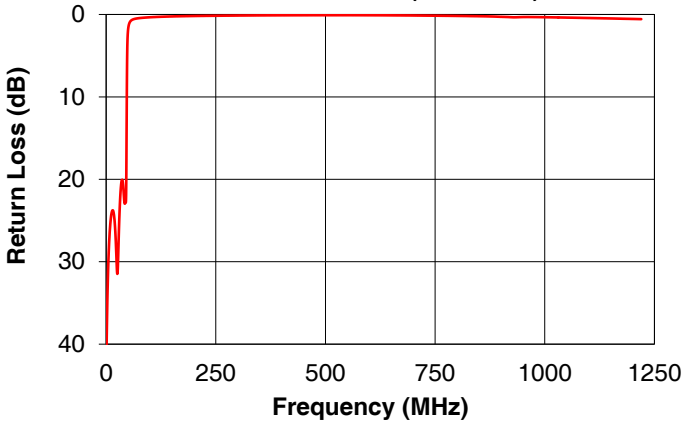
DPLB-4254A0+ LOW PASS PORT
INSERTION LOSS (P_{in}=0dBm)



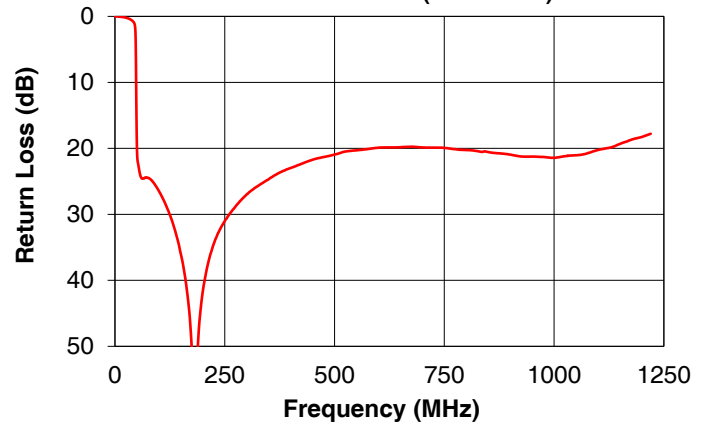
DPLB-4254A0+ HIGH PASS PORT
INSERTION LOSS (P_{in}=0dBm)



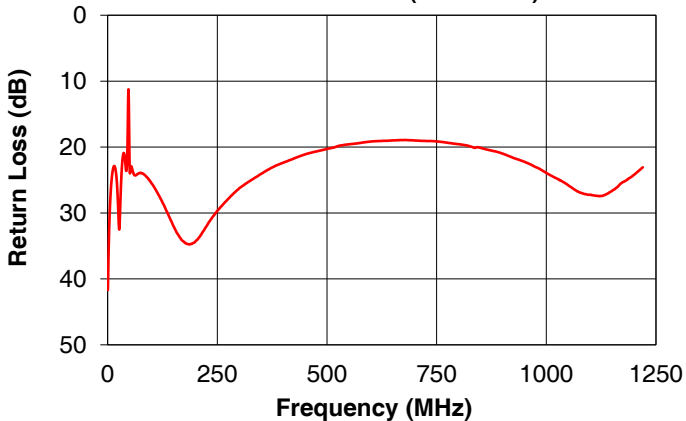
DPLB-4254A0+ LOW PASS PORT
RETURN LOSS (P_{in}=0dBm)



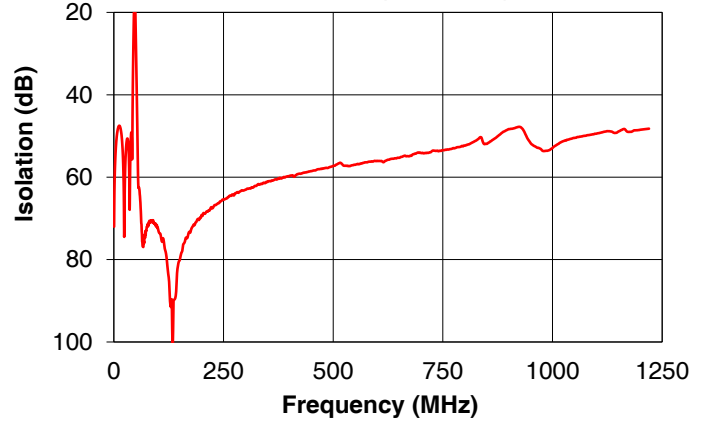
DPLB-4254A0+ HIGH PASS PORT
RETURN LOSS (P_{in}=0dBm)



DPLB-4254A0+ COMMON PORT
RETURN LOSS (P_{in}=0dBm)



DPLB-4254A0+ CROSS OVER
ISOLATION (P_{in}=0dBm)



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

