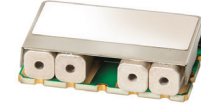


Surface Mount

# Diplexer

## CDPL-1710A+

50Ω 1176, 1590 MHz



CASE STYLE: NT1997

### The Big Deal

- Low insertion loss
- High rejection
- Good return loss

### Product Overview

CDPL-1710A+ is a 50Ω high performance diplexer with the channel-1 at 1176 MHz and channel-2 at 1590 MHz. Good return loss combined with high out of channel rejection makes it a ideal component in differential GPS.

### Key Features

Feature	Advantages
Low passband insertion loss	Passband insertion loss 1dB ensures low signal loss through both the channels.
Excellent Stopband rejection	Co-channel rejection 47 dB typical ensures unwanted spurious are eliminated.
Good return loss	This makes signal transmission with very less rejection 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](http://www.minicircuits.com/MCLStore/terms.jsp)

# Surface Mount Diplexer

# CDPL-1710A+

50Ω 1176, 1590 MHz

## Maximum Ratings

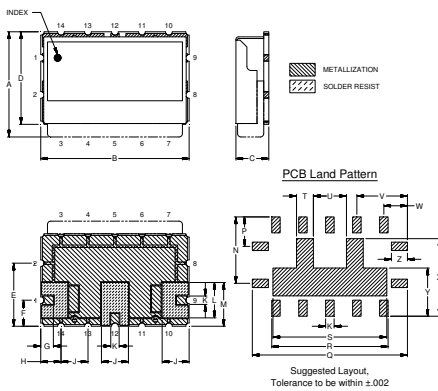
Operating Temperature	-40° to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	30dBm Max.

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

## Pin Connections

CHANNEL-1	9
CHANNEL-2	1
COMMON PORT	12
GROUND	2-8,10,11,13,14

## Outline Drawing

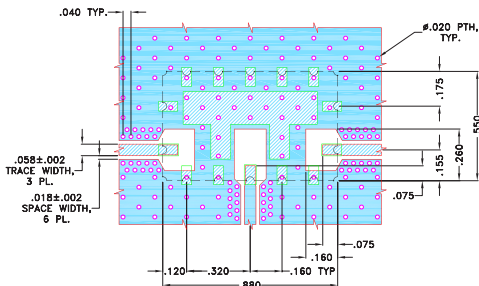


## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.625	.880	.250	.550	.375	.155	.075	.120	.160
15.88	22.35	6.35	13.97	9.53	3.94	1.91	3.05	4.06
K	L	M	N	P	Q	R	S	T
.050	.210	.260	.395	.175	.920	.690	.675	.100
1.27	5.33	6.60	10.03	4.45	23.37	17.53	17.15	2.54
U	V	W	X	Y	Z	Wt.		
.196	.300	.140	.461	.286	.095	grams		
4.98	7.62	3.56	11.71	7.26	2.41	3.8		

Demo Board MCL P/N: TB-814+  
Suggested PCB Layout (PL-432)

SUGGESTED MOUNTING CONFIGURATION FOR  
NT1997 CASE STYLE "14DP02" PIN CODE



### NOTES:

- TRACE WIDTH IS SHOWN FOR OAK-602 WITH DIELECTRIC THICKNESS .022±.0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE THICKENED.
- 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

### Notes

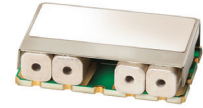
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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](http://www.minicircuits.com/MCLStore/terms.jsp)

## Features

- Low insertion loss
- 50Ω Impedance
- Good return loss
- High rejection

## Applications

- Differential GPS
- Aeronautical Radio navigation



CASE STYLE: NT1997

**+RoHS Compliant**

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

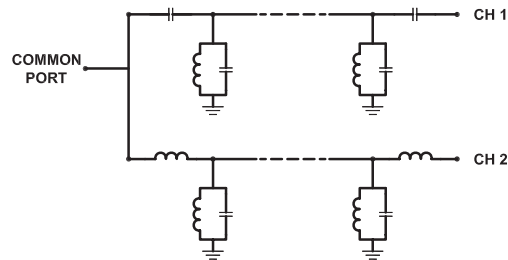
## Electrical Specifications at 25°C

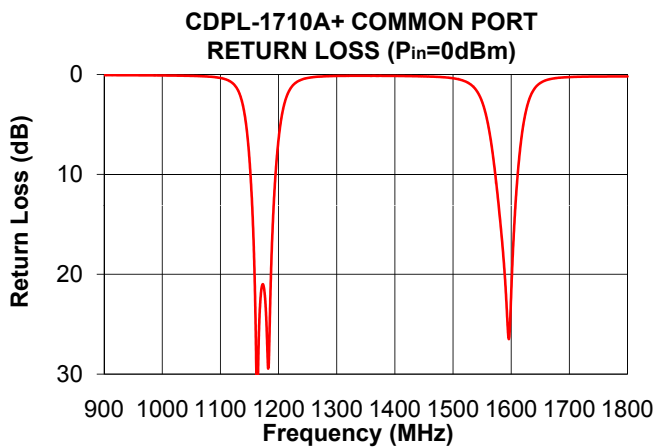
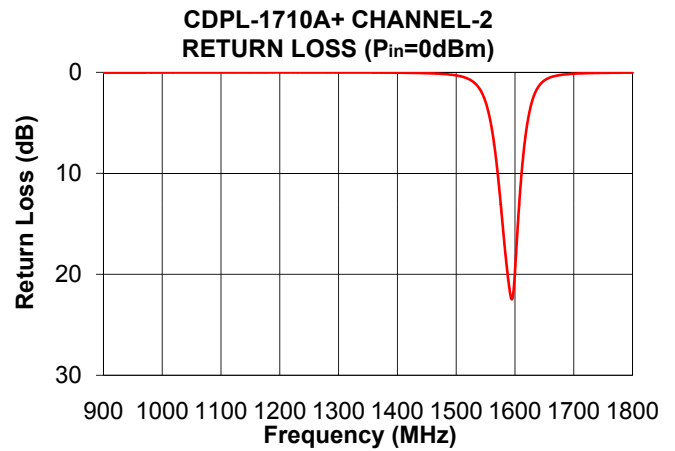
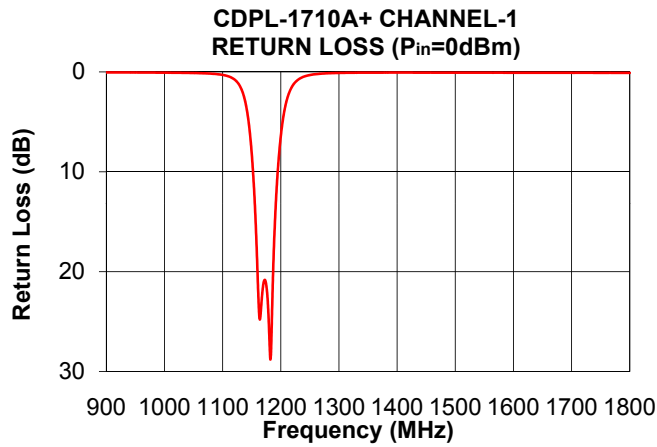
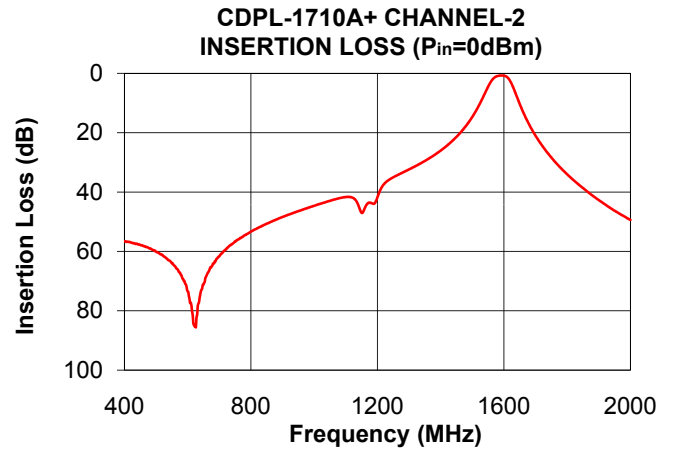
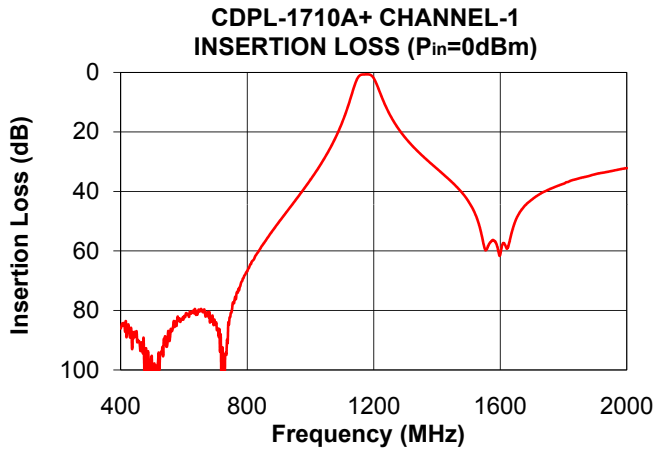
Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	Channel-1	1176	-	0.8	1.0	dB
		Channel-2	1590	-	0.8	1.0	
	3 dB Bandwidth	Channel-1	1176	-	60	-	MHz
		Channel-2	1590	-	60	-	
	Return Loss	Channel-1	1176	-	10.9	-	dB
		Channel-2	1590	-	10.9	-	
Common		1176	-	10.9	-		
		1590	-	10.9	-		
Stop Band Isolation	Channel-1	1590	30	50.6	-	dB	
	Channel-2	1176	30	39.7	-		

## Typical Performance Data at 25°C

FREQUENCY (MHz)	INSERTION LOSS (dB)			RETURN LOSS (dB)	
	Channel-1	Channel-2	Common Port	Channel-1	Channel-2
400	86.04	56.56	0.11	0.03	0.11
600	81.91	73.45	0.06	0.02	0.08
750	80.68	56.60	0.05	0.04	0.05
800	66.89	53.34	0.05	0.04	0.04
950	43.33	46.44	0.07	0.07	0.03
1000	36.06	44.64	0.09	0.08	0.03
1036	30.26	43.41	0.12	0.10	0.02
1084	20.82	41.98	0.23	0.20	0.02
1100	16.85	41.69	0.35	0.30	0.02
1144	3.03	45.66	4.93	4.71	0.02
1148	2.10	46.72	7.10	6.79	0.02
1150	1.73	46.99	8.54	8.15	0.02
1176	0.68	43.60	21.87	21.81	0.02
1202	2.36	41.23	5.51	5.47	0.01
1208	3.69	39.59	3.41	3.38	0.02
1290	20.69	32.91	0.16	0.12	0.02
1380	30.54	27.54	0.14	0.08	0.03
1590	58.34	0.76	21.04	0.09	21.18
1650	49.35	10.32	0.85	0.09	0.81
1770	38.63	30.81	0.19	0.10	0.05
1900	34.24	42.72	0.19	0.11	0.01
2000	32.18	49.39	0.20	0.12	0.01

## Functional Schematic





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](http://www.minicircuits.com/MCLStore/terms.jsp)

