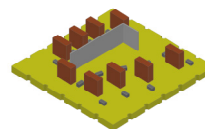


Surface Mount

Diplexer

DPLB-8510A03+

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



CASE STYLE: PA2002

The Big Deal

- Low insertion loss, 0.9dB typ.
- High rejection
- Very good return loss, 20dB typ
- 75Ω Impedance
- Used in DOCSIS 3.1 standard

Product Overview

DPLB-8510A03+ 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 0.9dB ensures low signal loss through both the channels.
Excellent Stopband rejection	Co-channel rejection of 50dB 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.

Notes

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Surface Mount Diplexer

DPLB-8510A03+

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

Maximum Ratings

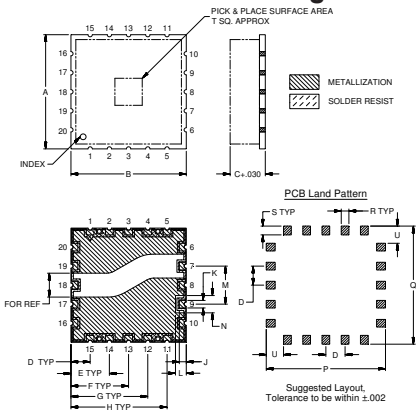
Operating Temperature	-40° to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	30dBm Max.

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

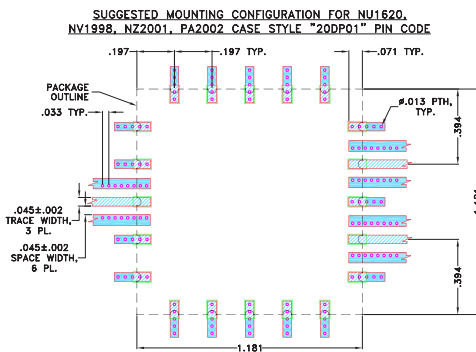
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	Wt.
-	-	Max	Min	-	-	-	-	-	-	-
1.181	1.181	.280	.205	.197	.394	.591	.787	.984	.071	.079
30.00	30.00	7.11	5.21	5.00	10.00	15.00	20.00	25.00	1.80	2.00
L	M	N	P	Q	R	S	T	U		
.111	.394	.179	1.221	1.221	.079	.091	.280	.178		grams
2.82	10.00	4.54	31.01	31.01	2.01	2.31	7.11	4.52		3.8

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

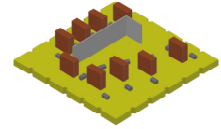


Features

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

Applications

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



CASE STYLE: PA2002

+RoHS Compliant

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

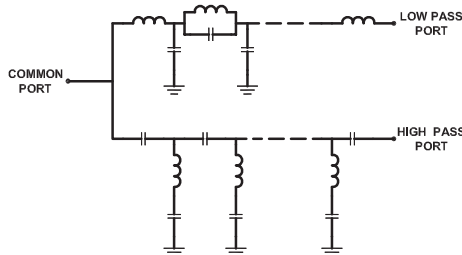
Electrical Specifications at 25°C

Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	Low Pass	DC-85	-	0.9	1.5	dB
		High Pass	102-1220	-	0.8	1.5	
	Return Loss	Low Pass	DC-85	18	20	-	dB
		High Pass	102-1220	16	20	-	
Common		DC-85	18	20	-		
Stop Band Isolation	Low Pass	102-1220	43	50	-	dB	
	High Pass	DC-85	43	55	-		

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
1.00	0.09	86.33	49.71	49.21	0.07
10.00	0.11	61.62	33.95	35.48	0.05
50.00	0.22	61.62	32.29	30.98	0.06
85.00	1.00	57.53	24.64	23.10	0.35
89.00	2.19	32.14	9.78	9.99	0.52
89.25	2.34	30.78	9.28	9.53	0.54
90.25	3.04	25.56	7.80	8.44	0.64
91.00	3.72	21.57	7.43	9.37	0.79
91.25	4.04	20.03	7.45	10.63	0.87
92.00	6.41	14.39	6.64	20.89	1.30
93.00	18.51	9.34	3.62	3.46	1.93
93.25	21.62	8.68	3.49	2.65	2.06
95.00	24.43	4.83	5.33	1.09	3.98
96.00	28.31	3.23	7.81	0.88	6.12
96.25	29.53	2.92	8.59	0.84	6.78
96.50	30.82	2.64	9.43	0.81	7.49
102.00	47.09	0.88	22.55	0.57	22.00
500.00	60.67	0.13	25.49	0.27	25.84
950.00	56.82	0.23	20.91	0.46	21.08
1000.00	56.04	0.19	21.70	0.48	21.93
1150.00	52.56	0.19	25.44	0.56	24.79
1220.00	52.17	0.20	28.51	0.60	26.66

Functional Schematic



Notes

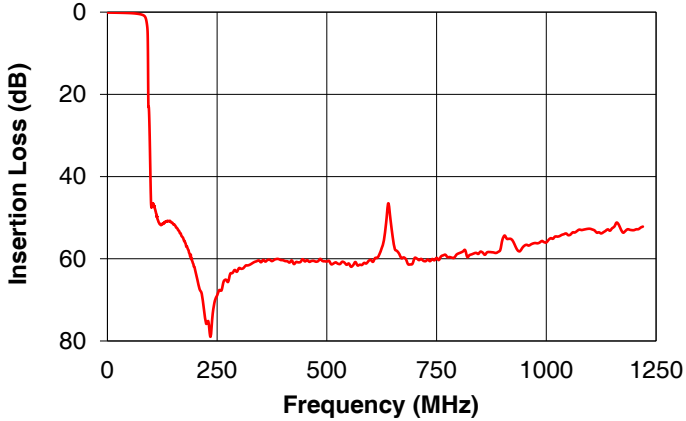
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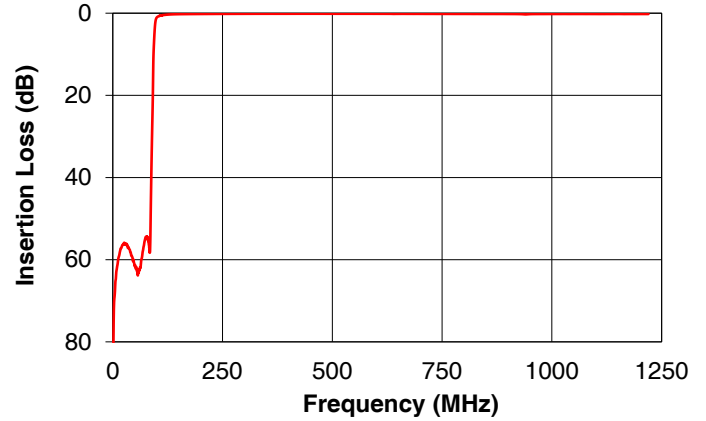
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Page 2 of 3

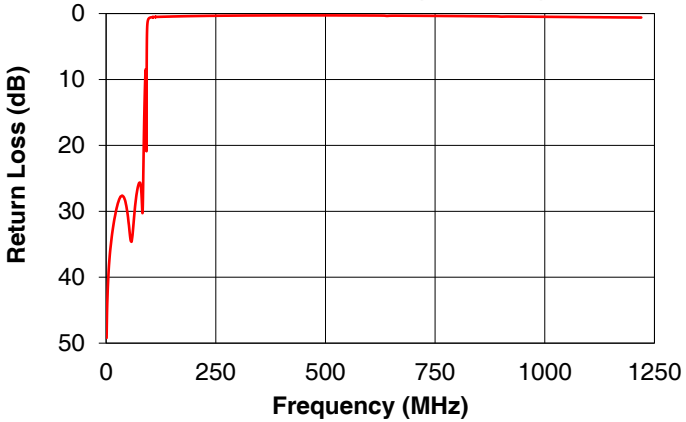
DPLB-8510A03+ LOW PASS PORT
INSERTION LOSS (P_{in}=0dBm)



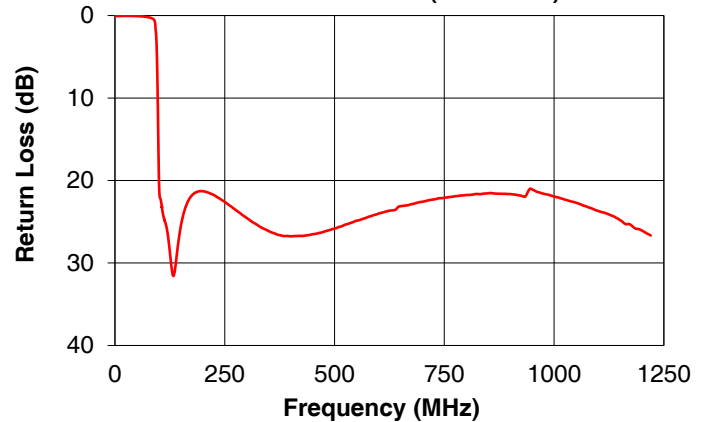
DPLB-8510A03+ HIGH PASS PORT
INSERTION LOSS (P_{in}=0dBm)



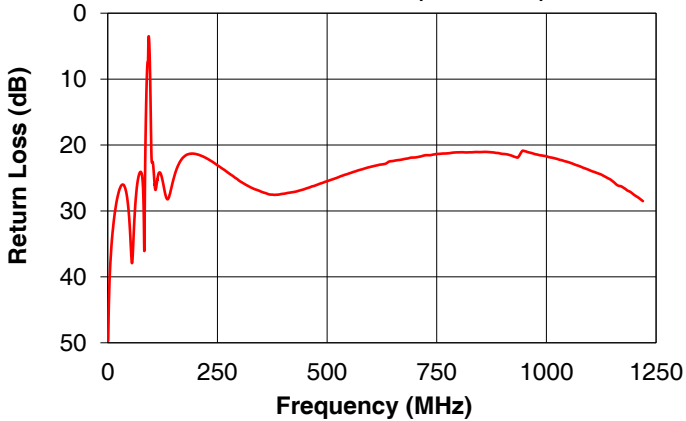
DPLB-8510A03+ LOW PASS PORT
RETURN LOSS (P_{in}=0dBm)



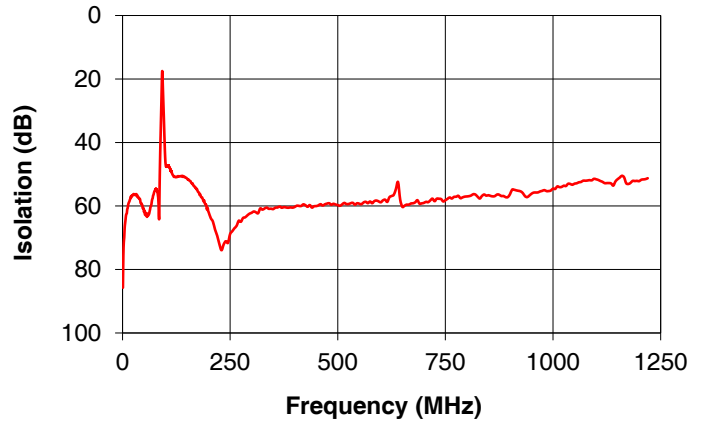
DPLB-8510A03+ HIGH PASS PORT
RETURN LOSS (P_{in}=0dBm)



DPLB-8510A03+ COMMON PORT
RETURN LOSS (P_{in}=0dBm)



DPLB-8510A03+ CROSS OVER
ISOLATION (P_{in}=0dBm)



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