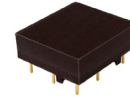


Plug-in

Diplexer

DPLC-8510A0+

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



CASE STYLE: QB2223

The Big Deal

- Plug-in design
- Field replaceable
- Low insertion loss
- Excellent return loss, 24 dB typ.
- Low group delay variation in passband
- Mirrored version available for ease of routing
- DOCSIS 3.1 standard

Product Overview

DPLC-8510A0+ is a high performance field replaceable plug-in diplexer with the lowpass port at DC-85 MHz and highpass port at 102-1220 MHz. Excellent 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	Ensures low signal loss through both the channels.
Excellent Stopband rejection	Co-channel rejection of 50dB typical 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

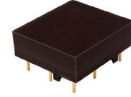
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Plug-in Diplexer

DPLC-8510A0+

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



CASE STYLE: QB2223

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	1
COMMON PORT	4
GROUND	2,3,5,6,8,9

Features

- Low insertion loss
- 75Ω Impedance
- Excellent return loss 24 dB typ.
- Low group delay variation
- High rejection

Applications

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

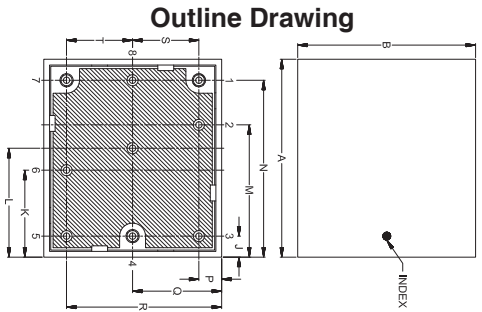
+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at 25°C

Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	Low Pass	DC-85	-	1.1	1.4	dB
		High Pass	102-1220	-	1.4	1.7	
	Return Loss	Low Pass	DC-85	20	24	-	dB
		High Pass	102-1220	20	24	-	
Common		DC-85	20	24	-		
Stop Band Isolation	Low Pass	102-1220	42	50	-	dB	
		DC-85	45	50	-		
	Cross over	85-102	-	15	-		

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	0.04	83.91	51.62	52.59	0.02
20.0	0.10	59.04	35.41	47.28	0.01
40.0	0.16	75.08	32.59	36.79	0.03
82.0	0.77	47.51	43.46	39.40	0.33
83.0	0.83	47.70	40.81	33.16	0.36
83.4	0.86	47.77	35.93	30.86	0.37
85.0	1.01	48.32	25.12	23.43	0.42
90.0	2.54	34.93	9.29	8.96	0.70
91.4	3.68	26.90	6.95	6.90	0.89
93.0	5.99	17.87	5.49	8.58	1.47
94.0	11.13	11.77	4.67	15.66	2.45
94.6	15.35	9.42	4.41	5.73	2.83
98.2	25.98	2.64	11.18	1.06	9.93
101.0	38.94	1.40	21.56	0.75	20.90
102.0	43.48	1.24	24.80	0.70	24.60
105.0	56.10	0.94	28.32	0.59	27.13
109.2	58.08	0.73	28.70	0.52	27.71
113.0	54.97	0.61	28.88	0.48	29.54
115.0	54.60	0.57	29.23	0.47	30.70
118.0	54.09	0.51	30.18	0.46	32.98
121.0	53.87	0.47	31.61	0.46	36.00
125.0	53.88	0.42	33.58	0.46	41.81
600.0	52.73	0.30	27.97	0.37	27.92
900.0	52.86	0.39	37.92	0.47	32.59
1002.0	52.02	0.43	43.85	0.52	30.22
1100.0	52.22	0.47	31.30	0.61	28.03
1200.0	51.79	0.51	27.12	0.69	28.12
1218.0	51.14	0.53	26.61	0.69	28.83
1220.0	50.97	0.53	26.54	0.70	28.80

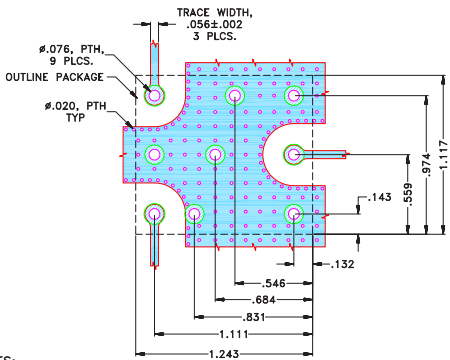


Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	
1.243	1.117	.630	.475	.375	.255	.040	.070	.132	.546	
31.56	28.36	16.00	12.07	9.53	6.48	1.02	1.78	3.35	13.87	
L	M	N	P	Q	R	S	T			Wt. grams
.684	.831	1.111	.143	.559	.974	.417	.415			7
17.37	21.10	28.22	3.63	14.21	24.74	10.58	10.53			

Demo Board MCL P/N: TB-897+ Suggested PCB Layout (PL-485)

SUGGESTED MOUNTING CONFIGURATION FOR QB2223 CASE STYLE



NOTES:

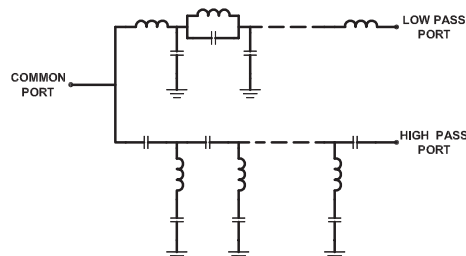
1. TRACE WIDTH IS SHOWN FOR IT180, WITH DIELECTRIC THICKNESS .059"±.005", COPPER: 1/2 Oz EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

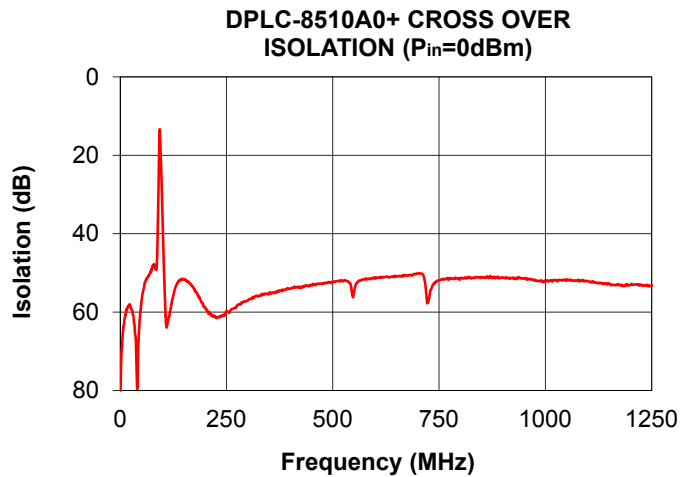
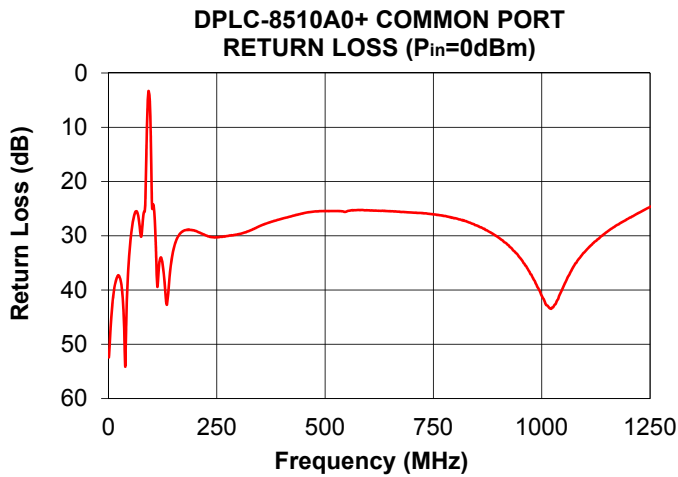
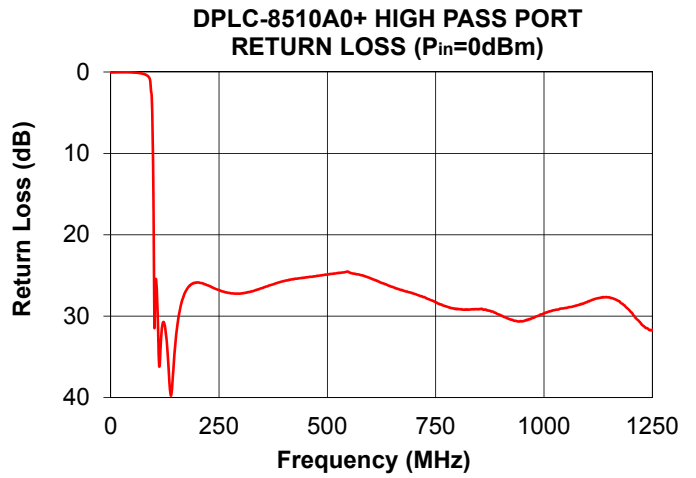
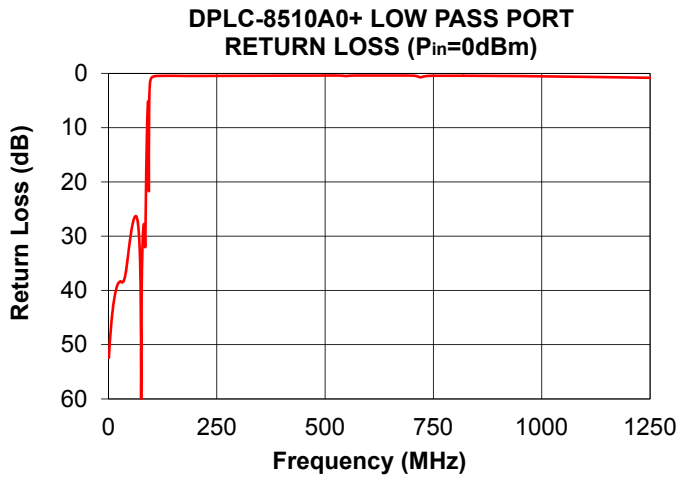
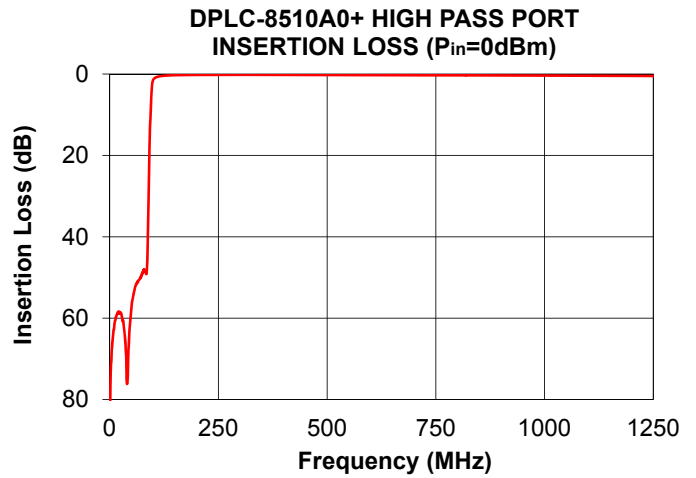
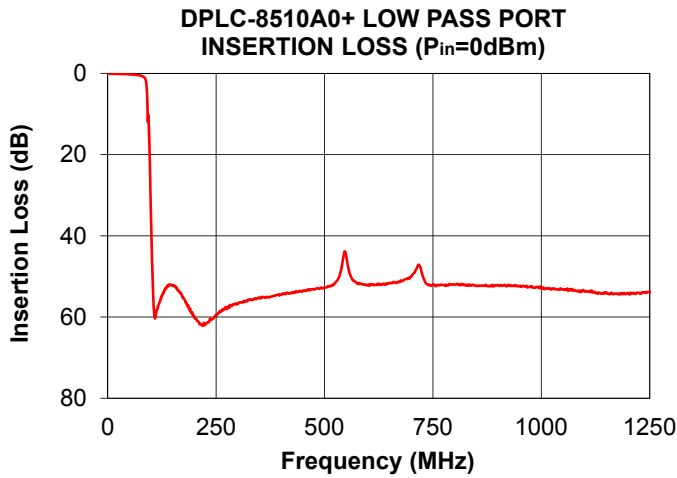
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

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Functional Schematic





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