Diplexer

DPLB-8510A0+

75O **DC to 1220 MHz** (DC-85, 102-1220 MHz)



The Big Deal

- Low insertion loss, 1.1dB Typ.
- High rejection
- Very good return loss, 20dB Typ
- 75Ω Impedance
- Used in DOCSIS 3.1 standard

CASE STYLE: PA2002

Product Overview

DPLB-8510A0+ is a Low cost diplexer with the lowpass port at DC-85 MHz and highpass port at 102-1220 MHz. Good return loss combined with high out of channel rejection makes it a ideal part in cable TV and multiband radio systems.

Key Features

Feature	Advantages				
Low passband insertion loss	Passband insertion loss 1.1dB ensures low signal loss through both the channels.				
Excellent Stopband rejection	Co-channel rejection of 45dB ensures unwanted spurious are eliminated.				
Excellent return loss at DC-85 and 102-1220 MHz	This makes signal transmission with very less reflection and well-matched with the adjacent component used in the system.				

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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/WCLStore/terms.jsp

DPLB-8510A0+

DC to 1220 MHz (DC-85, 102-1220 MHz) 75Ω

Maximum Ratings

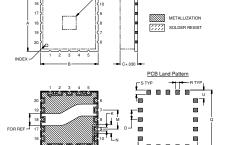
Operating Temperature	-40° to 85°C		
Storage Temperature	-55°C to 100°C		
RF Power Input	30dBm Max.		

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

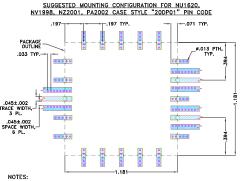
Outline Drawing



Outline Dimensions (inch)

K	J	Н	G	F	E	D	2	(В	Α
-	-	-	-	-	-	-	Min	Max	-	-
.079	.071	.984	.787	.591	.394	.197	.205	.280	1.181	1.181
2.00	1.80	25.00	20.00	15.00	10.00	5.00	5.21	7.11	30.00	30.00
Wt	U	Т	S	R	Q	Р	N		М	L
grams	-	-	-	-	-	-	-		-	
3.8	.178	.280	.091	.079	1.221	1.221	.179		.394	.111
3.0	4.52	7.11	2.31	2.01	31.01	31.01	4.54		10.00	2.82

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



- 1. TRACE WIDTH IS SHOWN FOR OAK-602 WITH DIELECTRIC THICKNESS .031*±.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

Features

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

CASE STYLE: PA2002

+RoHS Compliant

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

Applications

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

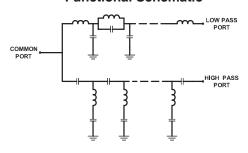
Electrical Specifications at 25°C

Pai	rameter	Port	Frequency (MHz)	Min.	Тур.	Max.	Unit
	Insertion Loss	Low Pass High Pass	DC-85 102-1220	-	1.1 1.2	1.6 1.7	dB
D D 1	Return Loss	Low Pass	DC-85	17	20	-	
Pass Band		High Pass	102-1220	16	20	-	dB
		Common	DC-85	17	20	-	
			102-1220	16	20	-	
Stop Band Isolation		Low Pass	102-1220	38	45	-	dB
		High Pass	DC-85	44	50	-	UD
Group Delay Variation		Low Pass	81.5-85	-	15	-	ns
		High Pass	102-105.5	-	14	-	ris

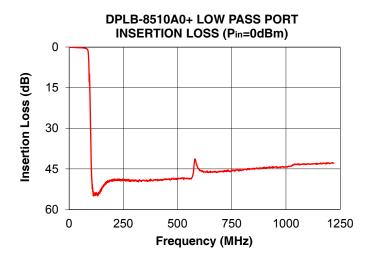
Typical Performance Data at 25°C

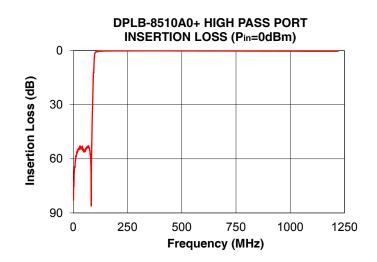
FREQUENCY (MHz)		ON LOSS IB)	RETURN LOSS (dB)			
	Low Pass Port	High Pass Port	Common Port	Low Pass Port	High Pass Port	
1.0	0.07	82.97	48.79	49.69	0.02	
10.0	0.11	60.98	31.67	34.33	0.02	
50.0	0.26	55.90	21.26	20.86	0.05	
65.0	0.32	53.45	29.60	30.42	0.12	
80.0	0.61	59.32	21.05	20.94	0.30	
85.0	0.86	54.33	23.99	28.19	0.41	
89.0	2.54	30.44	7.19	7.49	0.59	
90.0	3.82	25.54	4.99	5.17	0.68	
97.0	19.93	4.42	5.08	0.92	4.57	
99.0	28.84	1.91	11.01	0.67	10.29	
100.0	33.55	1.39	15.38	0.61	14.28	
102.0	42.03	0.96	26.33	0.54	22.68	
150.0	52.44	0.26	23.08	0.21	22.86	
250.0	49.19	0.21	21.13	0.06	20.48	
500.0	48.87	0.21	23.14	0.02	26.03	
650.0	46.27	0.24	20.85	0.06	23.92	
700.0	45.91	0.26	20.28	0.05	22.99	
850.0	44.79	0.31	18.99	0.03	20.77	
900.0	44.56	0.33	18.76	0.08	20.22	
1000.0	44.15	0.37	18.39	0.16	19.13	
1150.0	43.11	0.40	18.88	0.31	17.72	
1220.0	42.91	0.41	19.35	0.39	17.16	

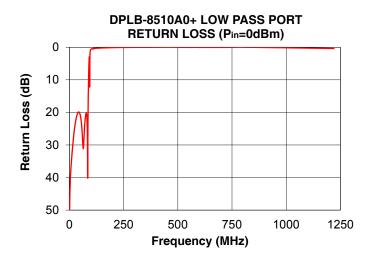
Functional Schematic

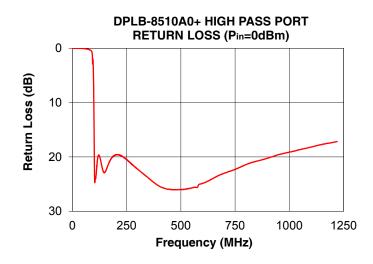


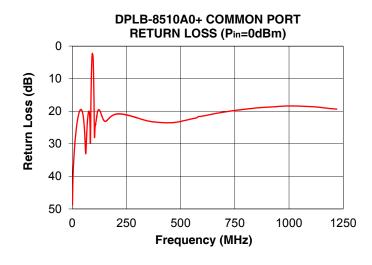
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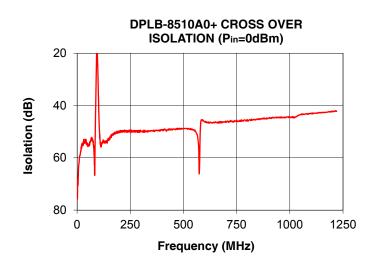












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